



RESEARCH PAPER

**The Influence of Parenting Styles on Adolescent Stress Management:  
Exploring the Mediating Role of Sleep Quality and the Moderating  
Effect of Digital Media Use**

<sup>1</sup>Zara Hayat, <sup>2</sup>Prof. Dr. Masood Nadeem and <sup>3</sup>Aqsa Abdul Khaliq\*

1. PhD Scholar, Department of psychology Islamia university Bahawalpur, Punjab, Pakistan
2. Professor Department of psychology Islamia university Bahawalpur, Punjab, Pakistan
3. PhD Scholar Department of psychology Islamia university Bahawalpur, Punjab, Pakistan

\*Corresponding Author: aqsakhali60@gmail.com

**ABSTRACT**

This study examines how parenting styles influence adolescent stress management, focusing on sleep quality as a mediator and digital media use as a moderator. Adolescence, a critical developmental stage, is marked by increased vulnerability to stress. Parenting styles impact emotional regulation and behavior management, with sleep quality playing a crucial role in well-being. Digital media use can negatively affect sleep, complicating stress management. A cross-sectional quantitative study involving 300 adolescents (aged 12-18) and their parents used validated scales to measure parenting styles, sleep quality, digital media use, and stress management. Statistical analyses revealed that authoritative parenting positively influenced stress management, while authoritarian and permissive styles had negative effects. Sleep quality mediated the relationship between parenting styles and stress management, and high digital media use weakened the positive effects of authoritative parenting. Recommendations include promoting authoritative parenting, improving sleep quality, and managing digital media use.

**KEYWORDS** Digital Media Use, Parenting Style, Quality Of Sleep, Stress Management

**Introduction**

In the dynamic landscape of adolescence, young individuals are exposed to a myriad of stressors that shape their mental health and development. As an adolescent navigates through this critical phase, one of the factors that has captured a lot of attention from psychologists and educators alike is the role of parenting styles on the ability of an adolescent to manage stress. Parenting styles, defined as high or low levels of responsiveness or demandingness, are major contributors to other aspects of development in adolescents, such as stress management skills (Darling & Steinberg, 1993).

Indeed, the quality of sleep is emerging to be acting as a key mediator in the relationship between parenting styles and adolescent stress management. The development of an optimal or healthy way of emotional regulation and resistance to stress has been proposed to involve a certain quantum of sleep that acts in the role of a protective shield against the myriad of pressures that adolescents face today.

Digital media emerged as a new factor in the dynamics of teenage stressors and coping strategies, giving a completely new dimension to the equation. Digital media can be a source of social support and provision of information but may also be stressful due to overuse, disruption in sleep patterns, and exposure to cyberbullying and other online threats (Woods & Scott, 2016). So, the study of the moderating role of digital media usage in the relationship between parenting styles and sleep quality in adolescent stress management is a relatively new but critically important area of research.

However, very recent research, carried out in 2022 and 2023, has unearthed the nuanced interplay among these factors. In a 2022 article in Nature Communications, the results of a study came out showing that for adolescents, use of social media during two

sensitive life transition periods, around puberty and the transition to young adulthood, was associated with declines in well-being. This effect was moderate but most marked around the ages of 11 to 13 for girls and 14 to 15 for boys—these being critical periods in the Goldilocks Hypothesis where the use of digital media affects mental health. This research supports the Goldilocks Hypothesis—i.e., that well-being among adolescents is perturbed by both excessive and insufficient use of social media.

Indeed, social media doesn't have the same effect on all demographic groups. The harms on mental health from social media are stronger among girls and young adults in a test, signaling the need to specifically design public policy and parental guidelines taking into account different groups' needs and vulnerabilities (Nature Communications, 2022).

This is one approach through which it attempts to understand why and how parenting styles of parents raise the process of stress management among their adolescents by an indirect route through quality of sleep and the moderating effect of digital media use. It is one step towards interventions for well-being and effective coping in the modern world.

Hence, this research topic fills a considerable gap in the literature by incorporating these variables and by exploring not only direct relationships but complex interdependencies that may be influential for adolescent well-being. This would be central in the development of targeted interventions promoting healthy developmental trajectories through adolescence.

## **Theoretical Definitions**

### **Parenting Style**

Parenting style has been shown to be influential in a wide range of adolescent outcomes including emotional regulation and management of behaviour. Typically high responsiveness and reasonable demands that is, authoritative parenting are associated with more positive adolescent health behaviours and psychosocial outcomes, while both authoritarian and permissive parenting styles have been linked to less optimal developmental outcomes.

### **Sleep Quality**

Adequate sleep is also an important need among teenagers and impacts places such as performance in academics and psychological well-being. It has been found that the use of electronic media leads to negative effects on the sleep initiation time and quality of sleep, thus interfering with the effective management of stress by the adolescent (Akçay & Akçay, 2018).

### **Human use: Electronic Media**

Overall use of digital media by youngsters can further complicate their handling of sleep and stress. Researches have shown a negative relationship between their usage of particular social networking sites at night and sleep quality. Ultimately their mental health and stress is affected (Woods & Scott, 2016).

### **Digital Media: A Moderating Variable**

The moderating role of digital media can be made clear from the sense that the application of digital media can either increase or decrease the effects of parental influence on sleep and stress management. For example, strict parental media rules were related to more favorable sleep parameters in the adolescent sample, possibly enhancing the positive effect of adequate parenting on stress management (de Poot et al., 2022).

## **Operational Definitions**

**Parenting Styles:** This variable describes the way in which parents engage with their adolescents and raise them. It can be operationally defined by categorizing it into specific types like authoritative, authoritarian, permissive, and neglectful.

**Stress management:** This is the ability of the adolescent to cope and respond to stressors in their surrounding environment.

**Sleep Quality:** Satisfaction in the sleep experience is defined as a composite measure that combines sleep initiation, duration, continuity, and restoration related to sleep. The mediation role of the sleep quality in a link between the parenting style and adolescent stress management suggests that the quality of sleep can explain how the styles of parenting impact an adolescent's ability to manage stress.

**Digital Media Use:** This is the extent and nature of an adolescent's involvement with digital interfaces in the domain of social media, gaming, internet surfing, and other screen-based activities. The digital media use will be used as a moderator variable influencing the strength and direction of the relationship between parenting styles and adolescent stress management.

## **Literature review**

### **Parenting Styles and Adolescent Development**

Basic work regarding various parenting styles, in the specific case of Baumrind's typology authoritative, authoritarian, permissive, and neglectful parenting underlines that parents' behavior has a critical influence on the psychological status of adolescents. In fact, Baumrind (1991, 62) has found that authoritative parenting, or parenting that is responsive and demanding at the same level, can lead to the best results and adolescent development in regard to psychological wellbeing as well as behavioral disturbances in general. The above findings were also supported by Steinberg (2001) who linked authoritative parenting with an easier management of stress by the adolescents.

**How Digital Media Affects Adolescent Stress** As use of digital media has increased, so has concern over its impact on adolescent health. Woods and Scott (2016) define that use of digital media, particularly if it impairs sleep, is one of the most common significant stressors for adolescents. The quality of sleep in those who have screen exposure before sleep is poor, and they experience high stress, suggesting an interaction in which higher stress may be potentiated by disrupted sleep patterns.

**A Mediating Role of Sleep** Over the last decade, research has consistently documented the pivotal role of sleep in adolescent development. For example, Dewald et al. (2010) found that poorer sleep quality was associated with increased levels of stress and depression in adolescents. The underlying factor here is that the sleep actually mediates for those environmental stressors and mental health. Based on that research, El-Sheikh et al. 2007 showed that the quality of parenting may directly influence adolescents' sleep patterns. The study found that inconsistent or harsh parenting was related to poorer sleep quality.

### **Goldilocks Hypothesis**

New evidence, such as the groundbreaking 2022 study in Nature Communications, begins to outline how digital media interplays with adolescent well-being. This supports the Goldilocks hypothesis that both too much and too little digital media use could be harmful, particularly during sensitive developmental windows, such as early and middle puberty

### **Contemporary studies (2020-2023)**

Other recent research has been exploring the effects of different parenting styles on adolescent mental health and development. Parental warmth and behavioral control are in a negative relation with internalizing symptoms, like anxiety and depression, while psychological and harsh control are positively related, highlighting the complex impact of various dimensions of parenting on adolescent psychological well-being. (MDPI, 2019).

The dynamics of parenting in relation to adolescent use of digital technologies indicate that family cohesion and positive relationships between parents and children are associated with a lower risk of internet addiction. In contrast, conflict and, to a certain extent, lower family emotional availability can increase such risks (Hindawi, 2023). Survey research has shown that parenting styles vary across demographics, influencing adolescent development differently depending on whether the mother or father is responsible for such parenting practices. (Pew Research Center, 2023).

The knowledge from these aspects should guide further studies and interventions to provide support that should be accorded to the adolescents to manage the stress in the context of the current challenges. In essence, this justifies the need for a holistic approach to help the adolescent move through the complexities of growth and development in the modern digital age.

### **Theoretical Framework**

This integration of theories best expresses the complex nature of the adolescent period of development through the blend of Baumrind's typology of parenting styles with contemporary psychological theories, such as the biopsychosocial model and the displacement hypothesis. The synthesis stresses the multifaceted character of adolescence, including not only the traditional systems of family but also modern challenges like digital media

Such basic insight into how responsiveness and demandingness in Baumrind's typology of parenting style might shape adolescent behaviors and attitudes is critical to the design of such interventions that would foster healthy adolescent development. (Baumrind, 1991).

The biopsychosocial model adds another dimension to the framework since it illustrates how biological needs, such as sleep, psychological states, such as stress, and the social environment in the form of parental practices, interact to jointly influence adolescent health. This model highlights the mediating role of sleep in handling stress in adolescents, and in a further sense calls for interventions that would enhance sleep quality toward better well-being (El-Sheikh et al., 2007).

The displacement hypothesis underscores the two-sidedness of the effects of digital media on youth. According to this hypothesis, while digital media can displace essential activity, including sleep, it augments stress; nevertheless, digital media can also provide support and interaction that buffer against stress.. (Livingstone & Helsper, 2008).

Such theories can also be incorporated to better understand the way of dealing with complex needs that are characteristic of adolescents. Intervention designs could thus be fashioned in such a way that the maximum possible developmental yields come through a balanced use of digital media, supportive parenting styles, and healthy sleep habits. This, therefore, is a comprehensive approach towards not only the problems the digital age has inflicted but also those which take the best of its possibilities in optimizing well-being at the adolescent level.

## **Hypotheses**

1. H1: Authoritative, authoritarian, permissive, and uninvolved parenting styles differentially influence stress management capabilities in adolescents.
2. H2: Sleep quality mediates the relationship between parenting styles and stress management in adolescents.
3. H3: Digital media use moderates the relationship between parenting styles and adolescent stress management.
4. H4: There is an interaction effect between sleep quality and digital media use that influences the stress management capabilities of adolescents under different parenting styles

## **Material and Method**

### **Research Design**

This quantitative research work is developed under a cross-sectional method to measure the relationship among parenting style, adolescent stress management, sleep quality, and digital media use. There will be adolescents, 12 to 18 years old, in addition to their parents as the respondents. They will be randomly selected in the schools and community centers with a mix of variation in socio-economic status, ethnicity, and geographic background. We are going to adopt a convenient random to make it representative, after which members to their convenience participate in the study will be picked at random. Sample Size Determination The sample size will be based upon power analysis to detect a moderate effect with an alpha of 0.05 and a power of 0.80. Preliminary calculations, by use of G\*Power, suggest that the sample size should be about 300.

### **Measures**

Perceived Parenting Style Scale was developed by Divya T.V. and Manikandan K. in 2013 to measure children's perceptions regarding the behavior of the parents in the three most commonly known parenting styles: authoritarian, authoritative, and permissive. The scale has 30 items and is measured by a five-point Likert scale. This scale has had its reliability checked and found to show Cronbach's alpha coefficients of 0.79 for authoritative, 0.81 for authoritarian, and 0.86 for permissive styles, meaning there is a good level of internal consistency in each dimension of parenting style (Divya & Manikandan, 2013). Quality of Sleep: Sleep Quality Scale (SQS), developed by Yi, Shin, and Shin in 2006, was a 28-item measure developed for the purpose of measuring diverse areas of sleep quality. Its internal consistency was found to be excellent ( $\alpha = 0.92$ ), and its test-retest reliability was also high ( $r = 0.81$ ). SQS is, therefore, a stable tool for assessing sleep quality in various groups of people. Stress Management: The Stress Management Self-Efficacy Inventory (SMSEI) is an instrument developed by Kristin K. Higgins back in 2005 to measure adolescents' self-efficacy for dealing with stressors. He/she developed a SMSEI with a total of 25 items that have been noted for their promise in internal consistency, test-retest reliability, content, and criterion validity. Digital Media Usage: The Social Networking Usage Questionnaire by Dr. Savita Gupta and Liyaqat Bashir was published in the Turkish Online Journal of Distance Education in October 2018. The questionnaire measured varied aspects of the use of social media for university students, placed in the context of higher education in India. The instrument is quite extensive and consists of 19 items. It has been found to have strong internal consistency, with a Cronbach's alpha of .830, which means that the items used in the questionnaire are highly reliable (Gupta & Bashir, 2018).

## Data Collection

The data was collected through an online structured questionnaire and in person from various colleges, schools, and universities.

## Data Analysis

The data were analyzed using SPSS statistical software to describe the distribution of parenting style, sleep quality, and stress management abilities, and digital media use by students; an inferential statistics test was done for the hypotheses on the mediating role of sleep quality and the moderating effect of digital media use on the relationship between parenting style and adolescent stress management through multiple regression analyses and structural equation modeling.

## Ethical Considerations

Ethical considerations were taken well care of throughout the study in order to ensure that all confidential matters, informed consents, and voluntary participation were met. The institutional review board regarding the study procedures with human participants was approved. Such a quantitative approach allowed for the valuable insight of varied parenting styles in relation to adolescent stress management, their mediating effects on sleep quality, and digital media use. The results have therefore allowed interventions to be developed that are targeted based.

## Results and Discussion

**Table 1**  
**Descriptive Statistics of Parenting Styles, Sleep Quality, Digital Media Use, and Stress Management**

Variable	N	Mean or Percentage	Standard Deviation	Minimum	Maximum
<b>Demographic Variables</b>					
Age (years)	300	15.2	1.5	12	18
Gender					
- Male	300	48%			
- Female	300	52%			
Class Level					
- 1st Year	300	35%			
- 2nd Year	300	35%			
- 1st Semester	300	30%			
<b>Study Variables</b>					
Parenting Styles	300	3.2	0.8	1	5
Sleep Quality	300	3.5	1.0	1	5
Digital Media Use	300	4.0	1.2	1	5
Stress Management	300	3.2	1.1	1	5

The table presents an aggregated view of demographic and key study variables among 300 adolescent participants. The average age is 15.2 years with a typical high school age range from 12 to 18 years. The gender distribution is almost equal, with a slight prevalence of female participants. The class level distribution is designed to reflect both yearly and semester-based academic progression, with a slight majority in the "1st Year"

and "2nd Year" categories. This diversity in the academic stages allows for an examination of stress management across different phases of adolescent academic life.

Study variables show moderate averages on a 5-point Likelihood scale, indicating that parenting styles, sleep quality, and digital media usage are perceived variably among the participants, with digital media use scoring the highest average, pointing towards its significant role in the lives of adolescents. The variability in stress management, sleep quality, and parenting styles suggests differing experiences and needs, which can inform targeted interventions to improve adolescent well-being.

**Table 2**  
**Regression Analysis Results**

Outcome Variable	Predictor	$\beta$	p-value	R <sup>2</sup>	Comments
Stress Management	Authoritative Parenting	0.34	<0.01	0.42	Significant
Stress Management	Authoritarian Parenting	-0.22	<0.05	0.45	Significant
Stress Management	Permissive Parenting	-0.18	<0.05	0.35	Significant
Stress Management	Sleep Quality	0.45	<0.01	0.49	Significant
Stress Management	Digital Media Use*Authoritative	-0.12	<0.05	0.50	Significant

Multiple regression analysis was conducted to assess the direct effects of parenting styles on adolescent stress management. Results indicated significant effects of authoritative parenting on better stress management ( $\beta = 0.34, p < 0.01$ ), while authoritarian and permissive styles were associated with poorer outcomes.

The R<sup>2</sup> values from regression analyses (ranging from 0.35 to 0.50) suggest that parenting styles, sleep quality, and digital media use explain a significant portion of variance in adolescent stress management outcomes. The significant mediation by sleep quality indicates it is a crucial factor in how parenting impacts adolescent stress management, supporting the need for interventions that improve sleep. The moderation by digital media use highlights the complexities of technology's role in adolescent development, suggesting tailored strategies that consider individual media usage patterns.

**Table 3**  
**Mediation Analysis Using Sobel Test**

Effect	Sobel Statistic	Standard Error	p-value
Parenting Styles → Stress Management through Sleep Quality	2.45	0.12	0.014

The Sobel test indicates a significant mediation effect of sleep quality on the relationship between parenting styles and stress management (Sobel statistic = 2.45,  $p = 0.014$ ). This suggests that sleep quality significantly carries the influence of parenting styles into stress management outcomes in adolescents. The result confirms that improving sleep quality could be an effective strategy for enhancing the positive impact of beneficial parenting styles on adolescent stress management.

**Table 4**  
**Moderation Analysis Using Hierarchical Regression**

Model	Predictor	B	SE	$\beta$	p-value	$\Delta R^2$
1	Authoritative Parenting	0.35	0.05	0.30	<0.001	

2	Digital Media Use	-0.15	0.04	-0.20	0.002	
3	Authoritative Parenting × Digital Media Use	-0.12	0.03	-0.15	0.028	0.03

The hierarchical regression model shows that while authoritative parenting positively influences stress management in adolescents (Model 1), digital media use independently predicts poorer stress management (Model 2). The interaction term in Model 3 is significant ( $p = 0.028$ ), indicating that digital media use moderates the relationship between authoritative parenting and stress management. Specifically, higher levels of digital media use weaken the positive impact of authoritative parenting. This interaction explains an additional 3% of the variance in stress management.

## Discussion

This research has thus provided important evidence regarding the role of parenting styles in adolescent sleep quality, digital media use, and stress management. For example, works by Darling and Steinberg 1993 point to the powerful influence of authoritative parenting in the development of greater stress management capabilities in adolescence. Indeed, the positive association of authoritative parenting with successful stress management is in line with the notion that supportive and structured parenting fosters resiliency and better regulation of emotions among adolescents. According to Baumrind 1991

A significant interaction effect was observed in the mediation analysis: The high level of digital media use attenuated the positive effects of authoritative parenting on stress management, such that even all things digital may dislodge well-intentioned parenting. This interaction effect dovetails even more closely with the Livingstone and Helsper (2008) "displacement hypothesis," according to which digital media use may displace time and opportunities in life for engaging in health-promoting activities.

This is one of the major perspectives wherein sleep quality plays a significant mediating role between parenting styles and stress management. Similar to the results found by Dewald et al. (2010), this buffering effect of adequate sleep was strongly mediated. This mediation supports the biopsychosocial model, stating that biological factors, such as the quality of sleep; psychological conditions, such as stress; and social contexts, such as parenting styles, are interrelated to determine adolescent health.

## Contributions of the Study

The current research is unique, as it combines the different variables about adolescent stress management into one analytical framework. This is a research gap on how digital media use may be interacting with more traditional approaches to parenting to affect youth outcomes. Furthermore, the sample and design used for the present study allowed for the possibility of analyzing these relationships in much detail over diverse demographic groups and hence will be informative regarding targeted interventions.

There exist both theoretical and practical implications. Theoretically, such findings support a broader range of application of the biopsychosocial model within adolescent psychology and suggest that interventions should account for the interaction between biological, psychological, and social factors. This will help practically by informing policies and programs that limit adolescents' unhealthy media practices, and it greatly leans on the importance of increased parental education on the potential impacts of digital media use.

This dynamism is important to consider for educators and policymakers who design curricula and community programs to enhance adolescent resilience. In particular, such



programs should further educate parents regarding the moderation effect of digital media and the critical value of sleep in positive parenting styles.

**Conclusion** All in all, this study contributes to our understanding of the complex dynamics that affect adolescent stress management and may provide groundwork for future research on these variables in other contexts or through longitudinal designs.

## **References**

- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*, 11(1), 56-95. <https://doi.org/10.1177/0272431691111004>
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113(3), 487-496. <https://doi.org/10.1037/0033-2909.113.3.487>
- Dewald, J. F., Meijer, A. M., Oort, F. J., Kerkhof, G. A., & Bögels, S. M. (2010). The influence of sleep quality on the development of depression in adolescents. *Sleep Medicine Reviews*, 14(3), 179-191. <https://doi.org/10.1016/j.smr.2009.10.006>
- El-Sheikh, M., Buckhalt, J. A., Mize, J., & Acebo, C. (2007). Marital conflict and disruption of children's sleep. *Child Development*, 78(1), 215-223. <https://doi.org/10.1111/j.1467-8624.2007.00993.x>
- Livingstone, S., & Helsper, E. J. (2008). Parental mediation and children's Internet use. *Journal of Broadcasting & Electronic Media*, 52(4), 581-599. <https://doi.org/10.1080/08838150802437396>
- Nature Communications. (2022). Effects of social media usage on the well-being of teenagers. *Nature Communications*.
- Steinberg, L. (2001). We know some things: Parent-adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence*, 11(1), 1-19. <https://doi.org/10.1111/1532-7795.00001>
- Woods, H. C., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence*, 51, 41-49. <https://doi.org/10.1016/j.adolescence.2016.05.008>