MASTER THESIS

Problematic Internet use Among Adolescent Boys in a non-Western Context: Examining Father-Son Parenting with Avoidant Coping and Self-Regulation

Matas Matickas

Faculty of Behavioral Management and Social Sciences

Department of Psychology

UNIVERSITY OF TWENTE

1st Supervisor: Dr. Selin Ayas

2nd Supervisor: Dr. Mirjam Radstaak

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Abstract

With the advent of the internet and its widespread use, several new psychological constructs have come into the light. In this regard, Problematic Internet Use (PIU) is one such construct that has attracted the interest of many researchers. Mostly because of its harmful effects on the well-being of adolescents. This study investigates the impact of paternal parenting styles on PIU among adolescent boys in Ankara, Turkey. Specifically, it examines how controlling/strict and accepting/affectionate paternal styles relates to PIU and explores the influence of avoidant coping and self-regulation as moderators. Data from 718 male adolescents, obtained through a correlational cross-sectional survey design and were analyzed using SPSS Statistics 27 as part of a larger study. Results indicate a positive correlation between controlling/strict parenting and higher levels of PIU, and a negative correlation for accepting/affectionate parenting. No significant moderation effects from avoidant coping and self-regulation were found, though their direct effects on PIU were noted. This research contributes to understanding the specific role of fathers in adolescent PIU, within a non-Western context, offering insights for targeted interventions to mitigate PIU, with a focus exclusively on the father-son relationships.

Keywords: Problematic Internet Use, PIU, Avoidant Coping, Self-Regulation, Cross-Sectional Study Design.

Problematic Internet use Among Adolescent Boys in a non-Western Context: Avoidant Coping and Self-Regulation

Since its widespread adoption in the 1990s, the internet has become a foundational aspect of educational, social, and recreational experiences, drastically shifting societal paradigms (Goldfarb, 2006; Kraut et al. 2002; Posso, 2016). The emergence of the World Wide Web and the subsequent rise of the social web have revolutionized communication, information sharing, and interaction (Levy & Strombeck, 2002). However, alongside its many benefits, the excessive, uncontrolled, and dysfunctional use of the internet has surfaced as a significant concern, potentially escalating into major public health issues such as anxiety, depression, and social isolation (Akar, 2015; Kuss & Lopez-Fernandez, 2016; Tam & Walter, 2013; Veisani et al. 2020). The term Problematic Internet Use (PIU) encapsulates these challenges, signifying an inability to manage internet use to the detriment of daily life and encompassing negative outcomes across psychological, social, academic, and professional domains (Laconi et al. 2019; Spada, 2014).

Adolescents, often described as "digital natives," are particularly susceptible to PIU due to their stage of development, characterized by significant biological, social, and cognitive changes (Brey, 2006; Foulkes & Blakemore, 2018; Lusk, 2010; Prensky, 2001; Sisk & Romeo, 2019; Watson, 2005). As such, adolescence is defined by increased responsiveness to rewards, while impulse control remains immature (Casey, et al. 2008). Since PIU is described as an impulse control disorder and the internet can act on an operant conditioning variable ratio reward schedule, adolescents are widely open to the vulnerability of PIU (Dunbar et al. 2018).

Further, different parenting practices are attributed to distinct impacts on children's development and behaviors, such as PIU (Davidov & Grusec, 2006; Dunbar et al. 2018; Moilanen, et al. 2014). For instance, increasing or decreasing the risk factor of PIU according to cold and warm parenting respectively, and to the degree of control employed by the parents (Amani, et al., 2020; Hayixibayi, et al. 2022).

Parenting practices, especially those of fathers, play a crucial role in shaping adolescent boys' internet use behaviors (Dunbar et al. 2018; Young, 2011; Zimmerman, 2011). Social learning theory, as proposed by Bandura and Walters (1963), suggests that children acquire behaviors through the observation and imitation of key role models around them. For instance, boys are more inclined to model their fathers (Patock-Peckham, et al., 2001). Also, research on early childhood largely focuses on the role of mothers, although parental

parenting is essential for fostering self-regulation in their children, underscoring the importance of evaluating same-sex parenting, especially of father-son relationships (Braza et al. 2015; Lansford et al. 2014; Liu et al. 2022; Moilanen et al. 2014; Patock-Peckham et al. 2001; Robb, 2021).

In addition, parental styles can influence coping strategies and self-regulation in adolescents, which have been found to be significant in the adolescents' PIU (Billieux & Van der Linden, 2012; Faghani et al. 2020; Kiss, et al. 2020; McNicol & Thorsteinsson, 2017). On the other hand, both self-regulation skills and avoidant coping in adolescents have the potential to exacerbate or reduce the impact of parenting when it comes to adolescents' externalizing behavior, such as PIU (Billieux & Van der Linden, 2012; Faghani et al. 2020; LaMontagne et al. 2022; Xu & Yan, 2023).

Avoidant Coping

Avoidant coping refers to a method of coping in which individuals manage their stressors and emotional discomfort by avoiding them rather than by facing or managing the discomfort directly (McNicol & Thorsteinsson, 2017). Mostly, it is done by means of denial, distraction, or withdrawal from the issue at hand, having a relieving effect on stress. However, it is generally maladaptive in the long run, failing to deal with the causes of the stress, and potentially increasing the problem (MacIntyre et al. 2020).

There exists an association between avoidant coping and PIU in that adolescents tend to use the internet as a method of escape mechanism (Lee & Stapinski, 2012; Senormanci et al. 2014). This development might result in a higher risk for developing PIU because of continued reinforcement of avoidant patterns that result in an unhealthy coping mechanism to regulate the negative experiences in life (Atasalar & Michou, 2019). More so, avoidant coping has a negative interaction with self-regulation due to the hindrance in the development and utilization of adaptive self-regulation strategies among adolescents (Gecaite et al. 2021; Liau et al. 2015) and is likely to lead to the escalation of PIU since avoidant coping compromises an adolescent's ability to regulate impulses and emotions.

Self-Regulation

Self-regulation refers to the procedure through which an individual can control his or her thoughts, emotions, and actions in pursuit of a future oriented goal. It involves impulse control, emotional regulation, and the ability to delay gratification for that goal (Zimmerman, 2000). The effectiveness of self-regulation is crucial in coping with the demands of ever-changing circumstances, resisting temptations, and navigating complex social interaction.

Self-regulation is associated with the lower levels of PIU, since an adolescent with high self-regulatory competencies will have skills to better manage their internet use (Robertson et al. 2018; Zhang, 2015). These competencies can be used to set controls on internet usage such that one will not spend so much time online and channel themselves into more useful activities. Low self-regulation relates positively with high impulsivity, which is evidenced at times with those people who exhibit symptoms of PIU (Billieux, & Van der Linden, 2012; Faghani et al. 2020). High self-regulatory competencies associated with lower levels of avoidant coping styles and foster the development of healthy ways to address stress and emotional distress (Sinelnikova & Udovichenko, 2023).

Parental Style

Parenting style encompasses the emotional climate in which parents raise their children, including strategies and practices employed to guide and socialize them (Paler et al. 2019). Fathers play a unique role in this process and contribute to the development of self-regulation in children, influencing their behaviors, emotions, and coping mechanisms, primarily through disciplinary roles, when compared to typical maternal influences through close emotional relationships and emotional support (Dunbar et al. 2018; Lansford et al. 2014; Liu et al. 2022; Young, 2011; Zimmerman, 2011). In addition, research has indicated that variations in parenting practices and their consequences can be attributed to regional and cultural distinctions (Lukavska et al. 2022).

Furthermore, the literature identifies three main parenting styles: authoritative, authoritarian and permissive, each with distinct implications for children's development (Baumrind, 1991; Maccoby & Martin, 1983). Authoritative parenting, characterized by high levels of warmth and control, is associated with lower levels of PIU and more adaptive coping strategies among adolescents' (Moilanen et al. 2014; Yu, & Gamble, 2008, 2009, 2010). This style also fosters strong self-regulation skills, encouraging independence while providing guidance and support (Amani et al. 2020). On the other hand, self-regulation, particularly, is a well-documented protective factor that can mitigate various negative behaviors among adolescents, including substance abuse (LaMontagne et al. 2022). It suggests that adolescents with higher self-regulation might be less susceptible to the negative impacts of certain parenting styles on PIU by enhancing adolescent's ability to control impulses and manage stress (Billieux, & Van der Linden, 2012; Faghani et al., 2020).

Conversely, authoritarian, and permissive parenting styles may contribute to higher levels of PIU among adolescents' boys (Hayixibayi et al. 2022). Authoritarian parenting, with high control and low warmth, can lead to increased use of avoidant coping strategies (Davis,

2001; Pinquart, 2017). Similarly, avoidant coping could potentially exacerbate the effects of negative or less supportive parenting styles (Xu, & Yan, 2023). Permissive parenting, characterized by high warmth but low control, may fail to provide the structure necessary for developing effective self-regulation skills, potentially exacerbating the risk of PIU (Lo et al. 2020).

Both, fathers and mothers, frequently employ different strategies in childrearing, adopting varying parenting styles, which can have a distinct impact on the emergence of behavioral issues in boys and girls (Braza, et al., 2015). For example, evidence suggests, that paternal parenting independently shape the sexual behavior of their adolescent children relative to maternal parenting (Guilamo-Ramos, 2012). Moreover, negative maternal and paternal parenting styles can predict children's behavioral problems, with certain combinations of parenting styles, being more harmful for boys than girls (Braza et al. 2015). Lansford et al. (2014) found unique effects of fathers, when it comes to psychological control and knowledge on adolescents' behaviors compared to mothers. Fathers' psychological control is linked more with externalizing behaviors such as aggression, whereas for mothers, it correlates more with internalizing behaviors like anxiety. Moreover, fathers' knowledge about their adolescents' activities uniquely reduces externalizing behaviors, highlighting the protective role of an involved father. This suggests father-specific influences on adolescents' behavior (Pitsoane & Gasa, 2018).

Moreover, the parenting style of fathers significantly influences adolescents' risk of developing PIU, effecting their coping mechanisms, and their self-regulation abilities (Dunbar et al. 2018; Liu & Young, 2011; Zimmerman, 2011). Similarly, the ability of adolescents to self-regulate, as well as their use of avoidant coping strategies, can either mitigate or amplify the effects of parental behavior on their external behaviors, such as PIU (Billieux, & Van der Linden, 2012; Faghani et al. 2020; LaMontagne et al. 2022; Xu, & Yan, 2023). Hence, considering that the role of fathers has been overlooked in family-based intervention development, the examination of paternal parenting practices is especially important (Downing et al. 2011; Guilamo-Ramos, 2012). Similarly, often overlooked, the exploration of potential moderating role of self-regulation and avoidant coping could offer a more dynamic understanding of how adolescents adapt to or resist parental influences.

Current Study

While previous research has extensively explored the individual effects of parenting styles and psychological factors on PIU, there remains a notable gap in understanding how these elements interact, particularly in the context of paternal influences in non-western

contexts (Liu et al. 2022; Lukavska, et al., 2022). Fathers, significantly contribute to the development of their children's ability to self-regulate during the formative years, often through disciplinary roles (Dunbar et al., 2018; Lansfordet et al. 2014; Young, 2011; Zimmerman, 2011), which are distinct from maternal parenting in quality and quantity due to mothers having typically closer emotional relationships with their children (Lansford et al. 2014; Moilanen et al. 2014). This gender differences in parenting, highlights the necessity of assessing maternal and paternal parenting separately (Liu et al. 2022). Due to research of early childhood predominantly focusing on the role of mothers (Moilanen et al. 2014), the current study is determined to focus exclusively on paternal parenting when it comes to father-son relationships to counter the lack of literature on the role of fathers in childrearing. Hence, the father-son relationship is examined, rather than the father-daughter in the current study. This focus is particularly important, due to given theoretical evidence suggesting that boys are more inclined to emulate their fathers' behaviors and attitudes than the mothers' (Bandura & Walters, 1963; Patock-Peckham, et al. 2001). Moreover, the lack of studies of boys' experiences with a focus on relationships with fathers, research that brings the two topics together, is a relatively underexplored (Robb, 2021).

Furthermore, limited research has focused on assessing how personal and familial dynamics interact to influence the onset of PIU in early adolescence (Marci et al. 2021). As such, there is a strong need to understand the role of paternal parenting in relation to adolescent boys differences in self-regulation skills and avoidant coping behavior, in order to promote and strengthen the preventative efforts of PIU. What is more, since studies have shown that differences in parenting styles and their impacts are often linked to cultural and regional backgrounds (Lukavska, et al. 2022), the current study uniquely contributes to the exploration of the collectivist cultural practices, mainly in Turkey, Ankara. As such, this study is novel in its precise scope and the aim, to bridge the gap in the literature of paternal parenting. The present study aims to examine exclusively fathers' parenting styles and adolescents' PIU, together with the moderating effects of avoidant coping and self-regulation on the relationship between fathers' parenting styles and PIU, among adolescents' boys in Ankara, Turkey.

This research will delve deeper into the nuances of how paternal parenting styles can influence adolescents' boys' PIU and how avoidant coping and self-regulation of adolescents' boys influences this relationship. Specifically, it seeks to answer research question:
How does father parenting style, avoidant coping, and self-regulation relate to PIU in father-son relationships among adolescents boys living in Ankara, Turkey?

Based on the research question, six hypotheses were established that:

H.1: A controlling/strict parenting style will be positively associated with PIU of adolescents' living in Ankara, Turkey.

H.2: An accepting/affectionate parenting style will be negatively associated with PIU of adolescents' living in Ankara, Turkey.

H.3: Avoidant coping strategies will significantly moderate the relationship between controlling/strict parenting style and PIU by strengthening the relationship.

H.4: Avoidant coping strategies will significantly moderate the relationship between accepting/affectionate parenting style and PIU by weakening the relationship.

H.5: Self-regulation skills will significantly moderate the relationship between controlling/strict parenting style and PIU by weakening the relationship.

H.6: Self-regulation skills will significantly moderate the relationship between accepting/affectionate parenting style and PIU by strengthening the relationship.

Figure 1

Scheme of a hypothesized model. The relationship between Accepting/Affectionate Parenting Practices (IV) and PIU (DV), with Avoidant Coping as Moderating Variable.

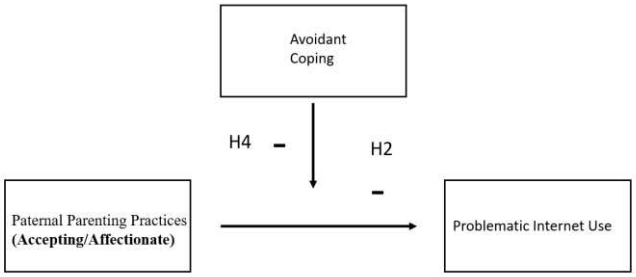


Figure 2

Scheme of a hypothesized model. The relationship between Controlling/ Strict Parenting Practices (IV) and PIU (DV), with Avoidant Coping as Moderating Variable.

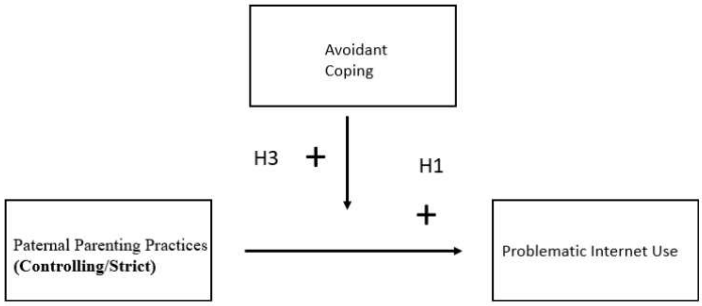


Figure 3

Scheme of a hypothesized model. The relationship between Aceepting/Affectionate Parenting Practices (IV) and PIU (DV), with Self-regulation as Moderating Variable.

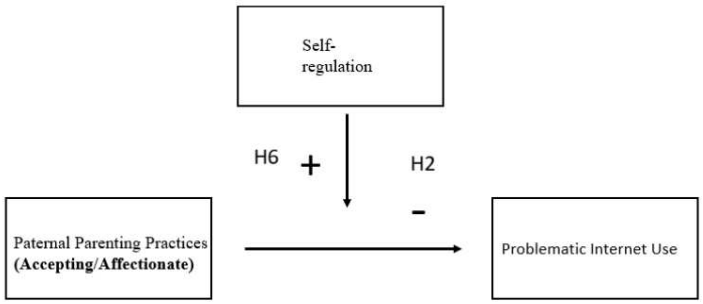
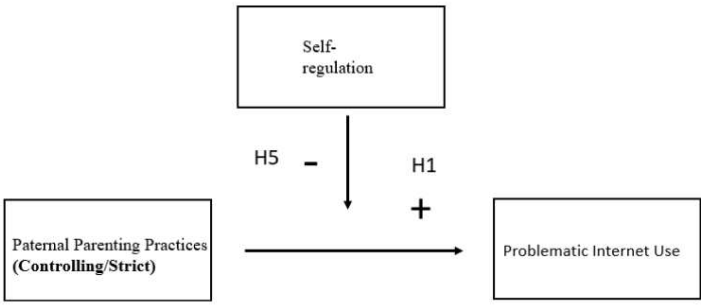


Figure 4

Scheme of a hypothesized model. The relationship between Controlling/ Strict Parenting Practices (IV) and PIU (DV), with Self-regulation as Moderating Variable.



Methods

Design

The present study is part of a larger study and focuses only on variables that are relevant in the current study. This study uses a correlational cross-sectional survey design. The cross-sectional studies are conducted at one time point, which can include individual

characteristics and risk factors of variables of interest. This can provide a 'snapshot" of the outcomes and variable characteristics associated with it (Levin, 2006). The participants in this cross-sectional study were selected based on convenience sampling, among high school students in Ankara. Public and private schools were chosen at random. Nevertheless, due to COVID-19 restrictions at the time, some of the schools did not agree to participate in the research, especially private schools.

Participants

As a result, 21 schools were drawn. The sample consisted of 718 students (11 unidentified). Only male adolescents were used in the present study. The age range was from 14 to 17 (M = 15.1 SD = 0.9). To be eligible to partake in the study, participants had to be high-school students in Ankara.

In the demographic form, participants provided both personal and family-related details. Initially, data such as age, grade level, and the name of their school were collected. The frequencies and percentages can be seen (Table 1).

Table 1

Frequencies and Percentages of the Demographic Data of Boys

	Male Boys	
	n	(%)
Sample	718	(45.4)
Age		
14 years olds	198	(27.6)
15 years olds	263	(36.6)
16 years olds	218	(30.4)
17 years olds	39	(5.4)
Grade Level		
9th Grader	191	(26.6)
10th Grader	284	(39.6)
11th Grader	293	(33.3)
12th Grader	4	(0.6)

Materials

Mainly, four standardized scale questionnaires were used to gather data from students in Ankara.

Questionnaires

Problematic Internet Use Assessment

Originally devised by Ceyhan et al., (2007), for assessing problematic internet usage among university students, this scale was subsequently modified for adolescents by Ceyhan and Ceyhan in 2014. The adapted version for adolescents encompasses 27 items distributed across three distinct subscales: negative consequences of internet use, excessive internet use, and social benefit/social comfort. The first subscale, addressing the negative consequences of internet use, comprises 14 items The subscale focused on excessive internet use includes 6 items. The social benefit/social comfort subscale is composed of 7 items. Responses to the scale items are captured on a 5-point Likert scale, ranging from 1 (not likely) to 5 (very likely), allowing for a total score range between 27 and 135. The Cronbach alpha coefficient for the entire scale was obtained α=.93 and α=.93, α=.76, and α=.78 for the subscales in the original article (Ceyhan & Ceyhan 2014) The reliability of the whole set of questions, or how consistently it measures for the current study, Cronbach's alpha of α=.87, was obtained.

Self-Regulation Scale

Originally created by Moilanen (2005) and then translated into Turkish by Harma, (2008), this scale is made up of 32 items divided into two parts: one part measures how well you manage to keep to your plans and goals (with 18 items) called self-regulation success, and the other part looks at how often you find it hard to stay on track (with 14 items), named self-regulation failure. The scale has reliability scores of .80 and .84 for these two parts, respectively. It uses a 4-point Likert scale for answers, starting at 1 (not like me at all) and going up to 4 (very much like me). In this study, only the part about success in self-regulation was used, which had an internal consistency score of .85 (Harma, 2008). The highest score you can get on this part is 72, and the lowest is 18. The current study obtained Cronbach's alpha of α=.79 for self-regulation.

Parenting Style Questionnaire

The Parenting Style Questionnaire, Steinberg et al. (1991), based on Maccoby & Martin's (1983). This questionnaire includes 22 questions divided into two categories with 11 questions each: one for acceptance/affectionate parenting and the other for controlling/strict parenting.

Responses are given on a 5-point scale from 1 (never true) to 5 (always true), and the total score for each category can range from 11 to 55. The reliability of these questions, meaning how well they consistently measure what they're supposed to, varies from .94 to .70 for fathers (Sümer & Güngör, 1999). The current study obtained Cronbach's alpha of α=.63

for accepting fathers and Cronbach's alpha α=.80 for controlling fathers.

Coping with Stress – Avoidant Coping Questionnaire

The Stress Coping Inventory (Amirkhan, 1990), consists of three parts: problem-solving, seeking social support, and avoidance, with each part having 11 questions. It uses a 3-point Likert scale for responses, from 1 (never) to 3 (always). In this study, the focus was on the avoidance part, which is about how people might try to dodge stress rather than face it head-on. The highest and lowest scores you can get from this section are 33 and 11, respectively. The reliability of these questions Cronbach's alpha for avoidance was α= .84 (Amirkhan, 1990). Cronbach's alpha of α=.63 for avoidance was obtained in the current study.

Data Analysis

The data was analyzed by means of a Statistical Package for Social Sciences (SPSS), IBM SPSS Statistics 27. The assumption of linearity and homoscedasticity was checked through scatterplots (Appendix B). Further, multicollinearity assumption was tested by means of a bivariate correlations test between variables of the current study. VIF values were examined to detect multicollinearity. Normality of residuals were checked through histogram, normal probability plots (P-P plot) and scatter plots (Appendix A and B), to assess homoscedasticity against the predicted values and in order to assess linearity. Descriptive statistics, minimum, maximum, mean and standard deviation of all main variables in the study were computed. Six regression analyses were run to test the hypotheses. Two regression analyses for accepting and controlling parental styles as independent variables and PIU as dependent. To assess the moderation effects, four regression analyses were performed with dependent variable PIU and independent variables, controlling parental style, accepting parental style, avoidant coping, self-regulation and the interaction between both parental styles with avoidant coping and self-regulation separately. Before doing the regression analysis, the means of the variables used were centered to prevent multicollinearity between the interaction terms and the variables.

Results

Descriptive Statistics

In Table 1, mean values, and the corresponding measures of standard deviations with minimum and maximum scores for the variables are displayed. In Table 2, the Pearson correlations between main variables of the study are reported. The correlations in the study were all significant, ranging from small to moderate.

Table 1

Minimum, Maximum, Mean and Standard Deviation of PIU, Accepting Parental Style, Controlling, Parental Style, Self-Regulation and Avoidant-Coping.

	Mean	*Standard Deviation*	*Minimum*	*Maximum*
PIU*	63.52	17.65	28	122
Accepting Parental Style*	41.45	9.43	11	55
Controlling Parental Style*	30.14	8.89	11	55
Self-Regulation	44.10	7.55	22	64
Avoidant-Coping	22.91	3.94	12	33

Note. * PIU = sum of all measures of PIU, including excessive, negative and social PIU; *Accepting parental style= warm/affectionate paternal parenting style; *Controlling parenting style= controlling/strict paternal parenting style.

Table 2

Pearson Correlations

	Accepting Parental Style	Controlling Parental Style	Avoidant-Coping	Self-Regulation	PIU*
Accepting Parental Style*	--				
Controlling Parental Style*	-.22	--			
Avoidant-Coping	-.16	.18	--		
Self-Regulation	.22	-.16	-.11	--	
PIU *	-.20	.22	.37	-.37	--

Note. * PIU = sum of all measures of PIU, including excessive, negative and social PIU; *Accepting parental style= warm/affectionate paternal parenting style; *Controlling parenting style= controlling/strict paternal parenting style.

Parametric Assumptions

Analysis of scatterplots for the variables under study confirmed adherence to the assumption of linearity (Appendix B). There was no pattern, suggesting that the assumption of homoscedasticity was not violated. In addition, VIF values were examined to detect multicollinearity. VIF values greater than 5.00 suggest a problematic level for multivariate collinearity. For the current study the highest VIF value was 1.10, indicating that the assumption of multicollinearity is not violated.

The normality of residuals was assessed using histograms and normal probability plots (P-P plots). The histogram demonstrates a clear normal distribution of residuals (Appendix A). Additionally, the P-P and scatter plots support the conclusion of normality, indicating normality for residuals is not violated.

Regression Analyses

Hypotheses 1 & 2

Simple linear regression analyses showed a significant statistic for accepting parenting style negatively predicting PIU (β = -.37, 95% CI [- .51, .24], $t(697)$=-5.35, p < .001), and controlling parenting style positively predicting PIU (β = .43, 95% CI [.29, .58], $t(697)$=5.91, p < .001). Hypotheses 1 and 2 were confirmed.

Hypothesis 3

See table 3 for the outcomes of the moderation analysis. It shows that the interaction between controlling parenting style and avoidant coping was not significant. Hence, the hypothesis is rejected. The overall regression explained a significant proportion of the variance in PIU, R^2= 0.16, $F(3, 695) = 44.76$, p < .001.

Table 3

Moderation effects of Avoidant Coping in the relationship between Controlling Parenting and PIU

Effects	Estimate	SE	t-value	95% CI		*p*
				LL	UL	
Single Effects						
Intercept	63.74	.62	102.49	62.514	64.95	.000

					6	
Controlling parental style*	.33	.071	4.62	.188	.464	<.001
Avoidant-coping	1.49	.16	9.47	1.181	1.800	<.001
Moderation Effects						
Controlling parental style * Avoidant-coping	-.03	.02	-1.76	-.064	.003	.078

Dependent variable: PIU - overall total score; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *Note:* *Controlling parental style = controlling/strict paternal parenting style.; $p < .001$ is significant.

Hypothesis 4

A regression analysis with a moderation interaction effect was conducted. There was found a non-significant interaction effect between accepting parenting style and avoidant coping as depicted in table 7. As such, the hypothesis is rejected. The overall regression explained a significant proportion of the variance in PIU, $R^2 = 0.16$, $F(3, 695) = 42.93$, $p < .001$.

Table 4

Moderation effects of Avoidant Coping in the relationship between Accepting Parenting and PIU

Effects	Estimate	SE	t-value	95% CI		*p*
				LL	UL	
Single Effects						
Intercept	63.65	.62	102.43	62.425	64.865	.000
Accepting parental style *	-.28	.07	-4.23	-.413	-.151	<.001
Avoidant-coping	1.51	.16	9.60	1.204	1.824	<.001
Moderation Effects						
Accepting parental style * Avoidant-coping	.02	.02	1.11	-.014	.050	.269

Dependent variable: PIU - overall total score. CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *Note:* * Accepting parental style = warm/affectionate paternal parenting style; $p < .001$ is significant.

Hypothesis 5

As seen in table 5, there was found a non-significant interaction effect in the regression analysis between controlling parenting style and self-regulation. Hence, the hypothesis is rejected. The overall regression explained a significant proportion of the variance in PIU, $R^2 = 0.17$, $F(3, 695) = 46.38$, $p < .001$.

Table 5

Moderation effects Self-regulation in the relationship between Controlling Parenting and PIU

Effects	Estimate	SE	t-value	95% CI		*p*
				LL	UL	
Single Effects						
Intercept	63.47	.62	102.85	62.256	64.689	.000
Controlling parental style *	.33	.07	4.69	.190	.463	<.001
Self-regulation	-.82	.08	-9.96	-.983	-.659	<.001
Moderation Effects						
Controlling parental style * Self-Regulation	.000	.01	.03	-.017	.018	.974

Dependent variable: PIU - overall total score*;* CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *Note:* *Controlling parental style = controlling/strict paternal parenting style.*; p* < .001 is significant.

Hypothesis 6

In the regression analysis, there was found a non-significant interaction effect as depicted in table 9, between accepting parenting style and self-regulation. The hypothesis is rejected. The overall regression explained a significant proportion of the variance in PIU, R^2= 0.16, $F(3, 695) = 42.53$, $p < .001$.

Table 6

Moderation effects Self-regulation in the relationship between Accepting Parenting and PIU

Effects	Estimate	SE	t-value	95% CI		*p*
				LL	UL	
Single Effects						
Intercept	63.52	.63	101.26	62.287	64.751	.000
Accepting parental style *	-.23	.07	-3.46	-.363	-.100	<.001
Self-regulation	-.82	.08	-9.75	-.986	-.655	<.001
Moderation Effects						
Accepting parental style * Self-regulation	-.004	.01	-.46	-.020	.012	.648

Dependent variable: PIU - overall total score. *p*<.01*;* CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *Note:* * Accepting parental style = warm/affectionate paternal parenting style; *p* < .001 is significant.

Discussion

This study aimed to investigate the influence of paternal parenting styles, on PIU among adolescent boys in Ankara, Turkey. The focus was on the relationship of parenting styles with PIU and the moderators, avoidant coping strategies and self-regulation skills. The primary objective was to examine if and how avoidant coping and self-regulation skills of adolescents moderate paternal parenting styles and PIU. For this, three research questions were established. The current paper did not find support for the fact that avoidant coping and self-regulation moderates the relationship between different parenting styles and PIU. However, the research did reveal a significant direct relationship between both controlling/strict and accepting/affectionate parenting styles and PIU.

Specifically, a controlling/strict parenting style was positively associated with higher PIU levels and accepting/affectionate parenting style was negatively associated with PIU, which is in line with the general literature on parenting styles and PIU, which includes maternal parenting and adolescents' girls (Hayixibayi et al. 2022; Lee & Stapinski, 2012; Robertson et al. 201; Senormanci et al. 2014; Zhang, 2015). The findings of the current study, focusing exclusively on father-son relationships may suggest that controlling/strict parental style may exacerbate tendencies towards PIU, potentially by inducing stress or rebellion, which aligns with the framework suggested by Davis (2001) and Pinquart (2017), regarding the role of paternal parenting in emotional regulation and behavioral control (Dunbar et al. 2018; Liu, Young, 2011; Zimmerman, 2011). In contrast, an affectionate and accepting approach appears as a protective factor, reducing the likelihood of PIU, supporting the importance of warmth and acceptance in parenting fostering adaptability and resilience in children (Amani et al. 2020; Yu, & Gamble, 2008, 2009, 2010).

Interestingly, the moderation effects of avoidant coping and self-regulation were not significant, although there was found a direct influence of both avoidant coping and self-regulation on PIU. This suggests that the direct influence of the individual effects of avoidant coping and self-regulation on PIU is notable, when compared to their interactive effects. These findings are in line with Robertson et al. (2018) and Zhang (2015), arguing that self-regulation can significantly weaken the risk of PIU. Correspondingly, the suggested finding that avoidant coping can lead to an increased risk of developing PIU is also supported in the literature (Atasalar & Michou, 2019; Lee & Stapinski, 2012; MacIntyre et al. 2020; Senormanci et al. 2014).

The lack of significant moderation effects indicates that while avoidant coping and self-regulation are important factors in the development of PIU, their interaction with parenting styles does not significantly alter the risk profile for PIU beyond the direct effects of

each individual factor in the current study. This could suggest an interplay of these factors where each contributes independently to the risk of PIU, rather than in combination, which could explain the non-significant effects of moderation for avoidant coping and self-regulation. For example, the mechanisms through which self-regulation and avoidant coping influence PIU might operate independently from those affected by parenting styles (Xiao et al. 2019). Self-regulation and avoidant coping might influence PIU through immediate behavioral choices in online settings, as proximal variables, whereas parenting styles might influence more long-term attitudes or values about internet use as a distal variable. Additive model rather than an interactive model might be more appropriate for describing influences on PIU (Xiao et al. 2019). If these paths do not intersect significantly, it could explain why interaction of self-regulation and avoidant coping might not be meaningful in predicting PIU in the current study.

Strengths and Limitations

The present study, while offering insights into the effects of paternal parenting styles on PIU among adolescent boys, possesses several limitations. First of all, all the measures were collected during the COVID-19 pandemic. The pandemic period was associated with elevated risks of internet addiction among individuals and worsening mental health symptoms in adolescents (Jahan et al. 2021; Racine et al. 2021). Consequently, the participants in this study were significantly affected by the outcomes of the COVID-19 pandemic, which may have impacted the findings reported in the current paper. Moreover, even though the study included many different students, participants were chosen through convenience sampling, not randomly. As a result, the sample could lack generalizability due to the potential biases of the sample (Wild et al. 2022). A third limitation is the cross-sectional nature of the study. The study design limits the ability to establish causality between variables, since all measures are established at a single point of time, it is difficult to separate between presumed cause and its effect (Taris et al. 2021).

Furthermore, the use of self-reported measures may introduce bias, particularly social desirability or recall biases, which can affect the accuracy of the data reported by adolescents regarding their internet use and perceptions of parental behavior (Andrews, 1991). Finally, the reliability of some instruments, notably the self-regulation scale used in this study, demonstrated lower Cronbach's alpha values, which might affect the robustness of the findings.

Likewise, the current study has its strengths. First, this study includes a considerable sample size, which provides robustness to the study. Second, the study aimed to fill in the gap

in the existing body of knowledge by focusing exclusively on father-son relationship (Robb, 2021), and by identifying specific moderating factors, which emphasizes the role of fathers in promoting healthier internet use of adolescents. To the best of the researcher's knowledge, this specific focus represents a novel approach in the current body of research in parenting and adolescent outcomes and is relatively underexplored. Furthermore, limited research has been devoted to exploring how individual and family dynamics combine to affect the emergence of PIU in early adolescence (Marci et al. 2021). As such, focus of the current study fills a notable gap in the literature, especially concerning PIU (Dunbar et al. 2018). Similarly, the study contributes to the cross-cultural exploration of PIU and paternal parenting styles, since different parenting practices are observed in cultural and regional backgrounds (Lukavska, et al. 2022). Finally, the study contributes to the valuable insights for developing targeted interventions aimed at reducing PIU among adolescent boys (Fineberg et al. 2022).

Implications

This study suggests several theoretical and practical implications. First, it supports the idea of existing models of parenting styles by Baumrind (1991) and Maccoby & Martin (1983) to specifically include paternal behaviors and their unique impacts on adolescents' PIU, considering distinct parental roles when investigating adolescent behavior (Robb, 2021). Moreover, the paper supports theories, which emphasize the importance of self-regulatory skills and avoidant coping in the development of PIU (Lee & Stapinski, 2012; Senormanci et al. 2014; Zimmerman, 2000).

What is more, interventions could be designed in relation to the knowledge of research on PIU to educate the fathers on the impact of their parental style on adolescents' PIU. This could include training on authoritative parenting techniques which have been shown to promote healthier behaviours (Kauser, & Pinquart, 2019; Stevens & N'zi, 2019). Similarly, school-based programs could help in early identification and interventions for adolescents at risk of PIU and collaborate with parents to prevent or limit PIU.

Recommendations for Future Research

Regarding future research, it could be beneficial to extend the present study's findings by examining the variables within a longitudinal study design, such as using Experience Sampling Methods (ESM) (Taris et al. 2021; Schneider, 2006). This study design could aid in observing directionality changes in parenting styles and adolescent PIU over various time periods, which could provide more accurate causal pathways to infer causality and support unique insights into the variability of within and between adolescents' differences in real life, next to conventional methods of measuring trait variables (Kuppens et al. 2010). What is

more, the measurements could be further explored on PIU changes within adolescents' in relation to parenting styles, self-regulation and avoidant coping, involving contextual variables, such as Mood, energy levels and so on. Future research could benefit from incorporating multiple informants, such as parents or teachers, and objective measures of internet use to validate and expand upon the self-reported data.

Furthermore, cross-cultural replications and studies involving larger samples are suggested in order to address the generalizability issue and differences in parenting practices in different cultural and regional backgrounds (Lukavska et al. 2022). Comparative studies involving diverse cultural backgrounds could provide a more comprehensive understanding of the dynamics between paternal parenting, self-regulation, avoidant coping, and PIU. Beyond the generalized pattern of internet use researched in the present study, it would be also valuable to research the specific types of online activities adolescents engage in order to build targeted interventions (Marci et al. 2021). In addition, although the current study focused mainly on the middle of adolescence, other future studies are highly recommended to examine early adolescence or younger children, because of extensive developmental changes (Brey, 2006; Foulkes & Blakemore, 2018; Lusk, 2010). This could help with the development of age precise interventions for each age group of youth.

Lastly, a future study could examine the interplay of various factors where each contributes independently to the risk of PIU or in tandem (Xiao et al. 2019), especially since multiple factors contribute to the emergence of PIU, including different characteristics of adolescents' and their families (Liu et al. 2015). For example, degree of intimacy with each parent, spend time and so on. Lastly, in addiction research, prevention is often more important than intervention (Dodge, & Godwin, 2013; Lovato et al. 2013). Future studies should look into creating a prevention plan that involves schools, communities, and families.

Conclusion

In light of the results presented in the research and keeping the limitations of this paper in mind, the study shows that parenting styles, both controlling/strict and warm/affectionate, significantly influence PIU. Specifically, warm and accepting parenting is associated to decreased PIU scores in adolescent boys, while controlling and strict parenting is associated to increased scores. Moreover, although there were no significant interaction effects found between parental style, PIU and avoidant coping and self-regulation skills, there were found both negative and positive direct effects for avoidant coping and self-regulation on PIU accordingly. This paper advances the understanding of how paternal parenting styles influence PIU, particularly exploring the father-son dynamic. Given the limited research on

paternal practices and its cultural context, this study is unique in its focus. It examines the effects of fathers' parenting on sons' avoidant coping, self-regulation, and PIU, aiming to inform interventions that reduce PIU and highlight the important role of fathers in fostering healthier internet use behaviors.

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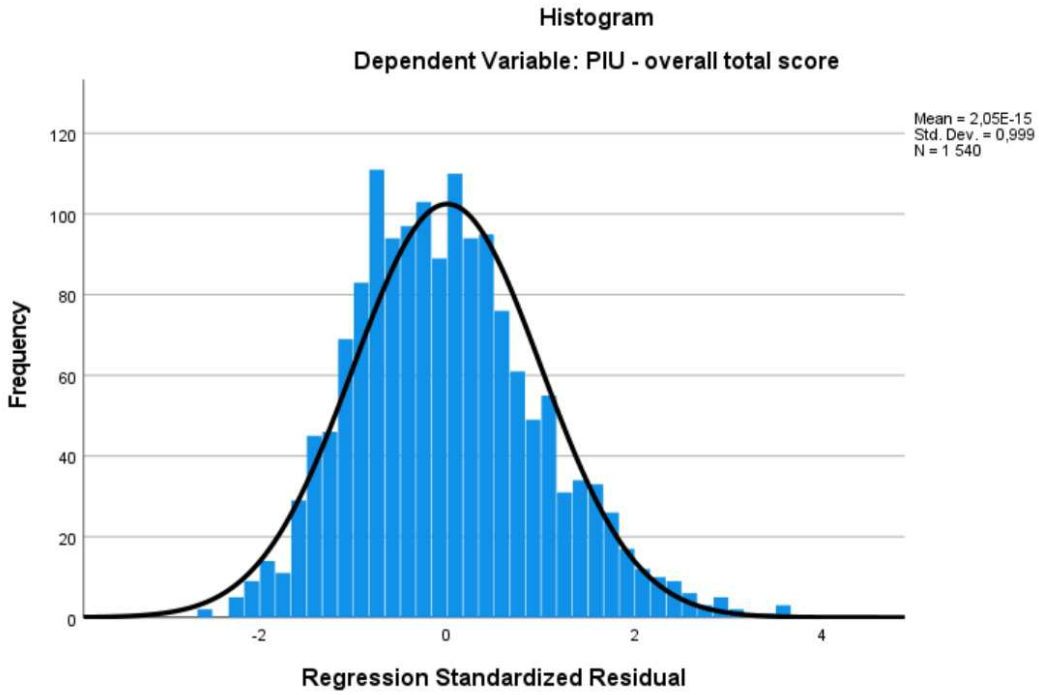
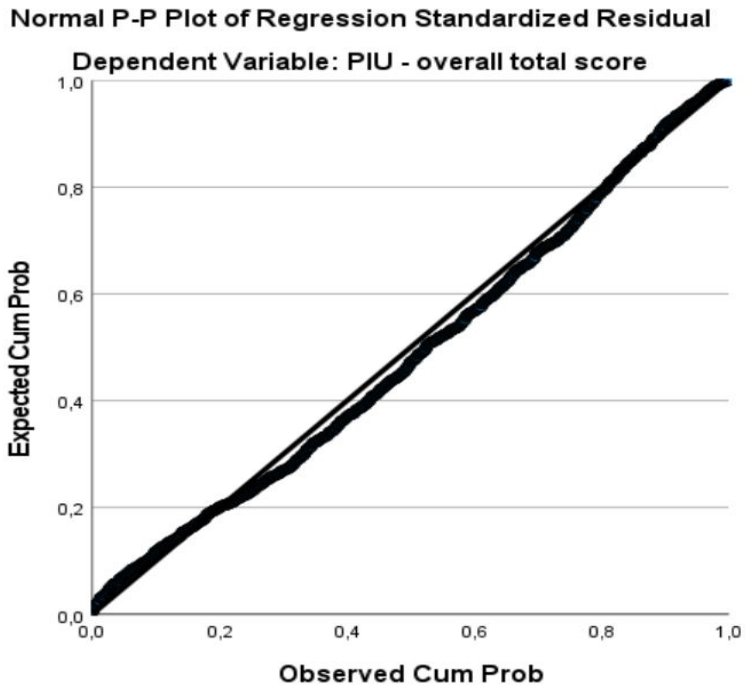
Appendix

Appendix A

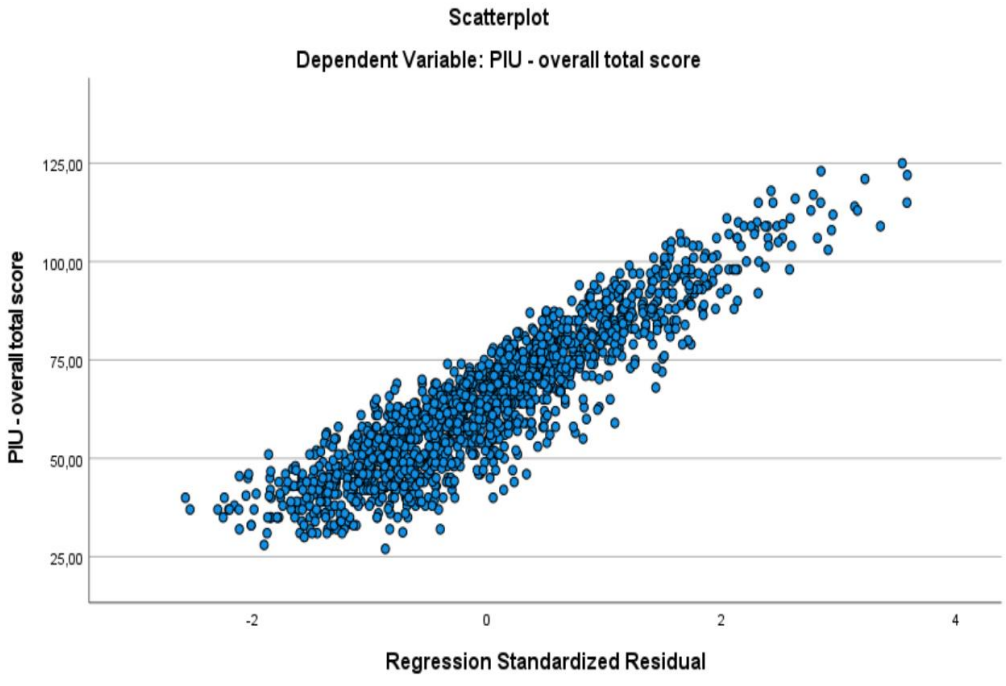
Histogram of Residuals



P-plot of Residuals

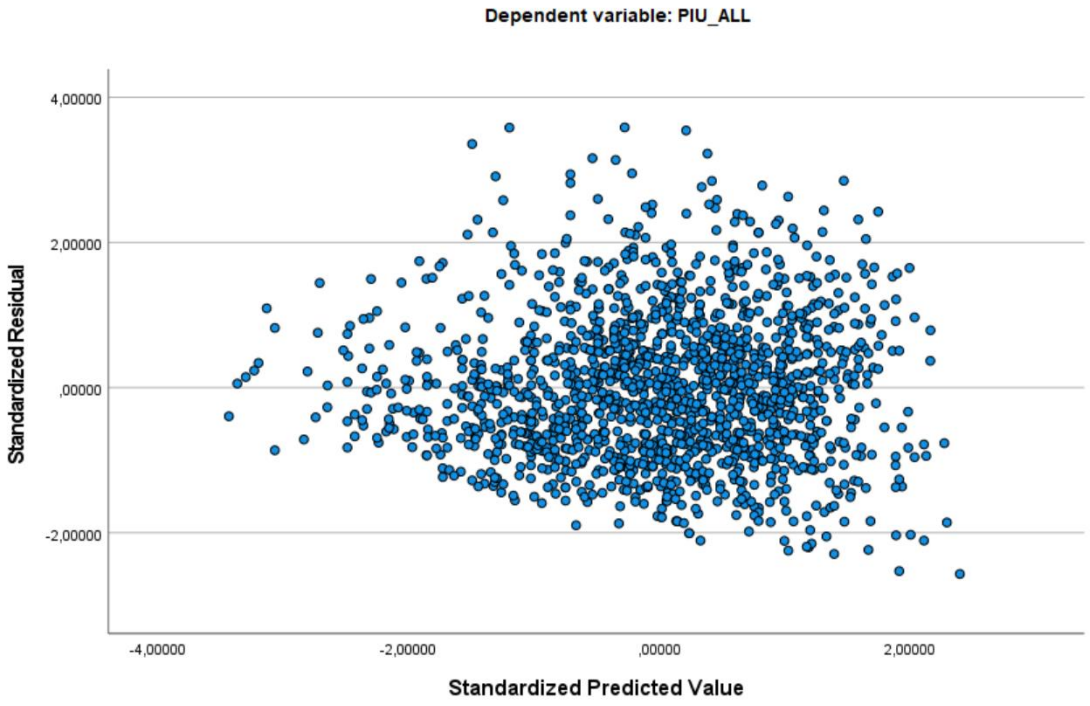


Scatter Plot of Residuals



Appendix B

Linearity and Homoscedasticity


Dependent variable: PIU_ALL
Standardized Residual
4,00000
2,00000
,00000
-2,00000
-4,00000
-2,00000
,00000
2,00000
Standardized Predicted Value