

Family Environment and Mental Health of Tribal and Non-Tribal Adolescents in Bihar: A Gender-Based Analysis

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Abstract

The family environment plays an essential role in shaping adolescents' emotional and psychological development during the transitional phase of adolescence. The present study examined the relationship between family environment and mental health among tribal and non-tribal adolescents in Bihar, with special reference to gender differences. The study was conducted on a sample of 200 adolescents aged 14–19 years, comprising equal representation of boys and girls as well as tribal and non-tribal participants. The Family Environment Scale developed by Bhatia and Chadha (1993) was used to assess family climate, whereas the Mental Health Battery developed by Singh and Sen Gupta (2000) was employed to measure mental health dimensions. Emotional stability, adjustment, self-concept, autonomy, and security were assessed as components of mental health. Descriptive statistics, Pearson's correlation, and Multivariate Analysis of Variance (MANOVA) were used for data analysis. The findings indicated that family environment was positively and significantly associated with all dimensions of mental health. Significant effects of cultural background and gender were observed on several mental health dimensions. The interaction effect between gender and cultural background was also significant, particularly in relation to autonomy. Non-tribal adolescents and girls demonstrated comparatively better mental health outcomes than tribal adolescents and boys. The findings highlight the importance of supportive family environments and culturally sensitive interventions for promoting adolescent mental health.

Keywords: Family environment, mental health, adolescents, tribal and non-Tribal, gender differences, MANOVA

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Adolescence represents a significant transitional phase marked by rapid biological changes, emotional variability, and psychological restructuring. During this period, individuals gradually develop a stable sense of self-identity, emotional control, interpersonal competence, and effective coping strategies, all of which are integral components of mental health. Psychological well-being in adolescence plays a dual role, influencing immediate adjustment as well as shaping mental health outcomes in adulthood. In present-day Indian society, increasing academic pressure, growing socio-economic inequalities, and evolving family patterns have further amplified concerns related to adolescents' mental health.

Among the multiple factors influencing adolescent mental health, the family environment occupies a central position. The family serves as the primary setting for emotional socialization, interpersonal interaction, and the transmission of values and norms. A family environment characterized by warmth, cohesion, and mutual support promotes emotional security, self-confidence, and resilience. Conversely, family settings marked by conflict, neglect, or emotional deprivation may negatively affect emotional stability, increase anxiety, and contribute to maladjustment among adolescents.

The impact of the family setting becomes increasingly complex within culturally heterogeneous settings. In Bihar, particularly in districts such as West Champaran, adolescents grow up in diverse socio-cultural contexts shaped by traditional customs, economic constraints, and differential access to educational resources. Tribal families often emphasize collective values and close interpersonal relationships; however, they simultaneously face challenges such as poverty, limited institutional support, and social marginalization. These contextual constraints may place tribal adolescents at a heightened risk for psychological difficulties when compared to their non-tribal counterparts.

Gender further moderates mental health outcomes during adolescence. Variations in parental expectations, cultural prescriptions, and socialization practices often lead to distinct psychological experiences for boys and girls. Girls are generally encouraged to express emotions and develop relational sensitivity, whereas boys are often socialized to display independence and emotional restraint. These gender-specific socialization patterns interact with family environment and cultural background, resulting in nuanced differences in mental health outcomes.

Although family environment, gender, and cultural background are known to influence adolescent mental health, empirical research that examines their combined effects in the context of West Champaran district is scarce. Earlier research has largely concentrated on urban samples or has examined individual variables in isolation, with limited attention to their interactive effects. This study attempts to fill this gap by using standardized psychological instruments and multivariate statistical techniques to provide a comprehensive insight into the combined effects of these factors on adolescent mental health.

Review of Literature

Mental health during adolescence has emerged as a major area of psychological and educational research because adolescence represents a critical developmental stage characterized by emotional, social, and cognitive transitions. Researchers have consistently emphasized that the family environment significantly contributes to the psychological adjustment and emotional development of adolescents.

Sharma (2016) reported that adolescents growing up in supportive and emotionally stable family environments demonstrated better emotional adjustment and psychological stability compared to adolescents exposed to family conflict and neglect. Similarly, Kapoor

and Singh (2018) found that family cohesion, parental warmth, and open communication positively influenced adolescents' self-concept and overall mental health.

Previous studies have also highlighted the influence of gender on mental health outcomes. Rani and Verma (2017) observed that adolescent girls generally exhibit greater emotional sensitivity and interpersonal awareness, whereas boys tend to demonstrate higher independence and autonomy. Sharma and Joshi (2021) further reported that girls often develop stronger emotional competence and self-awareness due to greater involvement in family interactions and emotional socialization processes.

Research focusing on tribal adolescents suggests that socio-economic disadvantage, cultural marginalization, and limited access to educational and health facilities negatively influence their psychological well-being. Xaxa (2015) emphasized that tribal communities in India frequently experience social exclusion and economic deprivation, which increase psychological stress among adolescents. Kumar and Prasad (2019) similarly reported that tribal adolescents scored lower on emotional stability and adjustment when compared to non-tribal adolescents in Bihar.

The role of family support among tribal populations has also been widely recognized. Mishra and Tiwari (2020) found that emotionally supportive family environments significantly enhanced self-concept and reduced emotional insecurity among tribal adolescents. Singh and Gupta (2021) further concluded that parental warmth and family cohesion served as strong predictors of positive mental health among both tribal and non-tribal adolescents.

Recent studies have additionally emphasized the importance of cultural context in shaping adolescent autonomy and emotional development. Kumar and Sinha (2023) observed that autonomy development differs across cultural settings and is strongly influenced by

parental expectations, educational exposure, and societal norms. Tribal adolescents often experience collective decision-making patterns within families, whereas non-tribal adolescents are increasingly encouraged toward independent thinking and self-expression.

Despite the growing body of literature, most previous studies have examined family environment, gender, or cultural background independently. Very limited research has explored the combined interaction effects of gender and cultural background on adolescent mental health, particularly in the context of Bihar and West Champaran district. Therefore, the present study attempts to bridge this gap by examining the relationship between family environment and mental health among tribal and non-tribal adolescents using multivariate statistical analysis.

Research Objectives

1. To evaluate the quality and characteristics of family environment and its association with mental health among adolescents.
2. To investigate how mental health dimensions vary according to gender.
3. To compare the mental health status of tribal and non-tribal adolescents.
4. To explore the combined influence of gender and cultural background on adolescent mental health outcomes.

Research Hypotheses

1. A supportive family environment is likely to be positively related to various aspects of adolescent mental health.
2. Gender differences are expected to significantly affect mental health dimensions.

3. Tribal and non-tribal adolescents will differ significantly in mental health dimensions.
4. The interaction between gender and cultural background is anticipated to have a significant impact on adolescents' mental health.

Methods

Sample Selection

The research sample consisted of 200 adolescents, aged 14–19 years, selected from secondary schools in Bihar. The participants were balanced by gender, including an equal number of boys and girls (100 boys and 100 girls) and cultural background (100 tribal and 100 non-tribal adolescents), ensuring a balanced representation for meaningful comparative analyses.

Tools Used

Family Environment Scale (Bhatia & Chadha, 1993)

The Family Environment Scale developed by Bhatia and Chadha was employed to assess adolescents' perceptions of their family climate. The scale evaluates the overall quality of interpersonal relationships.

Dimensions assessed include: Cohesion: emotional bonding and mutual support, expressiveness: freedom to express feelings and opinions, conflict: degree of tension and disagreement within the family, acceptance and care: emotional warmth and parental understanding, independence: encouragement of autonomy and self-decision making

The scale has been standardized on Indian populations and demonstrates satisfactory reliability and validity, making it suitable for culturally diverse samples. The instrument demonstrated reliability coefficients ranging between 0.72 and 0.88, reflecting satisfactory internal consistency. Its validated structure ensures that it can be appropriately applied to adolescent samples from diverse cultural backgrounds.

Mental Health Battery (A. K. Singh & Alpana Sen Gupta, 2000)

Mental health was assessed using the Mental Health Battery developed by A. K. Singh and Alpana Sen Gupta, a widely used Indian psychological instrument.

Dimensions assessed: The Mental Health Battery measures five major dimensions of mental health, namely emotional stability, adjustment, self-concept, autonomy, and security–insecurity. These dimensions collectively provide a comprehensive assessment of an adolescent's psychological well-being and overall mental health.

Higher values correspond to better mental health outcomes. The tool possesses strong reliability and content validity, making it appropriate for adolescent populations across different cultural contexts. The tool reports reliability coefficients ranging from 0.73 to 0.86 and possesses strong content validity.

Custom-Designed Personal Data Instrument

A self-constructed Personal Data Instrument was employed to gather essential background information from the participants. The sheet collected details such as age, gender, class level, cultural background (tribal/non-tribal), family type, and parental educational qualifications. The study instrument was used only to support classification and descriptive

analysis. Data obtained through this schedule were not included in the psychological scoring process and were carefully handled to ensure the confidentiality of all participants.

Procedure

Authorization to carry out the study was received from the relevant institutional authorities for data. The instruments were administered in classroom settings under standardized conditions. Participants were assured of confidentiality, and instructions were clearly explained. Responses were scored according to manual guidelines.

Statistical Analysis

Appropriate statistical techniques, including descriptive statistics, Pearson's correlation, and Multivariate Analysis of Variance (MANOVA), were applied for data analysis. Gender and cultural background were treated as independent variables, while various dimensions of mental health served as the dependent variables.

Results

Table 1

Demographic Profile of the Sample (N = 200)

Variable	Category	N	Percentage
Gender	Boys	100	50.0
	Girls	100	50.0
Cultural Background	Tribal	100	50.0
	Non-Tribal	100	50.0
Age Group	14–16 years	98	49.0
	17–19 years	102	51.0

Table 1 summarizes the background characteristics of the 200 adolescents who participated in the study. A deliberate effort was made to maintain proportional representation across major demographic variables in order to strengthen the validity of group-wise comparisons.

With respect to gender composition, the sample was evenly divided, comprising 100 boys and 100 girls, thereby ensuring balanced gender representation. Similarly, cultural background was equally distributed, with half of the participants drawn from tribal communities and the remaining half from non-tribal groups, facilitating a clear comparison between these populations.

Age-wise distribution of the participants also reflected near-equal distribution, as 98 adolescents fell within the 14–16 years age bracket, while 102 belonged to the 17–19 years category. Taken together, this balanced demographic structure provides an appropriate and reliable base for examining variations in family environment and mental health across gender and cultural contexts.

Table 2

Mean and Standard Deviation of Family Environment and Mental Health Dimensions

Group	Family Environment M(SD)	Emotional Stability	Adjustment	Self-Concept	Autonomy	Security
Tribal Boys (n=50)	71.8 (6.9)	34.6 (5.1)	36.2 (4.8)	33.9 (4.6)	32.8 (4.9)	35.1 (5.0)
Tribal Girls (n=50)	73.9 (7.1)	35.8 (4.9)	37.5 (4.5)	35.2 (4.4)	33.6 (4.7)	36.4 (4.8)

Non-Tribal Boys (n=50)	78.2 (6.4)	38.9 (4.6)	40.3 (4.2)	38.1 (4.1)	36.9 (4.4)	39.2 (4.6)
Non-Tribal Girls (n=50)	80.1 (6.1)	40.1 (4.3)	41.6 (4.0)	39.5 (3.9)	38.2 (4.1)	40.6 (4.3)

Table 2 depicts the mean scores and standard deviations of family environment and various mental health dimensions across four groups: tribal boys, tribal girls, non-tribal boys, and non-tribal girls.

Family Environment: The analysis of mean scores revealed that non-tribal girls reported the highest family environment scores ($M = 80.1$), followed by non-tribal boys ($M = 78.2$), tribal girls ($M = 73.9$), and tribal boys ($M = 71.8$). The emerging pattern reveals that adolescents from non-tribal backgrounds perceive their family environment more positively compared to their tribal counterparts.

When examining mental health dimensions such as emotional stability, adjustment, self-concept, autonomy, and security, non-tribal adolescents consistently scored higher than tribal adolescents. Additionally, girls generally outperformed boys across both cultural groups. Tribal boys recorded the lowest scores, while non-tribal girls achieved the highest levels across all mental health measures.

The evidence indicates that both cultural background and gender significantly influence adolescent mental health, with non-tribal and female adolescents showing comparatively better mental health outcomes.

Table 3

Correlation between Family Environment and Mental Health Dimensions (N = 200)

Variable	Emotional Stability	Adjustment	Self-Concept	Autonomy	Security
Family Environment	0.48**	0.52**	0.46**	0.41**	0.50**

p < .01

Table 3 presents the Pearson correlation results depicting the association between family environment and different dimensions of adolescent mental health. The analysis revealed a clear positive association between family environment and all assessed dimensions of mental health. Family environment showed meaningful correlations with emotional stability ($r = .48$), adjustment ($r = .52$), self-concept ($r = .46$), autonomy ($r = .41$), and security ($r = .50$). All obtained correlation coefficients were found to be statistically significant at the 0.01 level. These results suggest that adolescents experiencing a supportive and emotionally conducive family setting are more likely to demonstrate greater emotional balance, improved adjustment, a stronger sense of self, higher levels of autonomy, and enhanced feelings of security. These findings underscore the crucial role of a positive family environment in promoting adolescents' psychological well-being.

Table 4

MANOVA Summary Showing the Effects of Gender, Cultural Background, and Their Interaction on Overall Mental Health

Source	Wilks' Lambda	F	df	p
Gender	0.942	2.38	5, 192	.041
Cultural Background	0.861	6.19	5, 192	.000
Gender × Cultural Background	0.915	3.53	5, 192	.005

The study analyzed the combined effects of gender, cultural background, and their interaction on various dimensions of adolescent mental health. Gender was observed to have a significant effect (Wilks' $\lambda = .942$, $p < .05$), showing that boys and girls differ collectively across mental health measures. Cultural background demonstrated a highly significant multivariate effect (Wilks' $\lambda = .861$, $p < .001$), highlighting notable differences between tribal and non-tribal adolescents. Furthermore, the interaction between gender and cultural background was also significant (Wilks' $\lambda = .915$, $p < .01$), suggesting that gender-based differences in mental health vary depending on cultural context. Overall, these MANOVA findings confirm that adolescent mental health is jointly influenced by gender, cultural background, and the interaction between the two factors.

Table 5

Tests of Between-Subjects Effects (Univariate ANOVA)

Dependent Variable	Source	F	df	P
Emotional Stability	Cultural Background	18.42	1,198	.000
Adjustment	Cultural Background	21.36	1,198	.000
Self-Concept	Gender	6.84	1,198	.010
Autonomy	Gender × Culture	5.27	1,198	.023
Security	Cultural Background	16.91	1,198	.000

Table 5 presents the univariate ANOVA results for individual dimensions of adolescent mental health. The findings indicate that cultural background had a statistically significant effect on emotional stability ($F = 18.42$, $p < .001$), adjustment ($F = 21.36$, $p < .001$), and security ($F = 16.91$, $p < .001$). These results suggest that tribal and non-tribal adolescents differ

significantly in important aspects of mental health, with non-tribal adolescents demonstrating comparatively higher levels of emotional stability, adjustment, and feelings of security.

Gender was found to have a significant effect on self-concept ($F = 6.84, p < .01$), indicating meaningful differences between boys and girls in their perception and evaluation of self. Girls demonstrated relatively higher self-concept scores than boys, possibly due to greater emotional awareness and interpersonal sensitivity developed through family interactions and socialization processes.

The interaction effect of Gender $\times$ Cultural Background was statistically significant for autonomy ($F = 5.27, p < .05$). This finding indicates that the influence of gender on autonomy differs across tribal and non-tribal groups. Among tribal adolescents, autonomy levels were comparatively lower, particularly among girls, which may be associated with traditional family structures, collective decision-making practices, and culturally regulated gender roles. Tribal girls are often expected to conform more closely to family and community expectations, limiting opportunities for independent decision-making and self-expression.

In contrast, non-tribal adolescents, especially girls, demonstrated relatively higher autonomy scores. This difference may be attributed to greater educational exposure, changing parental attitudes, and increased encouragement for independent thinking in non-tribal families. The findings therefore suggest that autonomy development is shaped not only by gender but also by socio-cultural context. The significant interaction effect reflects the combined influence of cultural norms, family expectations, and gender-role socialization on adolescent psychological development.

Overall, the findings indicate that cultural background plays a dominant role in shaping adolescent mental health, whereas gender and interaction effects appear to influence specific dimensions such as self-concept and autonomy.

Table 6

Effect Size (Partial Eta Squared)

Effect	Dependent Variable	Partial η^2
Cultural Background	Adjustment	.097
Gender	Self-Concept	.033
Gender $\times$ Culture	Autonomy	.026

Table 6 presents the effect sizes expressed through partial eta squared (η^2), which reflects the strength of the observed effects across the examined variables.

Cultural background accounted for 9.7% variance in Adjustment, reflecting a moderate effect.

Gender explained 3.3% variance in Self-Concept, representing a small effect.

Gender $\times$ Culture interaction explained 2.6% variance in Autonomy.

The above data indicate that cultural background is an influential factor, particularly in adjustment, while gender and interaction effects, though statistically significant, have comparatively smaller practical significance.

Overall Interpretation

The findings collectively reveal that:

A positive family environment significantly enhances adolescents' mental health.

Non-tribal adolescents and girls exhibit better mental health outcomes.

Cultural background plays a dominant role, with gender and interaction effects influencing specific dimensions.

Discussion and Conclusion

The study outcomes reveal the relevance of cultural background in shaping adolescents' mental health. In comparison to tribal adolescents, non-tribal participants displayed relatively higher levels of emotional stability, adjustment, and feelings of security. These observed differences may be linked to variations in socio-economic conditions, access to educational opportunities, and availability of psychosocial support. Studies conducted within the Indian context suggest that adolescents from tribal communities often face a range of challenges, such as economic hardship, restricted educational access, limited health facilities, and social exclusion, which together increase psychological vulnerability (Toppo & Pradhan, 2021; Kujur & Minz, 2022). Conversely, non-tribal adolescents are more likely to grow up in family environments supported by higher parental education and greater exposure to formal educational and social systems, factors that may contribute to improved emotional regulation and a stronger sense of psychological security.

The comparatively lower mental health scores among tribal adolescents also reflect the unique cultural and structural challenges faced by tribal communities. Although tribal families are often characterized by strong kinship bonds and collective living, rapid socio-cultural changes, displacement, loss of traditional livelihoods, and increasing academic pressure have disrupted these protective structures in recent years. Studies by Xaxa (2020) and Rao and Singh (2023) have highlighted that the erosion of traditional support systems, combined with acculturation stress, creates psychological vulnerability among tribal youth. As a result, despite the presence of close-knit family relations, tribal adolescents may experience emotional

insecurity and adjustment difficulties when navigating formal schooling and competitive environments dominated by non-tribal norms.

Gender differences observed in self-concept, with girls scoring higher than boys, are consistent with recent empirical evidence suggesting that adolescent girls often develop greater self-awareness, emotional insight, and relational sensitivity during this developmental stage (Sharma & Joshi, 2021; Verma et al., 2022). Girls are generally more involved in family interactions and receive greater emotional socialization, which may strengthen their self-perception and self-evaluative processes. Boys are often socialized to suppress emotional expression, which may negatively influence their self-concept despite societal expectations of strength and independence. This pattern has been particularly noted in collectivistic societies like India, where gender roles strongly influence emotional development.

The significant interaction effect between gender and cultural background on autonomy suggests that autonomy is not uniformly experienced across groups but is shaped by both gender roles and cultural context. In tribal communities, autonomy is often regulated by collective decision-making and adherence to traditional norms, which may restrict individual independence, particularly for girls. However, in non-tribal settings, educational exposure and changing family dynamics increasingly encourage independent thinking and decision-making, especially among girls. Recent studies have emphasized that autonomy among adolescents emerges differently across cultural contexts and is closely linked to parental expectations, educational aspirations, and societal norms (Kumar & Sinha, 2023). The present findings reinforce the view that autonomy development is culturally embedded rather than universally uniform.

The moderate yet significant positive correlations between family environment and all dimensions of mental health further underline the protective role of a supportive family system. Adolescents experiencing a supportive family environment characterized as warm, cohesive, and emotionally supportive tend to exhibit higher emotional stability, better adjustment, stronger self-concept, greater autonomy, and enhanced feelings of security. This finding is strongly supported by recent literature, which identifies family environment as a critical buffer against stress, anxiety, and emotional disturbances during adolescence (WHO, 2021; Patel et al., 2022). Particularly in the Indian socio-cultural context, family remains the primary source of emotional security, guidance, and socialization, making its influence especially pronounced.

Taken together, the findings suggest that while family environment universally contributes to adolescent mental health, its impact is moderated by cultural background and gender. Tribal adolescents represent a unique group whose mental health is shaped by historical marginalization, socio-economic deprivation, and cultural transition. Addressing their psychological needs therefore requires culturally sensitive, community-based, and family-centred interventions rather than uniform mental health models designed for non-tribal populations.

The study concludes that family environment is a crucial determinant of adolescent mental health, with cultural background emerging as a particularly strong influencing factor. Gender differences further shape specific dimensions of psychological well-being, especially self-concept and autonomy. The results underline the importance of focused mental health interventions and family-strengthening programs for tribal adolescents in Bihar. Enhancing parental awareness, improving educational support, and reinforcing culturally responsive psychosocial interventions may significantly contribute to building resilience and promoting overall mental well-being among adolescents.

Limitations of the Study

Although the present investigation sheds light on the association between family environment and mental health during adolescence, a few limitations should be taken into consideration. The findings are based on self-reported information, and some participants responded in a manner influenced by personal interpretation or social expectations. In addition, the cross-sectional nature of the study restricts the interpretation of results. Participants were selected from identified schools situated in various areas of Bihar, which may limit the extent to which the findings can be generalized to adolescents from other regions or cultural contexts. Future investigations may strengthen the evidence by adopting longitudinal approaches, incorporating qualitative insights, and including a wider geographical representation to gain a more comprehensive understanding of adolescent mental health.

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