

Pivotal role of Parent-child relationship in mitigating problematic internet use among Generation Z Adolescents

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Problematic Internet Use (PIU) is a significant concern in everyday developing digital age, being particularly specific among gen Z adolescents. It affects various aspects of an average adolescent's life. This study aims to examine the associations between metacognition, emotion regulation, and parent-child relationship in accordance to understand PIU among generation Z adolescents. Drawing on integrative frameworks from cognitive-behavioral, developmental, and social psychology, the study investigates how these factors interact with each other to influence adolescent's pattern of internet use behaviors. A sample of 90 generation Z adolescents (57 females and 33 males) whose mean age was 18.67, was taken from different districts of West Bengal to conduct this study. Parent-Adolescent Relationship Scale (PARS), Emotion Regulation Questionnaire- Short Form (ERQ-S), Generalized Problematic Internet Use Scale 2 (GPIUS2), and Metacognitions Questionnaire 30 (MCQ-30) were completed by the participants. Descriptive statistics, correlational analysis, and multiple regression analysis were used in this specific study to understand the relationship among the variables. Correlation analysis and regression analysis added to successfully reveal the significant negative relationship between PIU and parent-child relationship implying that good parent-child relationship can alleviate PIU and can regulate the internet use habits of generation Z adolescents. This study examines key insights regarding the important and pivotal role of parent-child relationship in reducing problematic use of internet among generation Z adolescents.

Keywords: Problematic Internet Use, Generation Z adolescents, Parent-child relationship, Metacognition, Emotion regulation.

The Internet is a necessity in modern times. Its merits cannot be denied, but anything that is not kept in check can cause trouble at some point. The COVID-19 pandemic boosted our dependency on the internet more than ever. Adolescents who were once not connected to the internet were left with no choice but to make it a part of their daily life. Excessive internet use, which is often uncontrolled, leads to Problematic Internet Use, which has become a matter of concern for both researchers and clinicians. Moreover, it has been observed that adolescents- especially those born between mid-1990s to early 2010s (generation Z) indulge in excessive internet use to cope with their emotional difficulties, to avoid daily life

challenges or stressful events, and to escape from reality. According to Young (1998), problematic internet use is no less than any "addiction" or "compulsive behavior". It encompasses a variety of activities like gaming, using social networking sites, web streaming, e-commerce, online learning, and pornography. Excessive internet use can make students vulnerable to anxiety, stress, and mental health issues (Yadav, Kumar, and Lata, 2018). It creates disturbance in sleep patterns, academic performance and social life (Parkhad, Kumar and Lata, 2023). Despite its clinical relevance, problematic internet use is not recognized in any official diagnostic system; hence, there is no widely accepted diagnostic criteria for it. In the

Diagnostic and Statistical Manual (DSM-V), the only disorder that is related to PIU till now is Internet Gaming disorder, and in the International Classification of Diseases (ICD-10), it is associated with the clinical diagnosis of Gaming Disorder. Reports like Internet in India 2017, estimated 500 million internet users by 2018, with nearly 60% comprising of students and youth (Kumar et al., 2019). Joseph J. et al, (2022), reported that the overall prevalence of moderate problematic internet use among adolescents in India was 21.5%. Vadher et al., (2019) estimated 16.7%, prevalence of problematic internet use among school-going adolescents and 3.0% of internet addiction. Altogether, it was identified that about one-fifth of Indian school students were at risk of developing PIU.

An important psychological buffer against problematic internet use is Parent-child relationship, which refers to familial cohesion, warm parent child connectedness. It is the cornerstone for the overall development and psychosocial functioning of the children. However, conflict, poor familial cohesion, lack of parent child connectedness can compromise the parent child relationship and make the children vulnerable to maladaptive practices like excessive internet use. Researches have consistently highlighted the role of parent child relationship in the prevention and management of child problem behaviors. Chen et al. (2015) demonstrated that secure parent-child attachment has a negative or primarily cynical effect on adolescent PIU. Van den Eijnden et al. (2010), found that open parental communication about internet mitigated excessive internet use. Thus exploring how parent child relationship interacts with PIU in Gen Z adolescents is substantial.

Another important factor influencing the overuse of internet among Gen Z is the Emotion regulation - the ability to have control over one's own emotional state. It

impacts the way individual manages stress, maintain relations and in decision making (Gaur, Singh, and Lata, 2016). Akbari, M. (2017) identified emotion dysregulation as a significant mediator between distress intolerance, metacognition and PIU. Evren et al. (2019) found that individuals with internet or social networking sites' addiction were more prone to report emotion regulation issues. Wang et al., (2018) advocated that a good parent-adolescent relationship foster emotion regulation which negatively correlates with internet addiction. Hence, emotion regulation is an important construct to understand PIU mechanism.

Another important factor influencing the excessive use of internet among Gen Z is Metacognition - the quick awareness of knowing what we know and what we don't know. The term was coined by John Flavell. Metacognition regulation is one's ability to monitor and control his/her cognitive processes, as well as check the outcome of these processes. Metacognition helps to get the most out of the information that we are receiving. Spada and Marino (2017) assert that maladaptive metacognitions have direct effects (positive and negative, respectively) on PIU and Casale et al. (2016) proposed metacognitions partially mediated, the relationship between emotional dysregulation and PIU.

Empirical findings on these associations are sparse and needs further exploration in Indian context. The findings of this study will add knowledge about the predictive role of parent-child relationship, metacognition, emotion regulation and PIU among the Gen Z adolescents. Following hypotheses have been framed out on the basis of the review of literature:

- 1) Parent-child relationship will be negatively correlated with Problematic internet use.

- 2) Metacognition, and emotion regulation strategies will be positively correlated with problematic internet use.
- 3) Parent-child relationship, emotion regulation, and metacognition would significantly predict PIU.

Method

Sample

The participants comprised of 90 adolescents (63.3% females, 36.7% males) ages ranged between 17-19 years with mean age 18.67 (\pm .54) having access to the internet. Demographic details like age, gender distribution, family type, area of residence, and internet usage are summarized in Table 1. Results showed that the majority of participants were female (63.33%). Major part of the participants belonged to nuclear families (71.12%), most of these came from urban areas (78.89%). Out of 90 participants, majority (43.34%) used internet for 3-5 hours daily.

Table 1 Demographic data of the participants (n= 90)

Demographic variables		M (SD) n (%)
Age		18.67 (.54)
Gender	Female	57 (63.33)
	Male	33 (36.67)
Family type	Nuclear	64 (71.12)
	Joint	26 (28.88)
Area of residence	Rural	19 (21.11)
	Urban	71 (78.89)
Internet usage	<2 hours	11 (12.22)
	3-5 hours	39 (43.34)
	6-7 hours	20 (22.22)
	>7 hours	20 (22.22)

Measures

Parent-Adolescent Relationship Scale (PARS; Sajitha U., 2019) comprised of 30 items scored on a 5-point likert scale. Higher score indicates good parent-adolescent relationship. The tool maintains a high internal consistency of 0.86.

Emotion Regulation Questionnaire- Short Form (ERQ-S; Preece et al, 2023) assess habitual use of two common emotion regulation strategies, cognitive reappraisal and expressive suppression. ERQ-S consists of 6 items rated on a 7-point likert scale. Individual scores are calculated for each of the two strategies. The total score for both strategies is in the range 3-21, where high scores are indicator of higher usage of that strategy. The internal consistency reliability of the two domains of ERQ-S calculated, is 0.87 for the cognitive reappraisal domain and 0.76 for the expressive suppression domain.

Metacognitions Questionnaire 30 (MCQ-30; Wells and Cartwright-Hatton, 2004) comprised of 30 items rated on a 4 point likert scale with internal consistency reliability of 0.93. Higher scores indicate stronger maladaptive metacognitive beliefs.

Generalized Problematic Internet Use Scale 2 (GPIUS2; Caplan, 2010) comprised of 15 items rated on an 8-point Likert scale. A high score indicates greater severity of problematic internet use. The Cronbach's alpha reliability coefficient value ranges from 0.72 to 0.91.

Procedure

The primary data for the study was collected from adolescents aged 17 to 19 years. Prior to administration of the tools, the participants were explained about the aims and need of the study. Confidentiality of the responses and voluntary withdrawal at any point of time was clearly briefed. After

assuring about anonymity and privacy, the adolescents read and signed the informed consent form indicating their voluntary participation in the research. The question booklet comprised of informed consent, socio-demographic information and four questionnaires corresponding to each variable of the study. Participants were provided clear and concise instructions for every questionnaire individually.

Results

A detailed description of the data using descriptive statistics of minimum, maximum, mean, standard deviation, skewness, and kurtosis for studied variables (N=90) is presented in Table 2. The skewness and kurtosis statistics showed that all variables followed a normal distribution and had a typical peak, as their values fell within the ± 1 range, indicating an optimal level of symmetry in the distribution.

Table 2 Descriptive statistics for the study variables (n=90)

Variables	Min	Max	Mean	SD	Skewness		Kurtosis	
					Statistic	SE	Statistic	SE
Parent-Child Relationship	82.00	142.00	118.97	14.39	-.629	.254	-.090	.503
Problematic Internet Use	22.00	104.00	63.28	16.95	-.107	.254	-.395	.503
Metacognition	44.00	102.00	71.88	10.90	.208	.254	.048	.503
Cognitive Reappraisal	3.00	21.00	14.89	4.19	-.367	.254	-.375	.503
Expressive Suppression	5.00	21.00	14.43	4.23	-.159	.254	-.779	.503

The table suggests that adolescents have a moderately high quality of parent-child relationship (mean=118.97 and SD=14.39), indicating that, on average, adolescents perceived their familial relationships positively. The mean PIU score (mean = 63.28 and SD = 16.95) is situated near the mid-point of the possible range (22 to 104), indicating that while some adolescents reported high PIU, the average severity in the sample was moderate. Participants reported a moderately high level of metacognitive skills (mean = 71.88 and SD = 10.90), with a relatively low standard

deviation, suggesting the sample was more homogenous in their self-reported awareness of their own cognitive processes. Both Cognitive Reappraisal (mean = 14.89 and SD = 4.19) and Expressive Suppression (mean = 14.43 and SD = 4.23) showed similar mean scores and standard deviations. This indicates that, in general, adolescents are reported to be engaging in both adaptive (reappraisal) and maladaptive (suppression) emotion regulation strategies to a similar extent. These statistical results highlight variability in participants' psychological and behavioural tendencies.

Table 3. Pearson correlation among the study variables (n=90)

Variables	1	2	3	4	5
1. Parent-Child Relationship	1	-.429**	.002	-.013	-.134
2. Problematic Internet Use		1	.100	.116	.173
3. Metacognition			1	-.069	.240*
4. Cognitive Reappraisal				1	.409**
5. Expressive Suppression					1

** $p < 0.01$, * $p < 0.05$

Pearson's correlation analysis was conducted to examine the relationships between Problematic Internet Use and the predictor variables, which are- Parent-Child Relationship, Metacognition, Cognitive Reappraisal, and Expressive Suppression. Table 3 reveals a significant negative correlation between Parent-Child Relationship and Problematic Internet Use ($r=-.429$, $p<0.01$) indicating that supportive and high-quality parent-child relationships are significantly associated with reduced levels of Problematic Internet Use among adolescents. There is non-significant correlation between Parent-child relationship and other variables, Metacognition, Cognitive reappraisal and Expressive suppression. The findings also show a positive significant relationship between Metacognition and Expressive Suppression ($r=0.240$, $p<0.05$).

Table 4. Regression results of predictive role of parent-child relationship on problematic internet use

Problematic Internet Use	Beta	R square	t	p-value
Parent-child Relationship	-.429	18.4%	-4.45	.000

Findings from the regression analysis indicates that Parent-child Relationship significantly predicts Problematic Internet Use (Beta=-0.429, $p<0.001$). The model explains 18.4% of the variance ($R^2=0.184$). This result highlights the critical role of familial relationships in influencing problematic internet behaviours. The initial finding from the correlation analysis was confirmed through this result, which reveals parent-child relationship as a significant negative predictor of problematic internet use. Those adolescents are less likely to engage in maladaptive internet behaviors who share strong and healthy relationship with their parents.

Discussion

This detailed study is aimed to pragmatically assess the existing relationships between problematic use of internet, parent-child relationship, metacognition, and emotion regulation strategies. The key findings derived from the collected data provide insight into how problematic use of the internet can be controlled to reduce maladaptive usage of internet by adolescents.

The analysis of the findings reveals a significantly negative correlation between PIU and parent-child relationship. This finding suggests that students who have considerably good relationship with their parents are unlikely to indulge in problematic use of the internet. Those who share good relationship with their parents do not depend on the internet to express themselves or find solutions over the internet, they do not search for human bonds online from the virtual world. Furthermore, a positive parent-child bond plays a pivotal role in facilitating adolescents' recognition and acceptance of active parental mediation strategies, which consequently reduces their engagement in online risk behaviors (Wartberg et al., 2015). The findings support prior research, establishing parent-child relationship as a pivotal factor that significantly predicts PIU and explains nearly one-fifth (18.4%) of its variance. Thus, it can be said that the quality of parent-child relationship plays a crucial role in student's internet usage behaviours.

These findings align with previous studies demonstrating that poor family function, lack of parental involvement, and low family support are significant predictors of internet addiction in students, Yen et. al. (2007). With respect to Indian settings, studies such as that of Kaur, M., and Sharma, S (2017), simply suggest that family cohesion and involvement of parents were protective factors while family conflict was directly

associated with higher levels of internet addiction specially among adolescents. This finding reflected in this particular study strongly demonstrates the critical role of relationships in a close sphere of family in shaping adolescents' online behaviours. These results are seen consistent with Minuchin's family system theory proposed in 1974, which strongly emphasizes the role of family dynamics and relationships in behavioural outcomes.

Meanwhile, on the other hand, PIU's lack of significant relationship with metacognition and emotion regulation strategies may lead to indicate that these factors are in active operation indirectly or in conjunction with other variables to affect the internet use of students specifically adolescents. The factor behind this finding could be the age group on which the study was conducted or other estimated external factors. Some other studies align with the findings, such as the study by Kuss et al. (2014) which highlights the variability in findings across different studies, denoting that not all research were successful in identifying a clear link between emotion regulation and PIU, specifically in studies where other psychological factors were seen as more dominating. However, contradictory findings also exist, such as that Spada et al. (2017) which demonstrates that dysfunctional metacognitions, like beliefs about the necessity of Internet use for emotion regulation, significantly contributed to increased PIU.

The finding also suggests and demonstrates that metacognition was significantly in correlation with the expressive suppression strategy of emotion regulation, and the relationship was affirmative. This leads to the assumption that if a student has high worry beliefs, they would prefer suppressing their emotions and not expressing themselves in front of others, high use of this sort of strategy results in poor

regulation of emotions as well as poor well-being.

All together, these detailed findings emphasise the role of good parent-child relationship in lessening the problematic use of Internet. This study clearly showcases that poor parent-child relationships serve as a major risk factor in increasing adolescents' vulnerability to negative internet use and its maladaptivity. These results indicates that the integration of family-focused strategies to enhance parent-child bond along with specific programs to reduce dependence on maladaptive emotional styles which can turn out to be an effective intervention and can offer a demarcative pathway for definite mitigation in PIU in Generation Z adolescents.

Conclusion

This detailed study illustrates the pivotal role of the parent-child relationship in managing problematic Internet use (PIU) among adolescents, with poor parental relationships linked to higher levels of PIU. Although there was a positive correlation between PIU and metacognition and emotion regulation strategies, they did not emerge as significant predictors. The findings revealed that adolescents with poor parent-child relationships and geater dependency on suppressing expressions are more likely prone to PIU. These insights highlights the interplay of cognitive, emotional, and relational factors in shaping Internet use behaviours amongst adolescents. It also emphasizes the need for family dynamics and emotional regulation targeted interventions to address PIU in an effective manner. These findings are important for further related explaining of the relationship between metacognition, emotion regulation, and parent-child relationship with PIU.

While this study examines important insights related to the factors affecting PIU, it does have limitations. The sample size (90

adolescents) is relatively small and may not be representative of the broader population of adolescents in India, which limits the generalisability of the findings, the study included adolescents of a limited age range, i.e., 17-19 years only, moreover, the self-reported measures used to collect data might have introduced bias as participants might have underreported PIU or overemphasise their metacognitive and emotion regulation skills. The cultural context of the study which was conducted solely in West Bengal, may influence parenting styles and patterns of internet use which may not apply to other regions of the country. Other potential factors such as personality traits, peer influence, and socioeconomic factors, which can influence PIU were not explored in the study.

The study contributes to the effective understanding of PIU through an integrative lens of both cognitive-behavioural as well as developmental psychology frameworks. It significantly highlights parent-child relationships as a pivotal and primary causal factor of PIU with offering insights into relational dynamics in digital behaviours and patterns amongst adolescents. Moreover, the findings enrich theoretical models of PIU by suggesting potential indirect roles for metacognition and emotion regulation. Interventions can be aimed at reducing PIU by including family therapy or parenting programs that enhance the quality of parent-child interactions. Emotional regulation strategies, particularly reducing reliance on expressive suppression, should be a focus in therapeutic contexts addressing PIU. Clinical practitioners can use these findings to design interventions that combine relational, cognitive, and emotional components.

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