



**Disconnected by Connection: Perceived Parental Technoference, Loneliness, and Family Satisfaction among Adolescents**

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**Abstract**

**Aim/Purpose:** The aim of this research is to understand how parental use of technological devices interferes or interrupts their conversations with their adolescents, known as parental technoference leads to loneliness among adolescents and affects their family satisfaction.

**Background:** The involvement of parents is one of the most crucial components of the adolescent's development. Due to the omnipresence of technology, there has been an increase in the parents' use of technology as well, which presents a novel challenge to the familial relationships. The study attempts to examine the role of perceived parental technoference in the well-being and family dynamics of adolescents from adolescents' perspective.

**Methodology:** Cross-sectional research design was employed in this study involving participants ranging from 14-17 years ( $n = 126$ ). Standardized measures were used to assess perceived parental technoference, loneliness and family satisfaction. Pearson's correlation and PLS-SEM for mediation analysis was used for statistical analysis.

**Contribution:** The research by providing empirical evidence significantly contributes to the existing body of literature by specifying how the parents use of technological devices affects adolescents' well-being and their family dynamics in the Indian context.



**Findings:** High parental technoference was positively correlated with loneliness and negatively with family satisfaction. Further, loneliness was negatively correlated with satisfaction with family life. Mediation analysis revealed that loneliness partially mediated the effects of parental technoference on the family satisfaction.

**Practitioner Recommendations:** Interventions targeted to create awareness among the parents, and families to create awareness about how technology usage is affecting the family environment, and relationships, to reduce the negative impact of the technoference, programs aimed at mindful use of technology, technology free family time can be introduced to improve family relationships.

**Researcher Recommendations:** Future studies are needed to examine longitudinal outcomes of parental technoference on adolescent development, patterns of technoference differences between cultures, or effects of different digital media, or evaluation of intervention programs that can alleviate technoference.

**Impact on Society:** The results of the study highlight the need to create awareness among parents about the appropriate use of technology and meaningful family communication. Reducing technoference can support creation of supportive family spaces, intergenerational bonds, and promotion of healthy relational processes in a society that is increasingly becoming disconnected.

**Future Research:** Future researches should examine the long-term effects of parental technoference on adolescents, other adolescents' developmental outcomes, differences in the pattern in other cultural contexts, parents' perspectives on their usage of technology, and to establish culturally embedded interventions.

**Keywords:** adolescents, parental technoference, loneliness, family satisfaction



**Disconnected by Connection: Perceived Parental Technoference, Loneliness, and Family Satisfaction among Adolescents**

The ubiquity of digital technology has radically transformed the ecology of family life, creating new types of relational disruption that transcend mere technological inconvenience, transforming the manner in which individuals and families, as well as societies, interact. Laricchia (2023) reports that India is the second-largest smartphone market in the world, with a population of 659 million smartphone users, which will keep on growing exponentially in the future. While these technological devices aid in maintaining long-distance relationships, they can also disrupt face-to-face encounters (McDaniel & Coyne, 2016). Imagine a 15-year-old having a conversation with his father, which is abruptly interrupted or finished due to the notification received on his father's phone. These brief technology interruptions, which are generally short in duration, can occur during interpersonal conversations or any shared leisure activity and when an individual engages with their device instead of interacting with their conversation partner(s) (McDaniel & Radesky, 2018b). According to earlier research, these technologically induced interruptions of social communication, known as "technoference" (McDaniel & Coyne, 2016, p. 3) or "phubbing" when they involve the phone (McDaniel et al., 2020; Roberts & David, 2016), have grown to pose a threat to family ties and the well-being of children and adolescents (Wang et al., 2020; Bai et al., 2020).

Parents spend a significant amount of time using technological devices, which has detrimental effects on their relationship and real-time interaction with their children. A survey held in 2021 by Vivo and Cybermedia in India highlighted the negative effects of excessive smartphone use on the relationships between parents and children. The results showed that 77 percent of children were not satisfied with the phone behavior of their parents. Moreover, the parents spend more time on their smartphones compared to children, with an average of 7.7 hours per day. Even though the children had friends on social media, 90 percent reported experiencing feelings of loneliness. Prior research has shown that family connections and communications are considered significant determinants of adolescents' levels of loneliness (Li & Zou, 2006). Parental technoference, defined as the interruptions and interferences caused by the parent's use of technology, may result in poor parent-adolescent relationships and further contribute to mental health problems and reduced satisfaction with family life in adolescence (Stockdale et al., 2018; Geng et al., 2021).



Loneliness is characterized by a negative emotional state, which occurs when a person feels that his or her social contacts are insufficient in number and, more so, in quality than desired (Perlman & Peplau, 1981). Previous research has shown that increased loneliness is significantly linked with depression and social anxiety and decreased life satisfaction (Lisitsa et al., 2020). The period of adolescence is a crucial time marked by numerous difficulties and changes (Steiger et al., 2014). During this time, adolescents showcase high sensitivity towards others behavior and opinions, making them more self-conscious. This puts them at an increased risk of experiencing loneliness. Adolescents' impressions of parental rejection and other forms of rejection are likely to contribute to negative self-perceptions, which are recognized to be a contributing factor to loneliness. The effect of parental technoference on adolescents can be understood through the lens of family system theory. According to this theory, individuals cannot be studied in isolation, and the family experience can influence each other (Bowen, 1966). Parental technoference can affect adolescents' feelings, as it clearly sends a message that parents view these technological devices as more important than the adolescents, leading to escalations of negative feelings in adolescents such as loneliness. Previous research has found that parental technoference leads to higher levels of loneliness in adolescents (Liu et al., 2020; Geng et al., 2021). In light of the previous studies, we propose the first hypothesis:

**Hypothesis 1:** Perceived parental technoference will be positively associated with adolescents' loneliness.

### **Family Life Satisfaction**

Parental technoference significantly affects the satisfaction of adolescents with family life by changing the quality and quantity of parent-child interactions. Family life satisfaction is the contentment and favorable evaluation of his or her family association resulting to happiness, fulfillment and peace. It integrates effective communication, resolution of conflict, emotional support and purposeful activities that enhance well-being and mental health (Zabriskie & McCormick, 2003). The frequent distractions that come with technological devices usage may lead to lower levels of parental attentiveness, and thus emotional support and increased conflict between parents and children (Stockdale et al., 2018; Abels et al., 2018; McDaniel, 2019). As a result, teenager will experience a sense of abandonment and estrangement, leading to the absence of quality relations with



their parents and the following decrease in their overall satisfaction towards the family. The displacement hypothesis argues that frequent application of social media will substitute important interactions in the real world, leading to less socialization and lower relationship happiness (Coyne, et al., 2014). The same thing may also affect family settings; when parents become absorbed in technological gadgets that take their time and attention, there are no time and resources to invest in nurturing meaningful parent-child interactions in the offline world.

Meeus et al. (2021) found in their research that the perception of preadolescents of their parents' distractions caused by mobile devices negatively influenced the frequency of parent-child activities and emotional support, which led to a decline in satisfaction with family life. Since there is a dearth of studies to understand the effects of parental technoference on adolescents' family life satisfaction, to address this lacuna, we propose the second, third, and fourth hypotheses:

**Hypothesis 2:** Perceived parental technoference will be negatively associated with adolescents' family life satisfaction.

**Hypothesis 3:** Loneliness among adolescents will be negatively associated with family life satisfaction.

**Hypothesis 4:** The relationship between perceived parental technoference and family satisfaction will be mediated by loneliness.

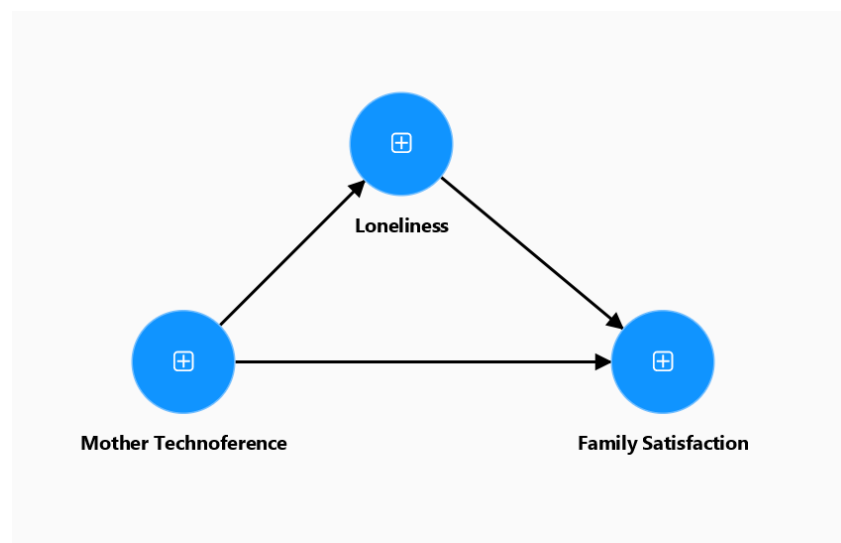


Figure 1.: The hypothesized model for mother technoference

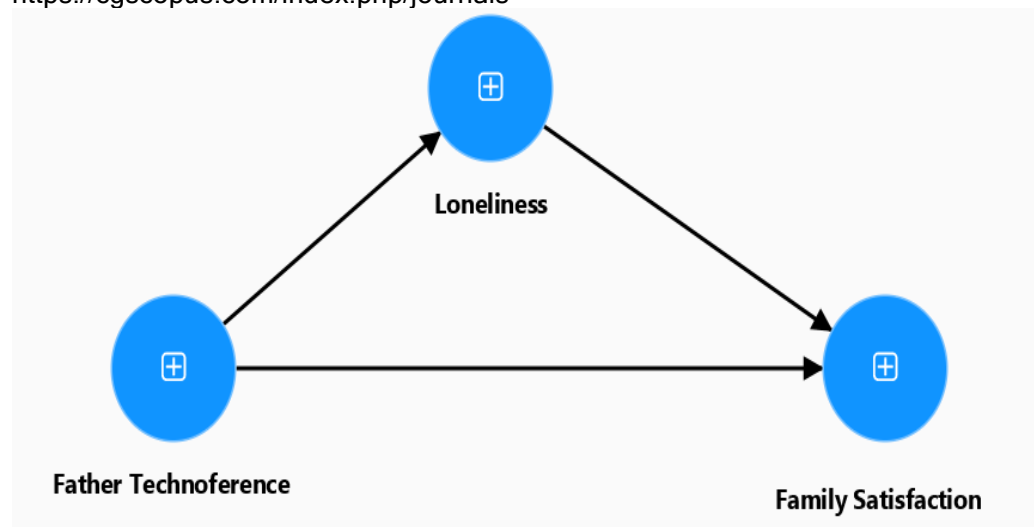


Figure 2.: The hypothesized model for father technoference

Technoference is a relatively recent research endeavour, with most of the literature dedicated to smartphones and tablets (Zhang et al., 2021; Zaho et al., 2023; Stockdale et al., 2018). This paper will attempt to fill this research gap in order to identify the impact of the different electronic products such as smartphones, televisions, tablets, laptops, and computers on the real-life communication. “Phubbing” is a clear term that signifies distraction in conversations by phone (Chotpitayasunondh & Douglas, 2016; Roberts & David, 2016), whereas technoference is open to more technological disruptions on the other hand (Gong et al., 2019). There is still a dearth of studies on parental technoference in the Indian context. The paper will discuss the influence of technoference among mothers and fathers on adolescents with respect to feelings of loneliness and satisfaction with the family in Indian households. Moreover, most of the studies have taken parents as a sample; the present research will gather insights from adolescents' perceptions of parental technoference.

## Method

### Research Design

The present study followed a cross-sectional quantitative research design for data collection and data analysis.

### Participants

The present study incorporated participants from the age range of 14–17 years, studying in grades 9–12 from private schools located in Delhi NCR. Purposive convenience was used for sample selection. The demographic characteristics of the participants ( $n = 126$ ) are given in Table 1.



**Table 1**

*Demographic Characteristics of the participants*

Characteristic	<i>n</i>	Percent
<b>Gender</b>		
Females	76	60.3
Males	50	39.7
<b>Mothers Level of Education</b>		
High School	41	32.5
Graduates	55	43.7
Post-graduates or above	30	23.8
<b>Father's Level of Education</b>		
High School	39	31.0
Graduates	59	46.8
Post-graduates or above	28	22.2
<b>Mother's Occupation</b>		
Homemaker	95	75.4
Service	13	10.3
Other	10	7.9
Self-employed	7	5.6
Business	1	0.8
<b>Father's Occupation</b>		
Business	66	52.4
Service	32	25.4
Other	17	13.5
Self-employed	10	7.9
Homemaker	1	0.8
<b>Annual family Income</b>		
Upto 5 Lakhs	58	46.0
5 Lakhs- 15 Lakhs	49	38.9
Above 15 Lakhs	19	15.1
<b>Mothers' Screen Device Usage</b>		
Less than one hour	17	13.5
1 hour or more, but less than 2 hours	46	36.5
2 hours or more, but less than 4 hours	46	36.5
4 hours or more, but less than 6 hours	12	9.5
6 hours or more.	5	4.0
<b>Fathers' Screen Device Usage</b>		
Less than one hour	18	14.3
1 hour or more, but less than 2 hours	34	27.0
2 hours or more, but less than 4 hours	31	24.6
4 hours or more, but less than 6 hours	21	16.7



6 hours or more.	22	17.5
<b>Time Spent Together with Parents Using Screen Devices</b>		
Less than one hour	46	36.5
1 hour or more, but less than 2 hours	36	28.6
2 hours or more, but less than 4 hours	28	22.2
4 hours or more, but less than 6 hours	12	9.5
6 hours or more.	4	3.2
<b>Time Spent Together Doing Non-Screen Activity</b>		
Less than one hour	17	13.5
1 hour or more, but less than 2 hours	46	36.5
2 hours or more, but less than 4 hours	31	24.6
4 hours or more, but less than 6 hours	20	15.9
6 hours or more.	12	9.5

## Measures

***Perceived Parental Technoference:*** A 12-item scale assessed the frequency with which adolescents experienced parental technoference in various situations. Out of 12 items, nine items were adapted from the Partner Phubbing Scale, developed by Robert and David (2016), and three items were adapted from the Technology in Life Example Scale (McDaniel & Coyne, 2016) as used by Stockdale et al. in their research in 2018. In order to meet the objective of the present study, the word "partner" was replaced with "mother" and "father," and mentions of devices were extended to encompass tablets, televisions, computers, and other similar devices, including cellphones (e.g., "During a typical mealtime that my mother and I spend together, my mother pulls out and checks her cell phone, tablet, or laptop"). Participants rated these items on a six-point Likert-type scale: 0 (never), 1 (rarely), 2 (sometimes), 3 (often), 4 (very often), and 5 (all the time). The scores across the twelve items were added, with higher scores indicating a greater perception of technoference. The adapted scale was found to be internally consistent with a Cronbach's alpha value of .86 for mother technoference and an alpha value of .91 for father technoference.

***UCLA Loneliness Scale (Version 3):*** The UCLA Loneliness Scale (Version 3) by Russell (1996), consisting of 20 items, was used to evaluate their personal experience of loneliness and social isolation. Participants respond to these items using a four-point Likert scale, with responses ranging from 1 (never) to 4 (often). The scale is a reliable tool, with a Cronbach alpha of 0.85 (Suri & Garg,



2020). The UCLA Loneliness Scale Version 3 also exhibits excellent internal consistency (Cronbach's  $\alpha = .96$ ) and favorable test-retest reliability ( $r = .73$ ), and adequate construct and concurrent validity is supported by the significant correlations with the emotional states related to loneliness (Russell, 1996; Russell, Peplau, and Ferguson, 1978; Russell, Peplau, and Cutrona, 1980).

***The Satisfaction with Family Life (SWFL) Scale:*** In order to measure adolescents' satisfaction with family, the SWFL scale (Zabriskie & Ward, 2013) was utilized. The scale measures an individual's global judgment of family satisfaction based on their comparison of family life circumstances with their standards and expectations. The scale consists of five items on a 7-point Likert-type scale. The scale demonstrates strong criterion and construct validity and high reliability with Cronbach alpha value ranging from .91 to .94. The scale has been used in Indian context earlier (Bharathi & Arun, 2021).

## Procedure

After obtaining approval from the school administration, informed consent was sought from the teachers and parents, as well as assent from adolescents. The adolescents were informed about their right to decline participation or leave the study at any point without facing any consequences. The data was collected using a google form. The participants were requested to provide information regarding demographic factors, parental technoference for both mothers and fathers separately, loneliness, and satisfaction with family life. Standardized psychological tests were used to measure the stated variables. The link of the google form was shared with the parents and teachers of adolescents' ranging from ages 14-17 years. After the completion of data collection, the data was analyzed using statistical software's. SPSS V.23 was used to calculate the Pearsons' correlation to examine the associations between perceived parental technoference, loneliness and family life satisfaction. For structure equation modelling, SmartPLS 4 was used to investigate the mediating role of loneliness.



## Results

### *Results for the Descriptive Statistics and Correlational Analysis*

**Table 2**

*Descriptive Statistics and Bivariate correlations coefficients of the variables*

Variables	Mean	SD	Mother Technoference	Father Technoference	Loneliness	Family Satisfaction
Mother Technoference	17.72	10.59	1	.43**	.29**	-.42**
Father Technoference	20.25	13.26		1	.39**	-.36**
Loneliness	51.12	10.54			1	-.37**
Family Satisfaction	23.37	6.93				1

$n=126$ , \*\* $p < 0.01$

Table 2 represents the mean, standard deviations, and Pearson correlation coefficients between mother technoference, father technoference, loneliness and family satisfaction. The results demonstrate a significant relationship between these variables. Mother technoference was positively correlated with father technoference ( $r = .43$ ,  $p < .01$ ) and loneliness ( $r = .29$ ,  $p < .01$ ) and negatively correlated with family satisfaction ( $r = -.42$ ,  $p < .01$ ). Further, father technoference was positively associated with loneliness ( $r = .39$ ,  $p < .01$ ) and negatively associated with family satisfaction ( $r = -.36$ ,  $p < .01$ ). Subsequently there was a negative association between loneliness and family satisfaction ( $r = -.37$ ,  $p < .01$ ).

### *Results for the Mediation Analysis*

The present study used SmartPLS 4 to conduct the structural equation modeling to test the mediating roles of loneliness. Partial least square structure equation model (PLS-SEM) in SmartPLS 4 was used to test the mediation analysis. Standardized root mean square residual (SRMR) was used to assess the model fit. The SRMR value for both the saturated and the estimated value was found to be 0.10, indicating an acceptable model fit (Henseler et al., 2016). To test the significance of the mediating effects of the variables, bias corrected bootstrapping procedure with 5000 samples were randomly selected from the original data to estimate the indirect effects of the structural pathways of the proposed model. The confidence intervals values were significant if the values did not contain zero. The results of mediation analysis of the effect of mother's technoference and fathers technoference on family satisfaction respectively is represented in Figure 3 and 4 and Table 3 and 4.

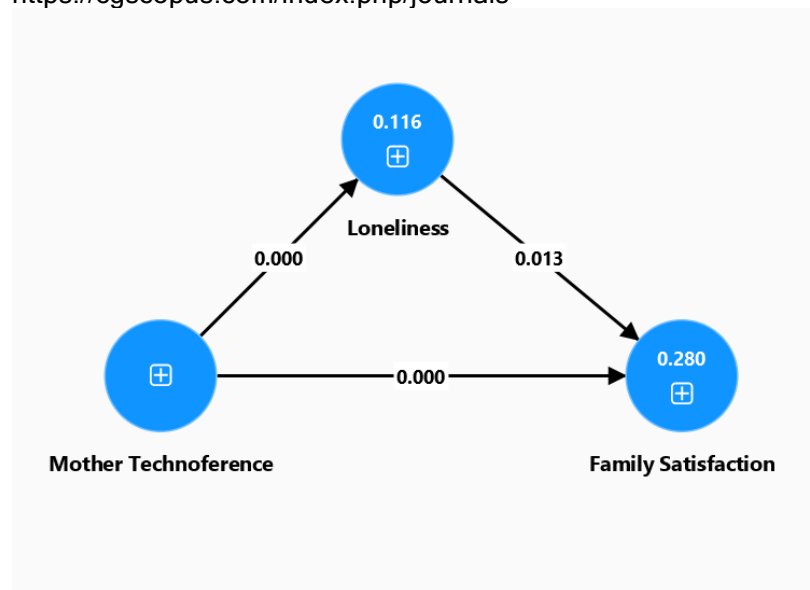


Figure 3. Results for the mediation analysis for Mother Technoference

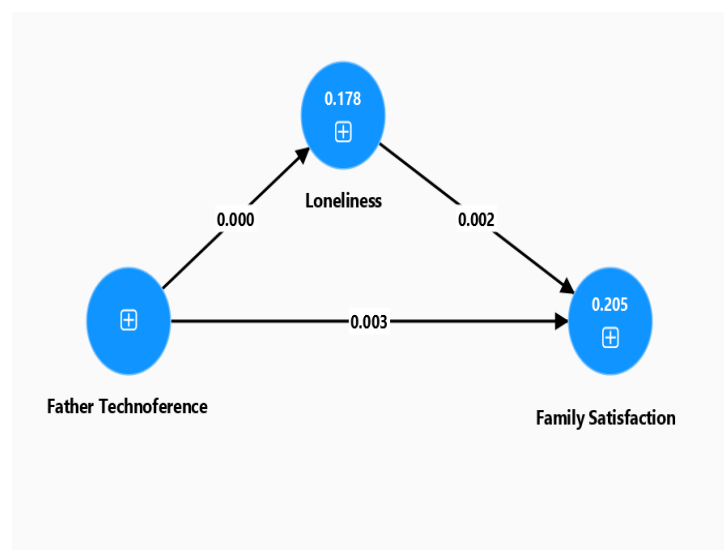


Figure 4. Results for the mediation analysis for Father Technoference



*Mediation Analysis for Mother Technoference on Family Satisfaction*

Path	$\beta$	Mean	SD	T Statistics	p Values	95 % CI
Direct Effects						
Mother Technoference → Family Satisfaction	-0.390	-0.400	0.079	4.949	0.000	[-.533, -.221]
Indirect Effects						
Mother Technoference → Loneliness	0.340	0.385	0.093	3.652	0.000	[-.361, .453]
Loneliness → Family Satisfaction	-0.248	-0.259	0.100	2.487	0.013	[-.415, -.007]
Mother Technoference → Loneliness → Family Satisfaction	-0.084	-0.095	0.037	2.265	0.024	[-.167, -.017]

*Note:*  $\beta$  = standardized path coefficients; *Mean* = bootstrap sample mean; SD = Standard Deviation; CI = Confidence interval based on 5000 bootstrap sample.

Table 3 shows the results of mediation analysis of the effect of mother's technoference on family satisfaction respectively. The results indicated that mother technoference demonstrated a significant direct negative effect on family satisfaction ( $\beta = -.390$ ,  $p < .001$ , CI [-.533, -.221]), suggesting that higher mother technoference is related with reduced family satisfaction. The results of the indirect effect showed that mother technoference positively affected loneliness ( $\beta = .340$ ,  $p < .001$ , CI [-.361, .453]), and loneliness negatively affected family satisfaction ( $\beta = -.248$ ,  $p < .01$ , CI [-.415, -.007]). The specific indirect effects of mother technoference on family satisfaction mediated by loneliness was found to be significant ( $\beta = -.084$ ,  $p < .01$ , CI [-.167, -.017]), indicating that the relationship between mother technoference and family satisfaction is partially mediated by loneliness.



Table 4 indicates the results of the mediation analysis of the effect of father technoference on family satisfaction. The findings demonstrated a significant direct negative effect of father's technoference on family satisfaction ( $\beta = -.256$ ,  $p < .01$ , CI  $[-.421, -.090]$ ), implicating that higher father technoference leads to lower family satisfaction. The results of the indirect effects showed that father technoference positively affected loneliness ( $\beta = .422$ ,  $p < .001$ , CI  $[.245, .519]$ ), while loneliness negatively affected family satisfaction ( $\beta = -.281$ ,  $p < .01$ , CI  $[-.423, -.042]$ ). The specific indirect effect of father technoference on family satisfaction mediated through loneliness was found to be significant ( $\beta = -.119$ ,  $p < .01$ , CI  $[-.167, -.017]$ ), implicating a partial mediation.

**Table 4*****Mediation Analysis for Father Technoference on Family Satisfaction***

Path	$\beta$	Mean	SD	T Statistics	p values	95 % CI
Direct Effects						
Father Technoference → Family Satisfaction	-0.256	-0.258	0.086	2.992	0.003	$[-.421, -.090]$
Indirect Effects						
Father Technoference → Loneliness	0.422	0.451	0.067	6.320	0.000	$ [.245, .519]$
Loneliness → Family Satisfaction	-0.281	-0.302	0.090	3.102	0.002	$[-.423, -.042]$
Father Technoference → Loneliness → Family Satisfaction	-0.119	-0.135	0.043	2.789	0.005	$[-.167, -.017]$

*Note:*  $\beta$  = standardized path coefficients; Mean = bootstrap sample mean; SD = Standard Deviation; CI = Confidence interval based on 5000 bootstrap sample.



The present study provides a rigorous analysis of the mutual relationship between perceived parental technoference, loneliness in adolescence, and satisfaction with life in a family on an urban Indian sample. The paper describes the working of parental digital distraction as a major ecological stress factor which has a harmful influence on the socioemotional development of adolescence and family system cohesion.

The first hypothesis stated that perceived parental technoference will be positively associated with adolescents' loneliness. This is substantiated by the statistical results (Table 2), which indicated a significant positive association between both maternal technoference and loneliness; as well as between paternal technoference and loneliness in adolescents, showing that the effect of digital distraction in parents has a profound impact on the socioemotional well-being of adolescents leading to feelings of being left alone and isolated, thus the first hypothesis was retained. The findings of the study are consistent with the family systems theory that postulates that family conflicts affect the entire family and lead to emotional issues (Bowen, 1966). Parental technoference indicates their inaccessibility leading to the development of the loneliness in adolescents as an adaptive reaction to relational threat. This correlation supports the previous body of evidence on the pernicious socioemotional post-effects of parental technoference. A longitudinal study by Geng et al. (2021) established that perceived parental technoference was a predictive of greater loneliness among Chinese adolescents six months later despite initially low levels of loneliness. Likewise, Liu et al. (2020) made the same conclusion, as parental technoference enhanced the loneliness among adolescents mediating the impact of parental distraction and problematic smartphone use. The universality of this technoference-loneliness correlation is justified by cross-cultural research (Merkas et al., 2021; Dolev-Cohen and Ricon, 2022), which shows that adolescents are universal in their desire to see and be seen by their parents and have emotional support. Ecologically, these results draw technoference as a disturbance to the emotional climate of the family microsystem that results in harmful consequences to the well-being of adolescents.

The second hypothesis, positing that perceived parental technoference would be negatively associated to family life satisfaction is strongly supported by the data. Maternal technoference and paternal technoference exhibited a significant negative direct effect on family satisfaction, however,



the effect of maternal technoference was greater (Table 2). The findings of the correlation analyses also support these relationships since they demonstrated that maternal technoference had a negative correlation with the measure of family life satisfaction with paternal technoference exhibiting the same negative relationship; therefore, the second hypothesis was not rejected. These findings can be put into a theoretical framework of the displacement hypothesis that states that time and attention spent on digital devices necessarily preclude the opportunity to have meaningful interactions among individuals (Coyne, et al., 2014). This relocation is not only on the behavioral level but it also reduces the quality of parent-adolescent relationships with reduced emotional contentment and heightened sensitivity that characterize quality family relationships. A recent study conducted by Qu et al. (2022) demonstrated that such neglect of children by their mothers due to phones increased the frequency of cyberbullying among teenagers because they felt less accepted by their mothers. Wang et al. (2021) also identified that parental phubbing negatively affected the quality of parent-adolescent communication, which further mediated the connection between technoference and depression in adolescents. Altogether, these results support the conceptualization of technoference as a kind of relational displacement that undermines the cornerstones of family satisfaction, especially in collectivistic societies where family cohesion is strongly valued.

The third hypothesis posited that loneliness among adolescents will be negatively related to family life satisfaction. The results supported this hypothesis, as the negative association between loneliness and family satisfaction was significant (Table 2). Attachment theory aids us in comprehending this relationship, as it explains how insecure attachment in relation to loneliness may decrease the experience of family support and satisfaction among adolescents (Bowlby, 1969). These findings are in accordance with the existing literature that has shown that loneliness is a crucial indicator of impaired family relationship quality and overall satisfaction with life in adolescents (Li et al., 2024; Matthews et al., 2022).

The fourth hypothesis, which posited that loneliness will mediate the connection between parental technoference and family satisfaction, was supported empirically by mediation analyses. Indirect effects were found to be significant with maternal technoference and paternal technoference on family satisfaction through adolescent loneliness (Table 4). The bootstrapping analysis demonstrated that the indirect effect of paternal technoference through loneliness was especially strong, which proved partial mediation. Moreover, loneliness had significant adverse direct impacts



on family satisfaction in both the maternal model (Figure 3) and in the paternal model (Figure 4).

Further, correlation analysis also showed a substantial negative relationship between loneliness and family satisfaction. In line with the existing theoretical frameworks, parental technofence undermines the basic psychological needs of adolescents to connect, leading to loneliness and reduced family satisfaction (Niu et al., 2020; Meeus et al., 2021). Liu et al. (2020) discovered that loneliness is one of the key mediators between parental technofence and smartphone addiction in adolescents, while Meeus et al. (2020) found that perceived parental device distraction worsens parent child conflict and reduces emotional support, which negatively affects family cohesion. The longitudinal evidence of Liu et al. (2024) further proves that parental phubbing negatively affects the quality of relations and increases the feeling of need frustration, which leads to maladaptive internet use. The present study further generalizes this mediational model to the family satisfaction outcomes, which diversifies our knowledge of the spillover effect of parental digital distraction in the family ecology.

The family systems theory provides a framework for comprehending these findings, suggesting that families act as holistic systems whereby disturbances in any of the subsystems affect the whole family network (Bowen, 1966). The high level of maternal and paternal technofence observed in the current research is a key illustration of such systemic interdependence, and it is directed at the concept of digital distraction as the dyadic mode in the family ecology not just a personal parent behaviour. This systemic perspective is supported by research in which Xie et al. (2023) demonstrated that parental technofence is reciprocating within the relationship and has the crossover effect on the quality of parent-adolescent relationships. This interference of the structure is of particular importance in the collectivistic family systems, where the proximity of the parents and their sensitivity as interpersonal are culturally lauded, and the well-being of the adolescents is an inseparable member of the family harmony. Such an ecological and system concept enables us to see how complicated are the processes through which technofence perverts the health of the adolescents, as well as the wholeness of the families.

The Indian setting of the study is especially relevant, as family life in urban India is being digitalized at a very rapid pace, and empirical studies regarding technofence in South Asian family structure are rather scarce. The gendered disparities in the outcomes observed, that is, a greater direct impact of maternal technofence on family satisfaction than paternal technofence can be explained



by the culturally entrenched norms of familial emotional labor and relationship maintenance by the mother. This effect can be enhanced by the fact that the mothers of most participants were homemakers; their constant availability in the home setting can further stimulate the effect of maternal technoference on household satisfaction, since the accessibility of mothers is directly related to the anticipation of emotional support and relationship preservation in the house. Nevertheless, the indirect effect of paternal technoference via loneliness is stronger than the indirect effect of maternal technoference via loneliness, which would indicate different pathways by which maternal and paternal digital distraction would have an impact on family outcomes.

According to Attavar (2021), urban Indian parents experienced this situation because they were "connected to devices but disconnected from children," which is a widespread problem of digital distraction in modern Indian families. Studies by Varkey et al. (2022), Nasrulla and Bhau (2025), and Nidhuna (2024) indicated that phubbing of parents and mothers negatively affects interpersonal relationships and bonding between parents and their adolescent children in India, and associations between technoference and hostility or decreased quality of relationship were significant in all three studies. The present investigation adds to the emerging body of literature that offers evidence of how technoference negatively affects adolescent well-being through the psychological processes involved in the context of a specific cultural setting of Indian families living in urban areas.

## **Implications**

The implications of the findings can encompass prevention and family intervention going beyond academic research. The fact that parental technoference is a relevant predictor of adolescent loneliness and low family satisfaction supports the need to address the issue of digital habits in the context of family-based interventions. The strong impact of maternal technoference on family satisfaction and its clear links to loneliness suggest that intervention aimed at breaking parental digital habits may have a significant benefit on adolescent socioemotional well-being and family functioning. Therefore, it is critical to instigate interventions that encourage mindful device use, reduce screen time, and increase family screen-free activities. More recent intervention studies have started to investigate parenting strategies that raise awareness of technoference (McDaniel & Radesky, 2020).



Despite the rigor of this study, there are certain limitations. The cross-sectional design inevitably restricts causal statements, and further studies must adopt the longitudinal and experimental research strategies to determine time precedence and exclude the possibility of bidirectional influences. The use of adolescent self-report measures, although fitting the nature of the study, which examines perceived technoference, opens the door to the problem of the common method variance. Further research is recommended to take into account multi-informant designs and the objective measurement of the use of a device to shed more light on the dynamics of technoference in family systems. Moreover, this research did not consider the possible confounding factors such as socioeconomic status, parental mental health, or personality traits of adolescents, as all these factors could affect parental technology and outcomes of adolescents. Future studies can incorporate these variables to understand distinctive role of technoference in the family system.

## **Conclusion**

In this study, parental technoference remarkably forecasts both loneliness and low levels of family satisfaction in adolescents, and the latter is a key mediating factor. These findings highlight the significance of identifying parental technoference as a crucial environmental stressor to be addressed in the current family researches and focusing on parental digital habits during the family interventions.



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