

The Mediating Role of Family Climate and the Moderating Role of Family Structure in the Relationship between Academic Anxiety and Adjustment among Higher Secondary School Students

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Abstract: The present study examines the mediating role of family climate and the moderating role of family structure in the relationship between academic anxiety and adjustment among higher secondary school students in Imphal West, Manipur. The number of samples was 200. Higher Secondary School students were selected using simple random sampling. Standardised tools such as the Academic Anxiety Scale (Sharma & Shakir), the Adjustment Inventory for School Students (Sinha & Singh), and the Family Climate Scale (Shah) were used to collect data. Data were analysed using descriptive statistics, Pearson correlation analysis, and PROCESS macro analyses (Models 4 & 7). The results showed that the academic anxiety score was significantly negatively correlated with adjustment, which means that the students who had high academic anxiety scores had low adjustment scores in this study. The results of the mediation analysis indicated that family climate did not significantly mediate the relationship between academic anxiety and adjustment. In the moderation analysis, however, family structure was found to be a significant moderator in the relationship between academic anxiety and adjustment. The scores of the students in joint families had less negative correlation with academic anxiety, and joint family structure might be protective in relation to the adverse effects of academic anxiety. The results show that the family environment plays a crucial role in students' coping skills and adjustment under academic stress. The findings of the study have significant implications for education, school counsellors, policy makers and mental health workers in developing family-focused interventions and supports that will promote positive psychological functioning and adjustment in students.

Keywords: Academic Anxiety, Adjustment, Family Climate, Family Structure, Higher Secondary School Students

Introduction

In the current highly competitive educational landscape, amid pressures from schools and families, anxiety about exams and educational demands has become a common concern among school-going children and adolescents (Sreekumar & Kurup, 2020). Academic anxiety is defined as experiencing excessive worry, fear and tension about academic performance and examinations. This anxiety is likely to increase in socio-economic settings where educational

achievement is more closely linked to employment prospects and/or where parents hold high expectations for their children's education (Shaikh et al., 2018; Pillay & Bundhoo, 2011). Students in low- and middle-income environments face greater pressure to excel academically, in part due to insufficient resources, limited employment opportunities, and high societal expectations for academic success (Pillay & Bundhoo, 2011; Deb et al., 2015).

In this context, the term student adjustment refers to students' performance in school environments. It encompasses academic outcomes such as achievement and progression, as well as psychological factors such as motivation, self-concept, and engagement (Redd et al., 2001). Prior studies found that students who experienced high academic anxiety or math anxiety tend to have low academic performance (Gunawan & Menaldi, 2020), psychological distress and maladaptive coping behaviours such as avoidance of academic activities or math-related activities, which can worsen their problems over time (Guo & Liao, 2022). Empirical studies also reveal that overall adjustment of the students is negatively related to anxiety. Several studies have shown that there is a negative association between higher levels of anxiety. Lower levels of adjustment in home, social, emotional, and educational areas, and students' mental health reports indicate that anxiety-related issues can have a significant impact on functioning effectively in educational settings (Jahan, 2020; Schwartz & Kay, 2009).

As it pertains to parenting and adolescent development, family climate in this study is defined as the emotional and psychological climate within the family, influenced by parent-child relationships and parenting behaviours, specifically parenting acceptance/involvement, firm control, and psychological autonomy encouragement (Steinberg et al., 1990). Family climate can be seen through various dimensions, ranging from conflict and violence to support, cohesion, and the expression of emotions, indicating whether family relationships are tense and conflictive or mutual, with comprehension and encouragement (Almeida & Nunes, 2024). Empirical evidence among university students indicates that positive family climates of support and cohesiveness positively influence life satisfaction, while conflictive and violent family climates negatively influence it (Almeida & Nunes, 2024).

Family structure and the quality of family support are significant correlates of academic stress, mental health, and adolescents' adjustment in India (Agarwal & Bahadur, 2023; Alam, 2017; Kumar, 2022). The family, as the key institution of socialisation, offers emotional, social and instrumental support to adolescents, which affects their coping skills in academic tasks. Studies indicate that adolescent students who receive greater emotional and school support from their family tend to have lower school stress and stronger coping skills (Kumar, 2022). A recent study conducted in Ranchi found a significant difference in academic stress between adolescents in nuclear and joint families, suggesting that family structure influences academic stress (Ruby & Kumari, 2025). Similarly, other Indian studies have found that adolescents of joint families have healthier mental health and positive adjustment patterns as compared with their nuclear family counterparts. It has been suggested that these benefits stem from the emotional support, care, shared responsibilities, and opportunities for emotional expression afforded by extended families (Agarwal & Bahadur, 2023; Alam, 2017). In sum, it

can be inferred that the multigenerational joint family environment may offer adolescents in India a protective environment, helping prevent academic stress and maladjustment within the family.

There is also evidence that family support is important in the stress–anxiety relationship. Tran et al. (2018) revealed that perceived family support was the moderating variable between the interaction of financial stress and general anxiety, especially in male college students. Research done in an Indian context has also confirmed that academic anxiety is negatively related to academic achievement and adjustment. Jahan (2020) found a significant negative correlation between anxiety and educational achievement with students in schools; Hashmi and Shakir (2023) found that academic anxiety was negatively correlated with academic resilience, and female students faced a high level of academic anxiety as compared to male students.

The connection between academic anxiety, adjustment and the variables related to family is crucial for understanding the effective supports and intervention programmes for adolescents in India. Few studies have investigated the combined mediating role of family climate and the moderating role of family structure between academic anxiety and adjustment. Although previous studies have examined these three individually, a combined study has yet to be conducted. The present study aims to fill this void in the literature, investigate these relationships, and offer practical implications for teachers, policymakers, and mental health professionals who will work to enhance students' resilience and adjustment to academic difficulties.

Literature Review

Academic anxiety and effects

Academic anxiety is an emotional response characterised by worry, tension, and fear related to academic requirements, exams, and academic performance. Academic anxiety is closely related to examination pressure, competition for higher education, and high parental and societal expectations in the Indian context (Deb et al., 2015). Academic anxiety has been previously linked to low coping skills, problems in school and poor academic outcomes in students (Patel & Patel, 2020). Students who exhibit high levels of academic anxiety may also adopt other dysfunctional coping strategies, such as procrastination, distracting themselves, and avoiding academic work, which can also disrupt their academic functioning and adjustment (Gunawan & Menaldi, 2020).

Adjustment

Adjustment is the process by which students adjust to the academic, social and emotional demands of the educational environment. School adjustment is associated with students' achievement, participation in school activities, relationships with others, and overall psychosocial functioning. Adjustment problems have been linked to lower school performance, low self-esteem and decreased involvement in school (Redd et al., 2001). Higher academic anxiety was also found to be related to poorer academic performance and

higher avoidance of academic activities, implying that academic anxiety might be associated with less adjustment in time (Guo & Liao, 2022).

India's Family Structure

Family structure has been studied in India with respect to adolescents' mental health and adjustment. Some studies show that, in general, adolescents in joint families are better adjusted emotionally and have better mental health (Alam, 2017; Agarwal & Bahadur, 2023; Kochukrishnakurup et al., 2016), though this may vary by context and adjustment dimension. Some studies also indicated that there was a positive relationship between family structure and academic stress, with adolescents from nuclear families reporting high academic stress (Ruby & Kumari, 2025). In general, the literature suggests that family support and family structure play a significant role in adolescents' well-being, with this role varying across contexts (Deb et al., 2010; Agarwal & Bahadur, 2023).

Role of Family Support – mediator's role.

Family support is one of the factors that have been identified as being important in the relationship between stress, anxiety and adjustment. There is some evidence that family support is protective against the impact of stress on anxiety for students (Tran et al., 2018). Family members' emotional support and encouragement, guidance and academic assistance can help students cope better with academic pressures and challenges. In addition, greater family support is also associated with greater adjustment and emotional well-being in students who perceive it (Yieng et al., 2019). These results indicate that supportive family domains could be a mediator of academic anxiety and adjustment, because they decrease stress and increase coping.

Parenting Styles and Family Functioning as Moderators of the Relationship between Identity and Psychologists' Perceptions.

Parenting styles and the overall family functioning could moderate the association between academic anxiety and student adjustment. Previous studies have shown that authoritative parenting, which is defined as warm, responsible, supportive, and somewhat controlling, is protective. Authoritative parenting has been reported to mitigate the impact of adjustment difficulties resulting from academic anxiety by fostering emotional well-being, self-esteem, coping skills and resilience in adolescents (Love & Thomas, 2014; Steinberg et al., 1993). By contrast, the authoritarian parenting style and the permissive parenting style have been linked to less desirable adjustment outcomes. Permissive parenting is associated with reduced self-esteem and increased psychological distress, and authoritarian parenting might result in higher psychological distress and anxiety in students (Love & Thomas, 2014; Adubale, 2017).

Likewise, positive family functioning, including cohesion, adaptability, open communication, and emotional support, might mitigate the negative impact of anxiety on adjustment behaviours (Doty et al., 2018). These types of family environments promote the expression of emotions, effective problem-solving, and healthy conflict resolution among family members, and they add to adolescents' resilience and coping abilities in the face of academic stress (Rigby, 1993).

Empirical Evidence in the Indian Context

Research in India has consistently pointed towards the need for parent and family support in minimising academic anxiety and adjustment of students. Educational stress among adolescents can be substantially reduced by family-provided emotional and academic support (Kumar, 2022). Another aspect of parental involvement identified as beneficial is parenting styles that help children cope and be resilient, especially in very competitive educational contexts (Deb et al., 2010). Simultaneously, a lot of expectation/pressure from parents towards the achievement of their children may lead to high levels of anxiety among students, particularly while taking examinations and under competition. (Deb et al., 2010).

In India, which also has a nuclear family structure, the impact of family structure on adolescent well-being is unique, given the coexistence of joint and nuclear family forms. It is suggested that adolescents belonging to joint families are likely to get more emotional and social support and hence may reduce academic anxiety as compared to those from nuclear families. (Ruby & Kumari, 2025). Research with city youth has also found that adolescents who are emotionally and educationally supported by their family experience less stress (Kumar, 2022). Additionally, academic resilience is negatively associated with academic anxiety, indicating that academically resilient students are better able to adapt to academic challenges and stressors (Hashmi & Shakir, 2023).

Objectives of the Study

1. To examine the relationship between academic anxiety and adjustment among higher secondary school students.
2. To investigate the mediating role of family climate in the relationship between academic anxiety and adjustment among higher secondary school students.
3. To analyse the moderating role of family structure in the relationship between academic anxiety and adjustment among higher secondary school students.

Hypotheses of the Study

1. H1: There is a significant negative relationship between academic anxiety and adjustment among higher secondary school students.
2. H2: Family climate significantly mediates the relationship between academic anxiety and adjustment among higher secondary school students.
3. H3: Family structure significantly moderates the relationship between academic anxiety and adjustment among higher secondary school students.

Methodology

Research Design: In the current study, a cross-sectional quantitative research design was adopted to examine the mediating role of family climate and the moderating role of family structure in the relationship between academic anxiety and adjustment among higher secondary school students in Imphal West, Manipur.

Participants: Participants were selected through simple random sampling from selected higher secondary schools in Imphal West, Manipur, comprising 200 students aged 16 to 18 years.

Instruments

Academic Anxiety Scale: The Academic Anxiety Scale (AAS-SSSM) was developed by Sonal Sharma and Mohd. Shakir's (2019) scale was used to assess Academic Anxiety among students. The scale comprises 48 items with a Likert-type response format.

Adjustment Inventory for School Students: The Adjustment Inventory for School Students (AISS-SS), developed by A.K.P. Sinha and R. P. Singh (2005), was used to assess students' adjustment in the academic, social, and emotional spheres. There are 60 items in stock.

Family Climate Scale: The Family Climate Scale, developed by Beena Shah (2006), was used to assess family climate dimensions, including family support, family cohesion, and family communication. This scale has 90 items.

Participants' details: Age, gender, family structure, and parents' educational status and occupation were collected using a demographic information sheet.

Data Collection: Self-administered questionnaires were used, and data were collected in the classroom. Data collection was preceded by requesting permission from the school authorities. Participants have all provided informed consent and have stated that there will be no compromise of confidentiality or anonymity of their responses. The study adhered to ethical principles in conducting research with human participants.

Analysis of collected data: SPSS 21 was used to analyse the collected data. Descriptive statistics, such as the mean and standard deviation, were calculated to describe the study variables. Pearson product-moment correlation analysis was used to see the relationship between academic anxiety and adjustment. PROCESS Macro Model 4 was used for mediation analysis, and PROCESS Macro Model 7 was used for moderation analysis to present the moderating effect of family structure on the relationship between academic anxiety and adjustment.

Findings and Results

Table 1: Descriptive Statistics of Academic Anxiety, Adjustment, and Family Climate

| Variable | Mean | SD | Joint Family (Mean) | Nuclear Family (Mean) |
|------------------|--------|--------|---------------------|-----------------------|
| Academic Anxiety | 160.18 | 18.623 | 157.69 | 162.39 |
| Adjustment | 39.61 | 8.225 | 40.98 | 38.39 |
| Family Climate | 160.45 | 18.873 | 159.51 | 161.28 |

The descriptive statistics for all the major variables in this study, including academic anxiety, adjustment, and family climate, are shown in Table 1. The overall mean score for academic anxiety was 160.18 (SD = 18.62). The Mean scores for students from nuclear and joint families were 162.39 and 157.69, respectively, on the academic anxiety scale, and the results showed that students from nuclear families had slightly higher academic anxiety scores than those from joint families.

Overall, the mean adjustment score was 39.61 (SD = 8.23). The adjustment scores for students from joint families (M = 40.98) were higher than those for students from nuclear families (M = 38.39), indicating relatively better adjustment among students from joint families.

The mean family climate score was 160.45 (SD = 18.87). Nuclear family students had marginally higher family climate scores (M = 161.28) than did joint family students (M = 159.51). Generally, the results suggest differences in key study variables between joint and nuclear family settings.

Correlation Analysis between Academic Anxiety and Adjustment:

Table 2: Correlation Analysis between Academic Anxiety and Adjustment

| | | Academic Anxiety | Adjustment |
|------------------|---------------------|------------------|------------|
| Academic Anxiety | Pearson Correlation | 1 | -.650** |
| | Sig. (2-tailed) | | .000 |
| | N | 200 | 200 |
| Adjustment | Pearson Correlation | -.650** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 200 | 200 |

**Correlation is significant at the 0.01 level (2-tailed).

Table 2 presents the Pearson correlation results for academic anxiety and adjustment among higher secondary school students. Results show that academic anxiety- adjustment is negatively and highly correlated ($r = -.650, p < .01$). This is because increased academic anxiety relates to reduced adjustment among students.

The result obtained confirmed Hypothesis 1 (H1), which hypothesised that there would be a significant negative relationship between academic anxiety and adjustment. This inverse relationship would indicate that students with high academic anxiety have a greater likelihood of having difficulties with academic, emotional and social adjustment.

Mediation Analysis (Family Climate as Mediator)

Table 3: Mediation Analysis Showing the Role of Family Climate

| Path | Coefficient (β) | SE | t | p-value |
|---|-----------------|--------|----------|---------|
| Academic Anxiety → Family Structure (a) | -0.0875 | 0.0718 | -1.2191 | 0.2242 |
| Family Climate → Adjustment (b) | -0.0113 | 0.0237 | -0.4788 | 0.6326 |
| Direct Effect Academic Anxiety → Adjustment (c) | -.2879 | .0240 | -11.9983 | .0000 |
| Indirect Effect (a × b) | 0.0010 | 0.0029 | - | - |

The mediation effect of family climate on the relationship between academic anxiety and adjustment among higher secondary school students was then tested using PROCESS Model 4 (Hayes, 2022).

Results indicated that academic anxiety level did not have a statistically significant effect on the family climate ($\beta = -0.0875$, $SE = 0.0718$, $t = -1.2191$, $p = 0.2242$). This means there were no significant differences in students' perceptions of family climate across levels of academic anxiety.

Similarly, the effect of family climate on adjustment was also found to be non-significant ($\beta = -0.0113$, $SE = 0.0237$, $t = -0.4788$, $p = 0.6326$). This indicates that family climate was not a significant predictor of adjustment when taking into account academic anxiety.

The direct path of academic anxiety on adjustment, however, was statistically significant ($\beta = -0.2879$, $SE = 0.0240$, $t = -11.9983$, $p < .001$), indicating that higher academic anxiety significantly predicts lower adjustment.

This effect of academic anxiety on adjustment via family climate was not statistically significant (Effect = 0.0010, BootSE = 0.0029, 95% CI [-0.0031, 0.0089]). The mediation effect was not supported as the confidence interval contained zero.

In general, it shows that family climate is not a mediator between academic anxiety and adjustment of higher secondary school students. Instead, academic anxiety seems to have a direct effect on adjustment primarily. Thus, Hypothesis 2 (H2) was not supported.

Moderation Analysis (Family Structure as Moderator)

Table 4: Moderation Analysis Showing the Moderating Role of Family Structure

| Predictor | Coefficient (β) | SE | t | p-value |
|---------------------------------|-----------------|------|-------|---------|
| Academic Anxiety (X) | -0.44 | 0.08 | -5.50 | <0.01 |
| Family Structure (Moderator, M) | 0.41 | 0.09 | 4.56 | <0.01 |

| | | | | |
|--------------------------|------|------|------|-------|
| X × M (Interaction Term) | 0.19 | 0.06 | 3.17 | 0.002 |
|--------------------------|------|------|------|-------|

The results of the moderation analysis of the relationship between academic anxiety and adjustment among higher secondary school students, with family structure as the moderator, are presented in Table 4.

Results showed that the main effect of academic anxiety on adjustment was statistically significant, with a negative β of -0.44 ($p < .01$), indicating that higher academic anxiety was associated with lower adjustment. The family structure also had a significant, positive direct effect on adjustment ($\beta = 0.41$; $p < .01$), indicating that students from joint families showed greater adjustment than those from nuclear-family backgrounds.

The interaction between academic anxiety and family structure was most important and was statistically significant ($\beta = 0.19$, $p = 0.002$). This validates the moderating effect of family structure in the academic anxiety – adjustment relationship. Results indicated that academic anxiety is less detrimental to the adjustment of students from a joint family. That is, it seems that living in a joint family would buffer or protect from the negative effects of academic anxiety.

The findings suggest that joint-family students can receive more emotional support, shared responsibilities, and better interpersonal relationships, which can help them cope with academic stress. However, if a student comes from a one-family household, he or she might be at a higher-risk for psychological problems caused by academic anxiety.

Hence, Hypothesis 3 (H3) was supported, and it revealed that the relationship between academic anxiety and adjustment is significantly moderated by family structure, with joint family structure as protective.

Discussion

In the present study, the mediating role of family climate and the moderating role of family structure on academic anxiety and adjustment among higher secondary school students in Imphal West, Manipur have been examined. The results are significant in terms of understanding the factors associated with academic anxiety and family, which impact adjustment and add even more to the literature on adjustment in the adolescent mental health context.

It was discovered that there was a significant negative correlation between academic anxiety and adjustment ($r = -0.650$, $p < .01$), supporting the first hypothesis (H1). This discovery is an indicator that pupils who have a higher degree of academic anxiety are more likely to suffer in relation to academic, social and emotional adjustment. This finding supports the previous research finding that indicates academic anxiety impacts students' adjustment, psychological well-being and their academic functioning (Singh & Mahato, 2015; Jahan, 2020). Academic anxiety can negatively affect attention, emotional upset and avoidance behaviour, and disrupt students' effective adjustment to the academic and social stresses. The

results thus highlight the need to recognise and address academic anxiety in schools to facilitate healthy school adjustment and improve students' academic outcomes.

The mediation analysis results showed that, contrary to the second hypothesis (H2), family climate did not statistically mediate the relationship between academic anxiety and adjustment (Indirect Effect = 0.0010, BootSE = 0.0029). While family climate has been identified as one of the factors that has a significant relationship with emotional well-being and life satisfaction, as found in previous research, the present findings suggest that family climate alone may not be enough to explain the mechanism through which academic anxiety can impact the adjustment among higher secondary school students (Morales Almeida & Nunes, 2024). One possible explanation is that other contextual factors, such as coping skills, peer relationships, school climate, and teachers' support, affect adolescent adjustment. However, it is also conceivable that students with academic anxiety problems are having their adjustment problems despite the differences that were found in perceived family climate. Thus, although family climate is still a significant variable to consider in the development of adolescents, in the present sample, this factor may not directly intervene in the relationship between academic anxiety and adjustment.

The results concerning the third hypothesis (H3) showed the moderating effect of family structure on the relationship between academic anxiety and adjustment. The significant interaction effect ($\beta = 0.19$, $p = 0.002$) indicates that the effect of academic anxiety on adjustment differs across family structures. More specifically, students in a joint family had a less negative association of their academic anxiety with their adjustment than students in a nuclear family. The results of this finding indicate that the family joint system could serve as a protection mechanism from the impact of academic anxiety. This finding supports earlier literature indicating that extended families and cohesive family relationships offer a more effective emotional and social support network that helps adolescents cope with stress (Strutzenberg, 2018). Joint family systems can have more than one caregiver, more responsibilities being shared, stronger emotional bonds, and shared problem-solving, which can afford students a higher level of security and belonging. Such supportive environments can help alleviate psychological distress caused by academic stressors and promote healthy adjustment.

However, it seemed that students of nuclear families were more susceptible to the negative impacts of academic anxiety. Compared to joint families, nuclear family setups may offer you relatively lower feelings and social support assets, potentially leading to students being more at risk of stress and problems with adjustment. This discovery suggests that family support should be strengthened, especially for students from nuclear families. Children and young people may benefit from wellbeing/stress management training, school-based counselling and guidance, and family-based learning programmes, which could help them learn more effective coping mechanisms and adjust better in the school environment.

Conclusion

Thus, the present study aimed to investigate the association between academic anxiety and adjustment among higher secondary school students in Manipur state, Imphal West District, with special attention to the mediating role of family climate and the moderating role of family structure. Results showed a significant inverse correlation between academic anxiety and adjustment, suggesting that increasing academic anxiety is related to decreasing adjustment in students.

The results of the mediation analysis indicated that family climate did not significantly mediate the relationship between academic anxiety and adjustment. Family structure, however, turned out to be a noteworthy moderator, and the results indicated that family structure (joint family) had a protective buffering effect, which buffered the negative effect of academic anxiety. Students from joint families reported managing academic stress more effectively and being better adjusted than those from nuclear families. This indicates the importance of family context in adolescents' capacity to cope with academic pressures and adjust to the demands of the education system.

There are limitations to the study. Because of the cross-sectional design, it was not possible to establish causal relationships among the variables. Furthermore, these study measures were self-reported and were subject to response and/or social desirability bias. Also, the sample was confined to higher secondary school students in Imphal West, Manipur, which may limit the generalisability of the study's results to other parts of the state and to other students.

However, the study offers practical takeaways for teachers, administrators, educators, and school counsellors and mental health workers. Schools should have programmes that help to decrease anxiety in the educational context and boost family engagement, particularly in the case of children from nuclear families. Parental education programmes, counselling services, stress management interventions, and school–family collaboration initiatives can help students develop healthier coping responses and achieve better adjustment outcomes.

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