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Exploring the Relationship Between Social Networking Addiction and Loneliness Among Single-Child Adolescents from Nuclear Families

Dr. Khushboo[1], Dr. Meenakshi Bajpai[2]

[1]*Department of Psychology, Govt. Raza P. G. College, Rampur, Guru Jambheshwar University, Moradabad, UP, India.*
[2]*Department of Psychology, Arya Mahila P. G. College, Banaras Hindu University, Varanasi, UP, India*

***Abstract*—The present study investigates the levels of social networking addiction and loneliness among single-child adolescents from nuclear families and examines the relationship between the two variables. It also explores gender differences in these psychological constructs. The sample consisted of 110 adolescents (55 males and 55 females) aged 16 to 18 years from Maharashtra, selected through purposive sampling. Data were collected using the Loneliness Inventory and the Social Networking Addiction Scale and analyzed through descriptive statistics, Pearson's correlation, and independent samples t-test. Results revealed that 88.1% of the participants experienced high levels of loneliness, while 99.1% demonstrated either problematic or addictive social networking use. A significant positive correlation was found between social networking addiction and loneliness ($r = 0.418$, $p < 0.01$), indicating that greater social media dependency is associated with increased loneliness. However, no significant gender differences were observed. The findings highlight the psychological vulnerability of single-child adolescents in nuclear families and underscore the need for targeted digital literacy and emotional support interventions.**

***Keywords*-- loneliness, social networking addiction, adolescents, nuclear families, single-child, gender differences.**

I. Introduction

In today's digital world, social media is an essential part of adolescent life. With smartphones and internet access becoming widespread, platforms like Instagram, Facebook, WhatsApp, Snapchat, and Twitter offer entertainment and ways to connect (Anderson & Jiang, 2018). However, rising social media use has raised concerns about its effects on adolescents' mental health, particularly loneliness (Keles, McCrae, & Grealish, 2019). Though meant to connect people, excessive use of social networking sites (SNS) may weaken real-life social bonds and increase emotional and social loneliness (Nowland, Necka, & Cacioppo, 2018; Weiss, 1973). Prolonged loneliness is linked to serious outcomes such as depression, anxiety, and suicidal thoughts (Hawkley & Cacioppo, 2010; Matthews et al., 2019). Another concern is internet addiction, especially among adolescents.

It involves compulsive internet use that disrupts daily life (Beard & Wolf, 2001; Kandell, 1998). Adolescents in nuclear families or without siblings may be more vulnerable due to limited emotional support and fewer opportunities for offline interaction (Twenge & Campbell, 2019). The COVID-19 pandemic worsened the issue. Lockdowns and school closures led to a sharp rise in social media use, affecting adolescents' emotional well-being (Kantar, 2020; Liu et al., 2021). While some studies suggest social media helped maintain social ties (Ellison, Steinfield, & Lampe, 2007), others report increased psychological distress (Bonsaksen et al., 2021; Twenge, Joiner, Rogers, & Martin, 2018).Most existing research overlooks how family structure affects the impact of social media. Adolescents from nuclear families without siblings may face unique emotional challenges, making them more prone to loneliness and addictive online behavior. This study focuses on this subgroup, aiming to explore the relationship between social networking addiction and loneliness and examine gender-based differences.

A. Rationale of the Study

India has the world's largest adolescent population and a rapidly growing digital landscape. As of 2025, around 491 million Indians used social media, with adolescents forming a large part of this group (Digital, 2025). The COVID-19 pandemic further increased social media use, by 70% in early lockdown months (Kantar, 2020). While digital platforms offered connection during isolation, they also led to problematic usage. Single-child adolescents in nuclear families, with limited offline support, may rely more heavily on social media. This can result in emotional loneliness and reduced real-life interaction (Nowland et al., 2018). Additionally, online content may foster comparison, peer pressure, and cyberbullying, harming self-esteem (Twenge & Campbell, 2019). Sherry Turkle's *Alone Together* highlights how digital overuse can result in emotional disconnection and reduced face-to-face empathy (Turkle, 2011). Indian experts, such as Dr. Yatan Balhara of AIIMS, have also flagged rising social media addiction as a youth mental health concern.

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Despite such insights, few studies have focused on single-child adolescents from nuclear families. This research addresses this gap by examining how SNS addiction and loneliness are connected in this specific population. Findings may help in designing targeted interventions to improve emotional well-being and promote responsible social media use.

B. Objectives of the Study

1. To assess the levels of social networking addiction and loneliness among single-child adolescents from nuclear families.
2. To examine the relationship between social networking addiction and loneliness in single-child adolescents from nuclear families.
3. To explore gender differences in social networking addiction and loneliness among single-child adolescents from nuclear families.

C. Hypotheses of the Study

The major hypotheses of the present study are as follows:

- *H1:* There will be a significant level of social networking addiction and loneliness among single-child adolescents from nuclear families.
- *H2:* Social networking addiction will be significantly correlated with loneliness among single-child adolescents from nuclear families.
- *H3:* There will be a significant gender difference in the levels of social networking addiction and loneliness among single-child adolescents from nuclear families.

II. Methodology

A. Sample and Sampling Techniques

The sample for the study comprised 110 adolescents, males (N = 55) and females (N = 55), aged between 16 and 18 years, residing in the state of Maharashtra, India. Participants were selected using the purposive sampling technique, ensuring that all respondents were single children from nuclear families.

B. Inclusion Criteria

The inclusion criteria for participation in the present study were as follows:

- Adolescents who are single children from nuclear families
- Adolescents aged between 16 and 18 years
- Adolescents who are frequent users of social networking sites
- Adolescents who have regular access to electronic devices, including desktops, laptops, tablets, or smartphones

C. Exclusion Criteria

The exclusion criteria for the present study were as follows:

- Single-child adolescents residing in a joint family or those who have siblings
- Adolescents aged below 16 or above 18 years
- Adolescents who use the internet exclusively for academic or study-related purposes
- Adolescents without access to electronic devices such as desktops, laptops, tablets, or smartphones

D. Research Design

The present study employed a correlational research design to examine the relationship between social networking addiction and loneliness among single-child adolescents from nuclear families. Additionally, a between-group (comparative) design was used to compare male and female participants on their levels of social networking addiction and loneliness.

E. Tools

1) *Loneliness Inventory (LI):* The Loneliness Inventory was developed by Uma and Meenakshi to measure the level of loneliness experienced in day-to-day life. The inventory consists of 22 items, of which 13 are positively worded and 9 are negatively worded. It follows a five-point Likert scale with response options ranging from Never, Rarely, Sometimes, Many times, to Always.

Scoring is interpreted as follows:

- A score of 36 and below indicates a low level of loneliness.
- A score of 50 and above indicates a high level of loneliness.
- Scores between 37 and 49 are considered to represent an average level of loneliness.

The reliability coefficient of the inventory, calculated using the Spearman-Brown prophecy formula, is 0.92, indicating a high level of internal consistency. The concurrent validity was found to be 0.85, suggesting that the tool is highly valid for assessing loneliness.

2) *Social Networking Addiction Scale (SNAS):* The Social Networking Addiction Scale was developed by Md Ghazi Shahnawaz, Nivedita Ganguli, and Manchong Limlunthang Zou. It comprises 32 items, including 23 positive and 9 negative statements.

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The scale uses a five-point Likert format with response options ranging from Strongly Agree, Agree, Undecided, Disagree, to Strongly Disagree.

The scale is designed to assess the intensity of social networking site usage and determine whether such usage interferes with the individual's daily life. According to the scale:

- Scores up to the 50th percentile indicate acceptable use.
- Scores above the 50th percentile indicate problematic use.
- Scores above the 75th percentile suggest addiction, warranting psychological intervention.

The internal consistency of the scale, as measured by Cronbach's alpha, is 0.94, indicating excellent reliability.

F. Statistical Analyses

The data were analyzed using both descriptive and inferential statistics. First, descriptive statistics (percentages) were calculated to determine the levels of loneliness and social networking addiction among the 110 single-child adolescents from nuclear families. Next, Pearson's product-moment correlation was employed to examine the relationship between loneliness and social networking addiction. Finally, an independent samples t-test was conducted to assess gender differences in the levels of loneliness and social networking addiction among male and female single-child adolescents from nuclear families.

III. Results

The first hypothesis examined the levels of loneliness and social networking addiction among 110 male and female individuals aged 16 to 18 years, residing in the state of Maharashtra. Descriptive statistics (percentages) were used to determine the prevalence of loneliness and social networking addiction among single-child adolescents from nuclear families. The data in Table 1 show that 88.19% of single-child adolescents from nuclear families reported high levels of loneliness, while 11.81% experienced moderate levels**.** Importantly, no participants fell in the low loneliness category. These findings indicate a high prevalence of loneliness in this population, highlighting the possible emotional impact of limited familial and social interaction.

Table I: ***Percentage distribution of Loneliness*** **in single-child adolescents in nuclear families (n=110).**

Range	Level	Percentage
<36	Low	0%
36-49	Moderate	11.81%
> 50	High	88.19%

Table 2 shows the percentage distribution of social networking addiction among single-child adolescents in nuclear families. The results indicate that **40%** of participants demonstrated an **addictive level** of social networking use, while **59.10%** fell into the **problematic use** category. Only **0.90%** of adolescents reported a **low level** of use.

These findings suggest that a **large majority (99.10%)** of adolescents in this group exhibit excessive or concerning patterns of social media use, which may interfere with their daily functioning and emotional well-being.

Table II: ***Percentage distribution of the Social Networking Addiction*** **in single-child adolescents in nuclear families** (n=110).

Range	Level	Percentage
<68	Low	0.90%
68-96	Problematic	59.10%
> 96	Addictive	40.00%

The second hypothesis examined the relationship between loneliness and social networking addiction. To test this, the correlation coefficient (Pearson's r) was calculated. The results revealed a significant positive correlation between loneliness and social networking addiction. Table 3 presents the Pearson's correlation between loneliness and social networking addiction among single-child adolescents in nuclear families. The analysis revealed a significant positive correlation ($r = 0.418$, $p < 0.01$), indicating that as social networking addiction increases, levels of loneliness also tend to rise. This result supports the second hypothesis and suggests that excessive use of social networking sites may be associated with greater feelings of social or emotional isolation in this population.

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Table III: Pearson's Correlation for Loneliness and Social Networking Addiction in single-child adolescents in nuclear families (P< 0.01).

Variables	N	r	p
Loneliness	110	0.418**	<0.01
Social Networking Addiction	110		

The third hypothesis examined gender differences between male and female single-child adolescents from nuclear families in terms of loneliness and social networking addiction.

To test this, an independent samples *t*-test was conducted. The results showed that there was no statistically significant difference between males and females in their levels of loneliness and social networking addiction.

Table IV presents the results of the independent samples *t*-test conducted to examine gender differences in loneliness and social networking addiction among single-child adolescents in nuclear families. The results show that there was no statistically significant difference between males (M = 55.73, SD = 8.57) and females (M = 54.40, SD = 9.61) in terms of loneliness ($t = 0.764, p > 0.05$). Similarly, although males (M = 96.49, SD = 11.66) scored higher than females (M = 90.11, SD = 10.93) on social networking addiction, the difference was also not statistically significant ($t = 2.960$, $p > 0.05$). These findings indicate that gender does not play a significant role in influencing levels of loneliness or social networking addiction among single-child adolescents from nuclear families.

Table IV: Differences in Male and Female Single-Child Adolescents on Loneliness and Social Networking Addiction (Not significant at a 0.05 level (p>0.05)

Variables	Category	Mean	S.D.	N	t	*p*
Loneliness	Male	55.73	8.573	110	0.764	> 0.05
	Female	54.40	9.610			
Social Networking Addiction	Male	96.49	11.663	110	2.960	
	Female	90.11	10.930			

IV. Discussion

The present study examined the levels of loneliness and social networking addiction among single-child adolescents from nuclear families. It also explored the relationship between these variables and possible gender differences. Results showed that 88.1% of participants experienced a high level of loneliness, 59.1% reported problematic, and 40% reported addictive levels of social networking addiction.

Only 0.9% fell into the low addiction category, indicating a high prevalence of both loneliness and excessive social media use in this group. A significant positive correlation was found between loneliness and social networking addiction, suggesting that increased use of social media is associated with greater feelings of loneliness. This supports prior findings by Keles et al. (2020) and Nowland et al. (2018), who noted that excessive social media use may displace meaningful offline interactions and contribute to emotional isolation.

No significant gender differences were observed in levels of loneliness or social networking addiction. This finding contrasts with earlier studies, such as Ciftci (2018), but may be explained by the similar psychosocial experiences of single-child adolescents, regardless of gender. Participants reported that Instagram, WhatsApp, YouTube, and Facebook were the most frequently used platforms, with an average daily usage of 5 to 6 hours. These platforms were primarily used for communication, entertainment, information, and, to a lesser extent, academic purposes. Studies by Turker and Dilmac (2018), Cakır and Oguz (2017), and Junghwa Lee et al. (2017) also support the link between loneliness and increased reliance on digital platforms. Bonsaksen et al. (2021) found similar trends, particularly among younger individuals during the COVID-19 pandemic. Overall, the findings highlight the psychological vulnerability of single-child adolescents in nuclear families, underscoring the need for targeted interventions to promote healthy social media use and reduce loneliness.

V. Theoretical And Practical Implications Of The Study

The findings of this study contribute to the existing body of knowledge on adolescent psychology, particularly in understanding the link between social networking addiction and loneliness in the context of family structures. The significant positive correlation observed supports existing theories suggesting that excessive online engagement may reduce meaningful offline interactions, thereby increasing emotional isolation. This adds to the theoretical discourse surrounding behavioral addiction and social displacement, especially in populations with limited familial social support, such as single-child adolescents in nuclear families.

On a practical level, the study offers valuable insights for parents, educators, and mental health professionals. Parents should be mindful of their children's emotional needs and monitor their digital activities, particularly in single-child households where opportunities for peer-like sibling interaction are absent. Schools can play a preventive role by introducing digital literacy and emotional wellness programs that promote healthy social media habits and encourage offline peer engagement. Mental health professionals may consider family structure as an important contextual factor when assessing adolescent emotional well-being and screen for both loneliness and compulsive digital behavior. Policymakers and child welfare organizations may also benefit from these findings to inform campaigns or policies focused on adolescent digital health.

Furthermore, the study highlights the importance of technology developers promoting features that support mindful usage, especially for adolescents who may be more susceptible to digital overuse. Overall, the study emphasizes the need for a balanced and supportive approach to technology use among youth.

VI. Limitations

The present study, while providing valuable insights, is not without limitations. First, the sample size was limited to 110 participants from a specific geographic region (Maharashtra), which may restrict the generalizability of the findings to broader populations. Additionally, the use of purposive sampling may introduce selection bias, as participants were not randomly selected. The study also relied solely on self-report measures, which may be influenced by social desirability or recall bias. Furthermore, the cross-sectional design of the study limits the ability to draw causal conclusions about the relationship between loneliness and social networking addiction.

VII. Future Directions

Future research could address these limitations by employing a larger and more diverse sample across different regions and socio-economic backgrounds. Using longitudinal designs would help in establishing causal relationships and understanding how these variables evolve over time. Future studies could also explore additional moderating or mediating variables such as parental involvement, peer support, or personality traits. Incorporating qualitative methods such as interviews or focus groups could provide deeper insights into adolescents' lived experiences with social media and loneliness. Finally, comparative studies between single-child and multi-sibling adolescents could further clarify the unique psychosocial risks associated with family structure.

VIII. Conclusion

The findings of this study reveal a high prevalence of both loneliness and social networking addiction among single-child adolescents from nuclear families. A significant positive relationship between these variables suggests that excessive engagement with social networking platforms may contribute to heightened feelings of isolation. Although males showed slightly higher mean scores in both variables, no statistically significant gender differences were found, indicating a similar pattern of digital dependency and emotional impact across genders.

These results underscore the importance of addressing emotional well-being and digital habits in adolescents through school-based programs, parental awareness, and mental health interventions. Considering the evolving digital landscape, it is crucial to develop preventive strategies that promote healthy technology use and strengthen real-life social connections, especially among vulnerable youth populations.

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REFERENCES

[1] Anderson, M., & Jiang, J. (2018). *Teens, social media & technology 2018*. Pew Research Center. https://www.pewresearch.org

[2] Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for Internet addiction. *Cyberpsychology & behavior*, *4*(3), 377-383.

[3] Bonsaksen, T., et al. (2021). Loneliness and its association with social media use during the COVID-19 outbreak. *Health Psychology Report*, 9(2), 129–139.

[4] Çakır, Ö., & Oğuz, E. (2017). Lise öğrencilerinin yalnızlık düzeyleri ile akıllı telefon bağımlılığı arasındaki ilişki. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, *13*(1), 418-429.

[5] Çiftçi H. (2018) "Üniversite Öğrencilerinde Sosyal Medya Bağımlılığı, MANAS Sosyal Araştırmalar Dergisi", 7(4), 417-434.

[6] Digital 2025: Social Media Statistics for India; from: https://www.meltwater.com/en/blog/social-media-statistics-india. [Last accessed on 2025 June 07].

[7] Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.

[8] Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, 40(2), 218–227.

[9] Hughes, K. (2022). Social media use and loneliness during the COVID-19 pandemic.

[10] Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyberpsychology & behavior*, *1*(1), 11-17.

[11] Kantar. (2020). *COVID-19 Barometer: Media habits during the crisis*. https://www.kantar.com

[12] Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International journal of adolescence and youth*, *25*(1), 79-93.

[13] Lawrence, K. (2021). The mediating role of social internet use on the correlation of parental efficacy, peer influence and social functioning of adolescents in the current era. *Current Research in Behavioral Sciences*, *2*, 100032.

[14] Lee, J. H., Kim, H. Y., & Kang, J. S. (2017). The effect of loneliness on SNS addiction: Moderating effect of interpersonal relations orientation and its gender difference. *Korean Journal of Clinical Psychology*, *36*(2), 154-164.

[15] Liu, C. H., Zhang, E., Wong, G. T. F., Hyun, S., & Hahm, H. C. (2021). Factors associated with depression, anxiety, and PTSD symptoms in adolescents during the COVID-19 pandemic. *Psychiatry Research*, 296, 113706.

[16] Matthews, T., Danese, A., Caspi, A., Fisher, H. L., Moffitt, T. E., & Arseneault, L. (2019). Lonely young adults in modern Britain: Findings from an epidemiological cohort study. *Psychological Medicine*, 49(2), 268–277.

[17] Nowland, R., Necka, E. A., & Cacioppo, J. T. (2018). Loneliness and social internet use: pathways to reconnection in a digital world?. *Perspectives on psychological science*, *13*(1), 70-87.

[18] Stavrova, O., & Denissen, J. (2021). Does using social media jeopardize well-being? The importance of separating within-from between-person effects. *Social Psychological and Personality Science*, *12*(6), 964-973.

[19] Tang, D., Jin, Y., Zhang, K., & Wang, D. (2022). Internet use, social networks, and loneliness among the older population in China. *Frontiers in Psychology*, *13*, 895141.

[20] Türkel, Z., & Dilmaç, B. (2019). Ergenlerde sosyal medya kullanımı, yalnızlık ve yaşam doyumu arasındaki yordayıcı ilişkiler. Necmettin Erbakan Üniversitesi Ereğli Eğitim Fakültesi Dergisi, 1(1), 57–70.

[21] Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. Basic Books.

[22] Twenge, J. M., & Campbell, W. K. (2019). *The narcissism epidemic: Living in the age of entitlement*. Atria Books.

[23] Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Journal of Abnormal Psychology*, 128(2), 119–133.

[24] Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. MIT Press.