

Classroom Anxiety and Perceived Parenting Styles: A Moderated Mediation Model of Adolescent Well-Being and Academic Level

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Abstract

Adolescence is a period marked by heightened emotional sensitivity to both academic and familial environments. This study investigated the direct, mediated, and moderated relationships between Classroom Anxiety and adolescents' perceptions of Parenting Styles, with adolescent well-being as a potential mediator and academic level as a moderator. A sample of 1,015 Indian adolescents (ages 15–18) from secondary and senior secondary classes completed validated self-report measures assessing Classroom Anxiety, Parenting Styles (Authoritative, Authoritarian, Permissive), and five dimensions of well-being based on the EPOCH framework (Engagement, Perseverance, Optimism, Connectedness, and Happiness). Using structural equation modeling in R, we tested a moderated mediation model. Results indicated that higher Classroom Anxiety was directly associated with lower perceptions of Authoritative Parenting and higher perceptions of Authoritarian and Permissive styles. Optimism, Connectedness, and Happiness significantly mediated these relationships. Multi-group analyses revealed academic level as a significant moderator: senior secondary students exhibited stronger direct effects of anxiety on Perceived Parenting Styles, while secondary students demonstrated more complex indirect pathways through well-being variables. These findings support all four hypotheses, highlighting the distinct developmental mechanisms by which adolescents interpret and internalize stressors. The results accentuate the importance of targeting psychological well-being—particularly Optimism and Connectedness—as a means of buffering the impact of academic stress on family dynamics. Implications for school-based mental health programs and Parenting interventions are discussed, along with directions for future longitudinal and culturally diverse research.

Keywords: Academic Level, Adolescent Well-Being, Classroom Anxiety, EPOCH, Mediation, Moderation, Parenting Styles.

INTRODUCTION

Adolescence is a critical developmental stage marked by increased sensitivity to social contexts, including the classroom and family environment. Among the various stressors adolescents encounter, Classroom Anxiety has emerged as a prevalent and potentially disruptive experience, affecting not only academic performance but also emotional and behavioral regulation. At the same time, Parenting Styles—particularly the degree of warmth, control, and autonomy support—play a central role in shaping adolescents' coping mechanisms and psychological well-being. Although previous research has established links between Parenting practices and adolescent outcomes, less is known about how adolescents' experiences of stress—such as anxiety in academic settings—relate to how they perceive Parenting behavior. Specifically, the pathways through which Classroom Anxiety may influence Perceived Parenting Style, and how these pathways may differ by developmental stage, remain underexplored. Recent research highlights the significant influence of Parenting Styles on adolescent development. Authoritative Parenting, characterized by a balance of responsiveness and structure, has been consistently linked to positive outcomes in adolescents, including higher academic achievement, enhanced self-efficacy, and better psychological well-being (Hayek et al., 2022; Kern et al., 2016). In contrast, Authoritarian

Parenting, marked by strictness and low responsiveness, and Permissive Parenting, characterized by high responsiveness but low structure, have been associated with maladaptive outcomes such as increased anxiety, behavioral issues, and lower academic performance (Baumrind, 1991; Fadel et al., 2022). The EPOCH model of adolescent well-being, developed by Kern et al. (2016), identifies five positive psychological characteristics: Engagement, Perseverance, Optimism, Connectedness, and Happiness. These traits collectively contribute to adolescents' overall well-being and have been found to buffer against the negative effects of stress and anxiety (Kern et al., 2016). For instance, Optimism and Connectedness have been shown to mediate the relationship between stressors and psychological outcomes, highlighting their protective roles (Maurer et al., 2021). Despite the established links between Parenting Styles and adolescent well-being, most studies have examined these constructs in isolation. There is a paucity of research exploring the interrelations among Parenting Styles, adolescent well-being, and academic outcomes within a comprehensive, process-based model. Furthermore, cultural contexts and educational systems can moderate these relationships, necessitating studies that consider these variables (Yusoff & Hoesni, 2022).

Despite growing attention to adolescent mental health, few studies have simultaneously examined the direct, mediating, and moderating pathways between Classroom Anxiety and Perceived Parenting Styles. There is also limited research on how academic level (i.e., early vs. late adolescence) may moderate these relationships. The developmental implications of such moderated mediation models remain insufficiently understood, particularly in Indian cultural contexts, where hierarchical Parenting norms and educational pressures may amplify anxiety-related processes.

Research Objectives and Hypotheses

The present study aims to fill these gaps by using structural equation modeling to test a moderated mediation framework. Specifically, we examine whether the relationship between Classroom Anxiety and Perceived Parenting Styles is mediated by adolescent well-being (EPOCH) and moderated by academic level (secondary vs. senior secondary students).

Hypotheses:

H1: Classroom Anxiety will be significantly associated with Perceived Parenting Styles, such that higher levels of anxiety will predict lower perceptions of Authoritative Parenting and higher perceptions of Authoritarian and Permissive Parenting.

H2: The relationship between Classroom Anxiety and Perceived Parenting Styles will be mediated by dimensions of adolescent well-being, including Engagement, Perseverance, Optimism, Connectedness, and Happiness, as measured by the EPOCH framework.

H3: Academic level (secondary vs. senior secondary) will moderate the relationship between Classroom Anxiety and Perceived Parenting Styles, with stronger associations expected among secondary students.

H4: The indirect effects of Classroom Anxiety on Perceived Parenting Styles via adolescent well-being will be moderated by academic level, such that the strength and direction of mediation effects will vary between secondary and senior secondary students.

Materials and Methods

Study Design and Participants

A cross-sectional, correlational design was used to investigate the direct, mediated, and moderated relationships between Classroom Anxiety and adolescents' perceptions of Parenting Styles, with well-being as a mediator and academic level as a moderator. The sample comprised 1,015 adolescents (ages 15–18) recruited through multi-stage random sampling from seven private convent schools in the Delhi NCR region. Schools were selected using a lottery method, and students from Classes IX–XII were proportionally sampled to ensure representation across academic levels and socio-demographic groups.

Measures

2.2.1 EPOCH Well-being Scale: The EPOCH scale (Kern et al., 2016) assessed five psychological strengths: Engagement, Perseverance, Optimism, Connectedness, and Happiness. The 20 items were rated on a 5-point Likert scale (1 = Almost Never, 5 = Almost Always). Internal consistency was acceptable

to strong ($\alpha = .74-.92$).
2.2.2 Classroom Anxiety: The Classroom Anxiety Measure (CAM) (McCroskey & Richmond, 1982, 1985) includes 20 items rated on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree). The scale demonstrated high internal reliability ($\alpha \approx .90$).
2.2.3 Perceived Parenting Style: Parenting Styles were assessed using the Perceived Parenting Styles Scale (PPSS) (Manikandan & Divya, 2013), which comprises 30 items across Authoritative, Authoritarian, and Permissive styles, each rated on a 5-point Likert scale. Subscale reliabilities ranged from $\alpha = .79$ to $.86$.

Procedure-Data were collected during regular school hours in classroom settings by trained researchers using paper-based questionnaires. Standardized instructions were provided, and participation was voluntary, anonymous, and confidential. Ethical approval was obtained, and informed consent was secured from school authorities and participants' guardians.

Statistical Analysis- Analyses were conducted in R (v4.4.3) using the lavaan, semTools, and ggplot2 packages. Initial steps included data cleaning and descriptive analysis. Structural Equation Modeling (SEM) was used to test direct and mediated relationships between Classroom Anxiety and Perceived Parenting Styles via EPOCH dimensions. Moderation by academic level was assessed using multi-group SEM, comparing secondary (Classes IX-X) and senior secondary (Classes XI-XII) students. Moderated mediation was evaluated via bootstrapped indirect effects with 5,000 resamples and bias-corrected 95% confidence intervals. Model fit was assessed using standard indices: CFI and TLI $\geq .90$, and RMSEA and SRMR $\leq .08$. All tests were two-tailed, with significance thresholds at $p < .05$, $.01$, and $.001$. Figures were created using ggplot2 for visual clarity of key SEM results.

Results- Descriptive Statistics and Correlations-Descriptive statistics and Pearson's correlations among all variables are presented in Table 1. Classroom Anxiety was positively correlated with both Authoritarian ($r = .37$, $p < .01$) and Permissive Parenting ($r = .20$, $p < .01$), and negatively associated with Authoritative Parenting ($r = -.24$, $p < .01$), as well as with Optimism ($r = -.27$, $p < .01$), Connectedness ($r = -.19$, $p < .01$), and Happiness ($r = -.43$, $p < .01$). The EPOCH subscales were significantly interrelated, with the strongest correlation between Perseverance and Optimism ($r = .38$, $p < .01$). Gender showed modest associations with Optimism and Happiness, with females scoring slightly higher. Mediation Analyses (H2), Three SEM models were estimated to assess whether the five EPOCH dimensions mediated the relationship between Classroom Anxiety and Perceived Parenting Styles. For Authoritative Parenting, only Optimism ($\beta = 0.414$, $p < .001$) and Connectedness ($\beta = 0.368$, $p < .001$) were significant mediators. The direct path from anxiety remained significant ($\beta = -0.158$, $p < .001$), indicating partial mediation. Significant indirect effects were observed via Optimism ($\beta = -0.094$, $p < .001$) and Connectedness ($\beta = -0.067$, $p < .001$). For Authoritarian Parenting, anxiety had a strong direct effect ($\beta = 0.392$, $p < .001$), with only Optimism serving as a significant mediator ($\beta = -0.439$, $p < .001$; indirect $\beta = 0.100$, $p < .001$). Other EPOCH paths were non-significant.

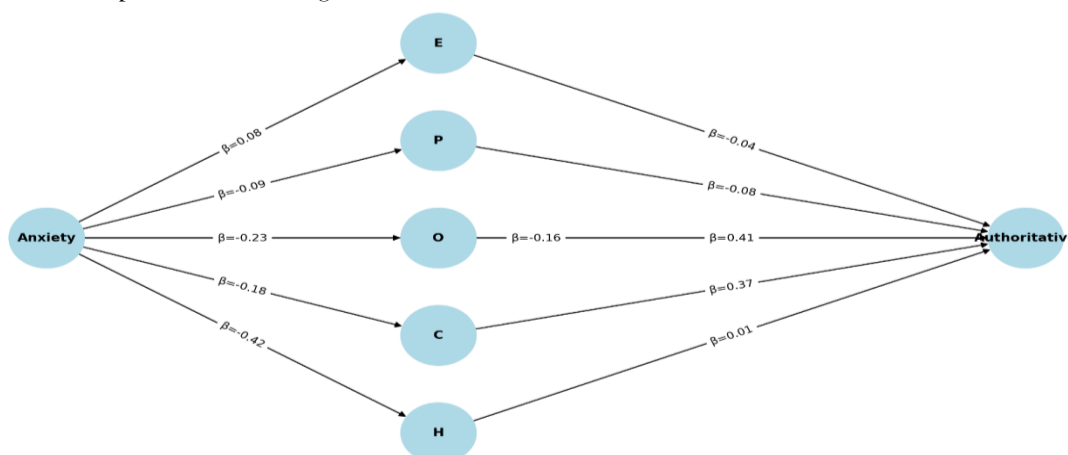


Figure 1

Structural Equation Model depicting direct and indirect effects of Classroom Anxiety on Perceived Authoritative Parenting via EPOCH well-being subscales. Standardized beta coefficients shown. *** $p < .001$.

For Permissive Parenting, anxiety again had a significant direct effect ($\beta = 0.225$, $p < .001$). Mediation occurred through multiple pathways: Perseverance ($\beta = 0.146$, $p = .004$), Optimism ($\beta = -0.139$, $p = .010$), Connectedness ($\beta = -0.416$, $p < .001$), and Happiness ($\beta = 0.115$, $p = .016$). Indirect effects through these subscales were all significant ($p < .05$), confirming partial mediation. These findings support H2, highlighting the mediating role of Optimism, Connectedness, and other well-being dimensions, especially for Permissive and Authoritative Parenting Styles.

Moderation and Moderated Mediation by Academic Level (H3 & H4)

Multi-group SEMs compared secondary (Classes IX–X) and senior secondary (Classes XI–XII) students across the three Parenting models. In Authoritative Parenting, Senior students showed a strong direct effect of anxiety ($\beta = -0.226$, $p < .001$), mediated by Optimism and Connectedness. For secondary students, the direct effect was non-significant; instead, Engagement ($\beta = 0.421$, $p = .003$), Perseverance, and Happiness predicted Authoritative Parenting, indicating an indirect pathway.

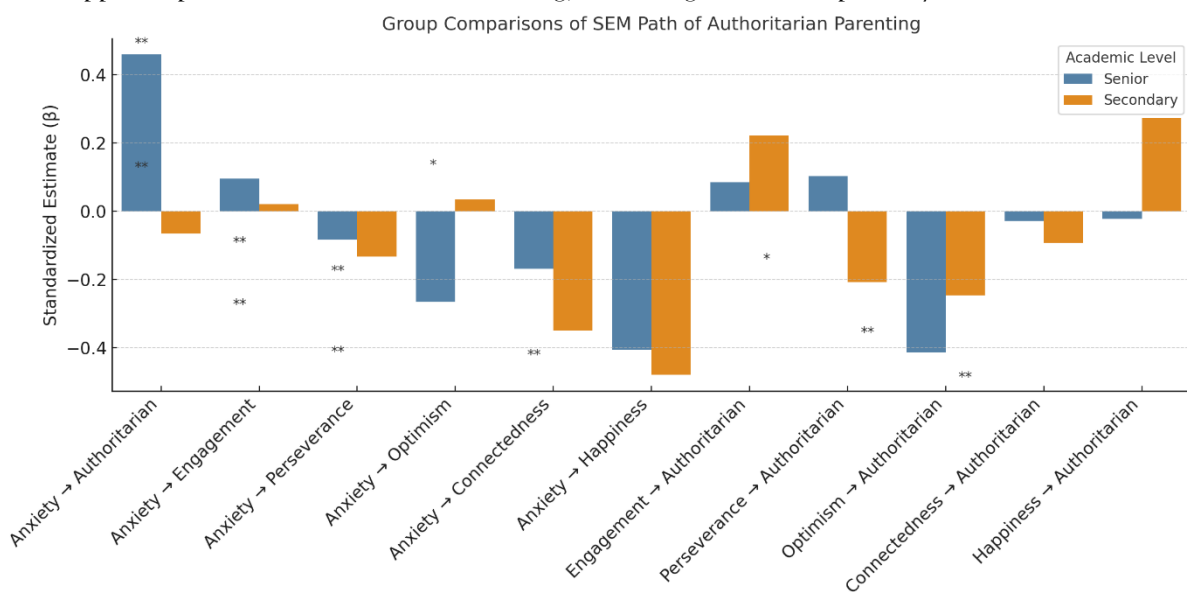


Figure 2

Multi-Group Structural Equation Model Comparing Senior Secondary and Secondary Students: Direct and Indirect Effects of Classroom Anxiety on Perceived Authoritative Parenting via EPOCH Subscales. Standardized beta coefficients are presented separately for each academic level. * $p < .01$, ** $p < .001$.

In Authoritarian Parenting, among seniors, anxiety directly predicted Authoritarian Parenting ($\beta = 0.460$, $p < .001$), with significant mediation via Perseverance and Optimism. Among juniors, the direct effect was absent, but Happiness ($\beta = 0.274$, $p = .038$) significantly predicted Authoritarian Parenting—suggesting a complex and unexpected indirect pathway. And in Permissive Parenting for seniors, anxiety had a robust direct effect ($\beta = 0.283$, $p < .001$) and was mediated by Perseverance, Optimism, Connectedness, and Happiness. Among juniors, the direct effect was non-significant, but Optimism ($\beta = 0.509$, $p = .008$) and Happiness ($\beta = -0.359$, $p = .011$) significantly predicted Permissive Parenting, although in opposite directions from the senior group.

Summary of Findings

Collectively, results support all four hypotheses. Classroom Anxiety had both direct and indirect associations with Perceived Parenting Styles (H1, H2). Optimism, Connectedness, and Happiness were consistent mediators across models. The strength and nature of these effects varied significantly by academic level, confirming both moderation (H3) and moderated mediation (H4). Senior secondary

students exhibited more direct effects of anxiety, while secondary students demonstrated more varied and developmentally different indirect effects through well-being.

DISCUSSION

The present study examined the direct, mediating, and moderating relationships between Classroom Anxiety and adolescents' perceptions of Parenting Styles, with adolescent well-being (as measured by the EPOCH model) as a mediator and academic level as a moderator. Findings supported all four hypotheses. Specifically:

H1 was supported: Classroom Anxiety was positively associated with Perceived Authoritarian and Permissive Parenting, and negatively with Authoritative Parenting.

H2 was partially supported: Well-being subscales, particularly Optimism, Connectedness, and Happiness, significantly mediated the effects of Classroom Anxiety on Perceived Parenting.

H3 and H4 were supported: Academic level moderated both direct and indirect relationships, with secondary and senior secondary students exhibiting distinct patterns of association.

The negative association between Classroom Anxiety and Authoritative Parenting aligns with previous findings suggesting that adolescents under stress are less likely to perceive their parents as supportive or structured (Fadel et al., 2022; Hayek et al., 2022). Conversely, elevated anxiety predicted perceptions of Authoritarian and Permissive Parenting, echoing literature linking stress and reduced parental warmth or increased inconsistency (Baumrind, 1991; Milevsky et al., 2007). The mediating role of Optimism and Connectedness confirms the EPOCH model's utility in explaining how positive traits buffer the psychological effects of anxiety (Kern et al., 2016; Maurer et al., 2021). Importantly, these mediators were not uniformly influential across Parenting Styles, suggesting that different well-being domains are salient in different relational contexts.

Academic level emerged as a robust moderator. Senior secondary students showed stronger direct associations between anxiety and Perceived Parenting Styles, suggesting more stable attribution patterns. In contrast, secondary students relied more on indirect pathways through well-being, indicating developmental differences in emotional regulation and perception (Yusoff & Hoesni, 2022).

This study advances the integration of ecological systems theory with positive psychology, offering a process-based model that situates adolescent perceptions within both classroom and family contexts. It emphasizes the importance of considering both emotional experiences and individual psychological strengths in understanding adolescent development.

Educators and mental health professionals should be attentive to the classroom environment as a site of emotional vulnerability. Intervention programs aimed at enhancing Optimism, Connectedness, and Happiness may indirectly improve adolescents' perceptions of Parenting, particularly in early adolescence. Tailored strategies by academic level are recommended, given the differing mechanisms observed.

Limitations and Directions for Future Research

Several limitations must be acknowledged:

The cross-sectional design limits causal inferences.

Self-reported perceptions of Parenting may be biased by mood or memory.

Cultural factors unique to the Indian education system may limit generalizability.

Future research should adopt longitudinal designs to establish temporal directionality and explore cross-cultural comparisons to examine the universality of the proposed model. Inclusion of parent-reported data could also enhance validity.

CONCLUSION

The present study provides novel insights into the psychological processes linking Classroom Anxiety to adolescents' perceptions of Parenting Styles. Through the EPOCH well-being framework, the findings reveal that adolescents experiencing greater Classroom Anxiety tend to perceive their parents as more Authoritarian or Permissive, and less Authoritative. These associations are partly explained by variations

in well-being traits—particularly Optimism, Connectedness, and Happiness—and differ significantly by academic level.

The study's implications suggest that fostering well-being traits in school settings may serve as a protective mechanism, not only for emotional resilience but also for strengthening family relationships during adolescence.

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Déclaration of Conflict Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Ethical Approval

All participants provided informed consent, with assurances of confidentiality, voluntary participation, and the right to withdraw at any time.

REFERENCES

1. 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>
2. Fadel, N. S. M., Ishar, M. I. M., Jabor, M. K., Ahyan, N. A. M., & Janius, N. (2022). Parenting Style on academic performance among secondary school students. *International Journal of Scientific Research and Advances*, 3(1), 1-10. <https://doi.org/10.30574/ijstra.2024.12.2.1294>
3. Hayek, J., Schneider, F., Lahoud, N., Tueni, M., & de Vries, H. (2022). Authoritative Parenting stimulates academic achievement, also partly via self-efficacy and intention towards getting good grades. *PLOS ONE*, 17(3), e0265595. <https://doi.org/10.1371/journal.pone.0265595ResearchGate+1PMC+1>
4. Kern, M. L., Benson, L., Steinberg, E. A., & Steinberg, L. (2016). The EPOCH measure of adolescent well-being. *Psychological Assessment*, 28(5), 586-597. <https://doi.org/10.1037/pas0000201PubMed+2m3ewb.research.uconn.edu+2ResearchGate+2>
5. Maurer, M., Daukantaitė, D., & Hoff, E. (2021). Testing the psychometric properties of the Swedish version of the EPOCH measure of adolescent well-being. *PLOS ONE*, 16(10), e0259191. <https://doi.org/10.1371/journal.pone.0259191ResearchGate+1m3ewb.research.uconn.edu+1>
6. Yusoff, S. R., & Hoesni, S. M. (2022). Validity study of the EPOCH Measure of Adolescent Well-being in Malaysia. *Psikohumaniora: Jurnal Penelitian Psikologi*, 7(1), 1-15. <https://doi.org/10.21580/pjpp.v7i1.20541Walisongo Journal>