



TECHNOLOGY ADDICTION AND ITS IMPACT ON FEAR OF REJECTION, SOCIAL ANXIETY AND SLEEP QUALITY AMONG ADOLESCENTS – A PILOT STUDY

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ABSTRACT

Studies show 50% of adolescents feel addicted to smartphones, with 35% experiencing social anxiety. In India, rapid smartphone growth raises concerns about mental health and sleep quality among youth. **Methodology:** This study aims to evaluate technology addiction levels among adolescents in urban and rural areas of Gurgaon, Haryana, focusing on its impact on fear of rejection, social anxiety, and sleep quality. Using a quantitative correlational design, the study will collect data at a single point in time from adolescents aged 13 to 18 years, using convenience sampling. Participants will be assessed for technology addiction using the Internet Addiction Test (IAT), fear of rejection with the 15-item Fear of Rejection Scale, social anxiety through the Kutcher Generalized Social Anxiety Disorder Scale for Adolescents (K-GSADS-A), and sleep quality via the Sleep Quality Scale (SQS). **Result:** The data reveals notable differences between urban and rural adolescents in terms of internet addiction, fear of rejection, social anxiety, and quality of life. Urban adolescents generally exhibit average internet usage, with 62.5% categorized as average users, while rural adolescents show higher levels of problematic internet use, with a mean score of 58.26 compared to 48.63 for urban adolescents. Fear of rejection is slightly higher in rural adolescents (mean = 60.11), with greater variability in their experiences. Urban adolescents report lower levels of fear, with 87.5% indicating very low levels. Social anxiety is more pronounced in urban adolescents, with all reporting discomfort, while rural adolescents show more variation in anxiety levels. Quality of life assessments indicate similar overall perceptions in both groups, though urban adolescents report slightly higher quality of life scores (mean = 44.18). Both groups primarily consider their quality of life average,

with rural adolescents slightly more likely to report "good" QoL. **Conclusion:** The study highlights significant differences between urban and rural adolescents in technology addiction, psychosocial factors, and quality of life. Rural adolescents tend to experience higher variability in internet usage and psychosocial challenges compared to their urban counterparts.

Keyword: *Technology addiction, Fear of rejection, social anxiety, Sleep quality, Adolescents*

INTRODUCTION

Technology addiction has become a significant concern, especially among adolescents, as they increasingly integrate digital devices and social media platforms into their daily lives. Adolescence is a critical period of emotional and social development, and the rise in technology use during this time has raised questions about its effects on mental health and overall well-being. Among the various consequences of excessive technology use, fear of rejection, social anxiety, and sleep quality have emerged as crucial areas of concern.¹ Fear of rejection, often linked to social media use, can exacerbate feelings of isolation and inadequacy, which are particularly pronounced in adolescent populations. Studies suggest that the constant comparison to others online can lead to heightened social anxiety and a diminished sense of self-worth. Furthermore, research indicates that excessive screen time, particularly before bedtime, significantly disrupts sleep patterns, leading to poor sleep quality, which in turn negatively impacts cognitive function, emotional regulation, and overall mental health.² In urban and rural areas, the extent of technology addiction and its psychological effects can differ due to varying access to technology, social structures, and lifestyle factors. Adolescents living in urban areas may have more exposure to digital devices and social media, while rural adolescents might experience different pressures, such as limited face-to-face social opportunities, which may also contribute to anxiety and addiction in different ways.³

Statistical evidence highlights the magnitude of this issue. According to a study published in PLOS ONE, approximately 50% of adolescents report feeling addicted to their smartphones, with 35% experiencing symptoms of social anxiety. Furthermore, a survey by the National Sleep Foundation found that 72% of adolescents reported inadequate sleep due to technology use, with urban adolescents being more likely to experience these sleep disturbances compared to their rural counterparts.⁴

NEED OF THE STUDY

The prevalence of mobile phone addiction among adolescents is a growing global concern, with rates varying from 2.4% to as high as 60.3% across different regions. India, with its rapidly expanding digital consumer market, is witnessing significant growth in smartphone usage, particularly among adolescents.⁵ In 2018, India had 560 million internet subscribers, and by 2023, the number of mobile app downloads is projected to surpass 46.2 billion, more than doubling the 2018 figure (Pew Research Center, 2020). Despite this rapid adoption, limited research has been conducted to explore the consequences of excessive smartphone use among Indian adolescents,

especially regarding its impact on mental health factors like fear of rejection, social anxiety, and sleep quality.⁶ Smartphones, which offer a wide range of functionalities beyond traditional mobile calling—such as web browsing, gaming, and social media—have become integral to adolescent life. However, the increasing dependence on smartphones has raised concerns about their negative effects on psychosocial well-being, particularly in terms of quality of life (QOL).⁷ For instance, a study by M. Sharma et al. (2017) found that mobile phone overuse was linked to higher levels of psychiatric distress, with mobile phone users showing a negative correlation with their overall QOL.⁸ Research indicates that the impact of smartphone addiction differs between urban and rural adolescents. Yeon (2015) found that urban adolescents were more affected by resting and screen time, while rural adolescents' addiction was influenced by factors like sex and economic background.⁹ A study by Pawłowska et al. (2015) revealed that 0.45% of urban adolescents and 2.9% of rural adolescents met the criteria for internet addiction, indicating that while urban adolescents exhibited more intense symptoms, rural adolescents had a higher overall risk.¹⁰ These findings are consistent with Daoud et al. (2021), who noted significant variations in the impact of smartphone addiction based on location and emphasized the need for region-specific interventions.¹¹

AIM OF THE STUDY

The aim of this study is to assess the level of technology addiction and its impact on fear of rejection, social anxiety, and sleep quality among adolescents residing in selected urban and rural areas of Gurgaon, Haryana.

METHODOLOGY

The primary objective of this study is to assess the level of technology addiction among adolescents in selected urban and rural areas of Gurgaon, Haryana. Technology addiction, particularly in relation to mobile phones and internet usage, has become a growing concern among adolescents, and understanding the extent of this addiction in both urban and rural settings is crucial. The study also aims to assess the impact of technology addiction on various psychosocial aspects such as fear of rejection, social anxiety, and sleep quality. These three factors are significant as they can contribute to the overall well-being of adolescents, and understanding their relationship with technology usage will provide valuable insights for intervention strategies.

The research approach used in this study is a quantitative correlational research design, specifically employing a descriptive approach to collect data at a single point in time. The target population for this study comprises adolescents aged 13 to 18 years who reside in selected urban and rural areas of Gurgaon, Haryana. Convenience sampling will be employed to select participants based on their availability and willingness to participate. The inclusion criteria for this study are adolescents aged 13 to 18 years residing in the selected areas of Gurgaon who are willing to provide informed consent. Adolescents who are below 13 years or above 18 years, individuals unwilling to provide informed consent, and those with a history of diagnosed mental health disorders will be excluded from the study.

To assess technology addiction, the study will use the Internet Addiction Test (IAT), while the 15-item Fear of Rejection Scale will be employed to measure fear of rejection. Social anxiety will be evaluated using the Kutcher Generalized Social Anxiety Disorder Scale for Adolescents (K-GSADS-A), and sleep quality will be measured using the Sleep Quality Scale (SQS). These assessment tools will help in providing a comprehensive understanding of the relationships between technology addiction, fear of rejection, social anxiety, and sleep quality among adolescents in both urban and rural areas.

RESULT

To assess the level of technology addiction among adolescents in selected urban & rural areas of Gurgaon, Haryana.

Table 1: Level of technology addiction among adolescents in selected urban & rural areas of Gurgaon, Haryana.

Internet Addiction	URBAN		RURAL	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Average internet user	50	62.50	26	32.5
Occasional or frequent internet user	30	37.50	43	53.75
Significant problematic user	0	0.00	11	13.75
Mean	48.63		58.26	
SD	6.10		14.63	

The table 1 interpret the data on internet addiction shows clear differences between urban and rural adolescents in terms of their internet usage patterns. In the urban group, a majority (62.5%) were categorized as average internet users, while 37.5% were either occasional or frequent users. Interestingly, no participants in the urban group were classified as significant problematic users. In contrast, the rural group had a higher percentage of occasional or frequent internet users (53.75%) and a notable portion (13.75%) who were considered significant problematic users. This suggests that rural adolescents may be more prone to problematic internet use compared to their urban counterparts.

The mean scores for internet addiction were higher for rural adolescents (58.26) compared to urban adolescents (48.63), indicating that rural adolescents, on average, show higher levels of internet addiction. The standard deviation (SD) further reinforces this finding, with rural adolescents exhibiting a wider spread in their internet usage patterns (SD = 14.63) compared to urban adolescents (SD = 6.10). This higher SD in the rural group suggests greater variability in internet usage, with some rural adolescents showing more severe levels of internet

addiction. Overall, the data implies that while urban adolescents tend to have average internet use, rural adolescents have a greater tendency toward frequent and problematic internet usage, with a more significant spread in the severity of internet addiction.

To assess the fear of rejection, social anxiety, sleep quality among adolescents in selected urban & rural areas of Gurgaon, Haryana.

Table 2: Fear of rejection among adolescents in selected urban & rural areas of Gurgaon, Haryana.

Fear of Rejection	URBAN		RURAL	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Very low Level of Fear of Rejection	70	87.50	32	40
Low Level of Fear of Rejection	2	2.50	23	28.75
Moderate Level of Fear of Rejection	8	10.00	23	28.75
High Level of Fear of Rejection	0	0.00	2	2.5
Extremely high Level of fear of rejection	0	0.00	0	0
Mean	55.46		60.11	
SD	8.97		9.97	

The data in table 2 on fear of rejection reveals noticeable differences between urban and rural adolescents. In the urban group, a significant majority (87.5%) reported a very low level of fear of rejection, with only a small percentage indicating a low (2.5%) or moderate (10%) level of fear. No participants in the urban group experienced high or extremely high levels of fear of rejection. In contrast, the rural group exhibited more variation, with 40% of adolescents reporting a very low level of fear of rejection, but a considerable portion (28.75%) indicated both low and moderate levels of fear. Only 2.5% of rural adolescents reported high levels of fear of rejection, while no one had an extremely high level.

The mean scores for fear of rejection were relatively similar but still higher in rural adolescents (60.11) compared to urban adolescents (55.46), suggesting that rural adolescents generally experience a slightly higher level of fear of rejection. The standard deviations (SD) further support this, with rural adolescents showing a greater variation in their levels of fear (SD = 9.97) compared to urban adolescents (SD = 8.97). This indicates that while most

urban adolescents report very low levels of fear, rural adolescents exhibit a broader range of experiences, from very low to moderate levels of fear of rejection.

Table 3: Social anxiety among adolescents in selected urban & rural areas of Gurgaon, Haryana.

Level of Social Anxiety (Avoidance)	URBAN		RURAL	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Worsening Discomfort, Anxiety, Distress	80	100.00	10	12.50
Moderate level of Discomfort, Anxiety, Distress	0	0.00	68	85.00
Mild Level of Discomfort, Anxiety, Distress	0	0.00	2	2.50
Mean	39.98		29.89	
SD	1.85		6.26	

The table 3 presents data on social anxiety (avoidance) highlights significant differences between urban and rural adolescents in their experiences of discomfort, anxiety, and distress. In the urban group, all participants (100%) reported experiencing "worsening discomfort, anxiety, and distress," indicating that urban adolescents generally face higher levels of social anxiety. In contrast, the rural group showed a wide range of responses: 85% of rural adolescents reported a moderate level of discomfort, anxiety, and distress, while 12.5% reported worsening anxiety, and 2.5% indicated mild levels of discomfort.

The mean scores for social anxiety further reinforce these trends, with urban adolescents scoring higher on the scale (39.98) compared to rural adolescents (29.89), suggesting that urban adolescents, on average, experience a greater level of social anxiety. Additionally, the standard deviations (SD) highlight the variability of social anxiety in both groups. Urban adolescents exhibited a low SD of 1.85, indicating little variation in their levels of social anxiety, with most participants experiencing similar intense levels. On the other hand, the rural group had a higher SD of 6.26, indicating more variation in the severity of social anxiety, with some adolescents reporting higher levels of discomfort and others reporting lower levels. This suggests that rural adolescents experience more diversity in their social anxiety levels.

Table 4: Sleep quality among adolescents in selected urban & rural areas of Gurgaon, Haryana.

Level of Quality of Life	URBAN		RURAL	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good Quality of life	2	2.50	5	6.25
Average Quality of life	73	91.25	75	93.75
Poor Quality of life	5	6.25	0	0
Mean	44.18		41.89	
SD	7.41		7.42	

The data presented in table 4 on the level of quality of life (QoL) among adolescents in urban and rural areas of Gurgaon reveals some interesting insights. In both groups, the majority of participants reported having an "average" quality of life, with 91.25% of urban adolescents and 93.75% of rural adolescents selecting this option. In the urban group, 2.5% reported a "good" quality of life, while 6.25% indicated a "poor" quality of life. On the other hand, in the rural group, 6.25% of adolescents reported a "good" quality of life, and none reported a "poor" quality of life.

When considering the mean scores for quality of life, urban adolescents (mean = 44.18) rated their quality of life slightly higher than rural adolescents (mean = 41.89). However, the standard deviations (SD) for both groups were similar—7.41 for the urban group and 7.42 for the rural group—indicating a comparable level of variability in the quality of life assessments within both groups.

This suggests that while the overall quality of life perception is relatively similar between the two groups, urban adolescents may report slightly higher QoL. The rural group, however, has a slightly higher proportion reporting "good" QoL, but overall, the majority in both urban and rural areas fall within the "average" category.

DISCUSSION

The data on internet addiction shows that urban adolescents exhibit more controlled internet usage, with the majority (62.5%) categorized as average users. In contrast, rural adolescents display higher rates of occasional or frequent use (53.75%) and a significant proportion (13.75%) of problematic users. This finding aligns with Caplan (2010), who argued that internet dependency exacerbates social anxiety, leading to more frequent online interactions. In rural areas, however, adolescents are more likely to use the internet excessively, possibly due to fewer face-to-face social opportunities and more limited social networks, which could contribute to higher levels

of internet addiction, as indicated by the higher mean score (58.26) for rural adolescents compared to urban adolescents (48.63). This highlights the greater variability in rural adolescents' usage patterns ($SD = 14.63$) compared to their urban counterparts ($SD = 6.10$), supporting findings from Caplan (2010) that excessive internet use can form a cycle that worsens social anxiety.

Fear of rejection, urban adolescents reported very low levels of fear (87.5%), whereas rural adolescents showed more variation. Rural adolescents had a broader range of responses, with 28.75% indicating moderate or low levels of fear. This variability is consistent with Wu (2021), who found that rural adolescents often have smaller social networks and are less exposed to diverse social environments, which may increase their fear of rejection in unfamiliar settings. Despite the higher mean score (60.11) for rural adolescents, suggesting slightly higher overall fear of rejection, the variability ($SD = 9.97$) reflects individual differences in how adolescents experience social anxiety.

Social anxiety (avoidance) shows that urban adolescents report higher levels of social anxiety with 100% indicating worsening discomfort. This resonates with findings from Weinstein (2014), who suggested that urban adolescents face increased social comparison and competition, leading to heightened anxiety. In contrast, rural adolescents reported more moderate anxiety, with the mean score for urban adolescents (39.98) being higher than rural adolescents (29.89). The greater variability ($SD = 6.26$) in rural adolescents' anxiety levels further reflects individual differences, suggesting a more diverse range of social coping strategies compared to the more consistent responses in urban adolescents.

Finally, the data on quality of life (QoL) reveals that while most adolescents in both urban (91.25%) and rural (93.75%) areas report an average QoL, urban adolescents reported slightly higher scores on average (44.18 vs. 41.89). This might reflect the greater access to resources in urban areas, as highlighted in studies like Tuckman and Greer (2019), which found that urban adolescents may experience greater pressure but also have more access to opportunities. However, rural adolescents' higher proportion reporting a "good" QoL (6.25%) suggests the role of strong community ties, which can buffer against stressors, as also noted by Chen (2020), who found that rural adolescents benefit from strong, supportive offline networks.

CONCLUSION

In conclusion, the findings of this study underscore the significant differences between urban and rural adolescents in their social and psychological experiences. Urban adolescents tend to exhibit more severe internet addiction, social anxiety, and avoidance behaviors compared to their rural counterparts. This could be attributed to the highly competitive and socially complex urban environments, which may increase exposure to social comparison and external pressures. Additionally, urban adolescents' higher reliance on digital communication platforms may lead to increased social withdrawal, further exacerbating feelings of anxiety and avoidance.

Conversely, rural adolescents, while still experiencing social anxiety and some internet dependency, appear to benefit from more stable and supportive social networks. These networks, often rooted in family and community, help mitigate the intensity of their social anxiety and provide a buffer against social rejection. However, rural adolescents show more variability in their internet use and fear of rejection, suggesting that while they have stronger offline support, they also face unique challenges due to limited exposure to diverse social environments.

Overall, these findings highlight the importance of considering the broader social and environmental contexts when addressing adolescent mental health. Tailored interventions that account for these differences can better support the diverse needs of adolescents in both urban and rural settings.

ETHICAL CONSIDERATIONS

Permission obtained from the Institutional ethical committee of Desh Bhagat University Punjab. In the current study to consider ethical principles the purpose of the study was explained to all the research participants and informed consent was obtained from them. The participants were assured of the confidentiality of the data

CONFLICT OF INTEREST:

The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

AUTHOR CONTRIBUTION

The first author contributed to all stages of the research process, while the second author performed as a research guide and agreed with the content of the manuscript.

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