

Emotional Intelligence and Optimism in Tribal and Non-tribal Adolescents: A Moderated Analysis Across Age Groups

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Abstract

The study intended to examine the level of emotional intelligence (EI) and its association with optimism among tribal adolescents and non-tribal adolescents of Jharkhand. A total of 480 adolescents (240 tribal and 240 non-tribal), aged between 13 and 17 years, constituted the study population. The study was undertaken with the following objectives a) to assess and compare the level of EI and optimism regarding gender and ethnicity among tribal and non-tribal adolescents of Jharkhand b) to assess and explore the association between EI and its dimensions with optimism among tribal and non-tribal adolescents of Jharkhand c) to assess and explore whether dimensions of EI significantly predict the level of optimism d) to examine whether age acts as a moderating variable on the relationship between EI and optimism. Data were collected using a self-developed socio-demographic data sheet, Emotional Intelligence Scale and the Optimistic-Pessimistic Attitude Scale. The samples for the present study were drawn through a multi-stage mixed sampling method, incorporating purposive, followed by simple random and stratified sampling techniques. The result reveals that the level of EI and optimism differed significantly among tribal and non-tribal adolescents and EI and its dimensions were positively correlated with optimism. Dimensions of EI significantly predicted optimism among tribal and non-tribal adolescents and age significantly moderated the relationship between EI and optimism

Keywords: Emotional Intelligence, Non-tribal Adolescents, Optimism, Tribal Adolescents.

Introduction

Jharkhand is a state characterized by a substantial tribal population living alongside non-tribal communities. Tribal groups such as the Munda and Oraon and other tribal communities maintain distinct cultural traditions, collectivistic orientations, indigenous belief systems and community-based socialization practices that may shape emotional expression, coping styles and future expectations differently from adolescents belonging to mainstream non-tribal backgrounds. According to ecological systems theory, development is embedded within multiple environmental systems and socio-cultural context plays a central role in shaping emotional and cognitive outcomes (1). Furthermore, cultural frameworks influence emotional appraisal and regulation processes, thereby affecting psychological constructs such as optimism (2). In the Indian context, tribal adolescents often experience differential access to educational resources, socio-economic challenges and transitional pressures associated with modernization, all of which may influence their emotional competencies and

expectations about the future (3). In light of these socio-cultural and educational variations, it becomes essential to examine psychological constructs that are closely linked to emotional development and future orientation during adolescence. Since both emotional functioning and expectations about the future are shaped by environmental, cultural and developmental influences, investigating constructs such as EI and optimism within this diverse context may provide deeper insight into how adolescents adapt to their social realities. Understanding these constructs across tribal and non-tribal groups, therefore, offers a culturally grounded perspective on adolescent adjustment and well-being.

EI has emerged as a vital psychological construct that plays a significant role in emotional regulation, interpersonal relationships and overall mental health during adolescence. EI was first defined as the ability to perceive, understand, manage and utilize emotions effectively in oneself and others (4). Later, the concept of EI gained widespread recognition, highlighting its profound impact on

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social success and overall well-being (5). The significance of EI becomes particularly evident when examined within developmental frameworks that emphasize the interplay between emotional growth and psychosocial adjustment. Considering that adolescence is characterized by intensified emotional experiences, identity exploration and increased peer influence, the development of EI during this period becomes critical for adaptive functioning and psychological well-being. The word 'adolescence' derives its root from the Latin word 'adolescere', which means 'to grow' and is the phase in the life of an individual stretching from childhood to adulthood (6). In the treatise on adolescence, adolescence was defined as the developmental phase of age ranging between 14 and 24 years (7). Individuals differ in their ability to process and understand emotional information (8). Those individuals who are better able to understand and regulate their emotions tend to have a better outlook on the future and have better psychological well-being (9).

Closely related to EI is the concept of optimism, which refers to the generalized expectation that good outcomes will occur in life (10). Optimism has been consistently associated with better mental health and physical health, with indices such as more effective immune functioning and lower mortality (11). Given the strong association between emotional regulation and positive expectancy, researchers have increasingly explored the interrelation between EI and optimism. Studies have found that individuals with high EI are more optimistic because they are better able to manage negative emotions, interpret life events positively and sustain a hopeful outlook (12). A study conducted on 6889 participants found that a higher level of EI was associated with greater optimism (13). Similarly, research on 300 students revealed a positive relationship between students' optimism and their EI, with perceived optimism significantly predicting levels of EI (14).

A review of the existing literature reveals limited empirical work examining the relationship

between EI and optimism within culturally diverse adolescent populations, i.e., tribal and non-tribal groups in Jharkhand. While previous studies have independently explored EI and optimism, comparatively fewer investigations have examined their interrelationship across gender and ethnic variations. Moreover, the potential moderating role of developmental factors such as age in shaping this relationship remains underexplored. In view of these research gaps, the present study was undertaken to systematically examine the levels of EI and optimism among tribal and non-tribal adolescents of Jharkhand, with particular attention to gender and ethnic differences.

The study further seeks to explore the nature and strength of the association between EI and its dimensions- understanding emotions, understanding motivations, empathy and handling relations with optimism within both tribal and non-tribal groups. In addition, it aims to determine whether specific dimensions of EI significantly predict optimism among adolescents. Recognising adolescence as a dynamic developmental phase, the study also investigates whether age functions as a moderating variable in the relationship between EI and optimism. Figure 1 illustrates the proposed research framework, in which EI serves as a predictor variable, optimism is designated as the criterion variable and age acts as a moderating variable.

In order to empirically examine these issues, it is hypothesized that the levels of EI and optimism would not differ significantly with respect to gender and ethnicity among tribal and non-tribal adolescents. It is further hypothesized that EI and its dimensions would not show significant associations with optimism within tribal and non-tribal groups. Additionally, the dimensions of EI are not expected to significantly predict optimism. Finally, it is hypothesized that age would not significantly moderate the relationship between EI and optimism.

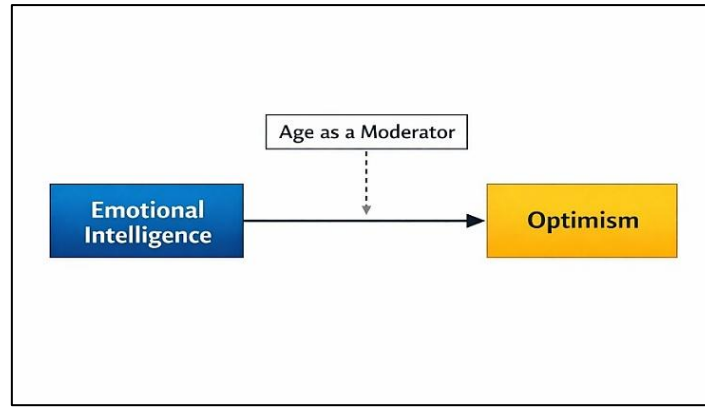


Figure 1: Research Framework

Methodology

Research Design

The study employs a cross-sectional, correlational and comparative survey research design.

Samples and Sampling Technique

The study involved 480 school-going adolescents aged 13–17 years from Jharkhand (Ranchi and Ramgarh districts), including equal numbers of tribal (N = 240; M = 14.84, SD = 1.241) and non-tribal (N = 240; M = 14.51, SD = 1.220) participants. A multi-stage mixed sampling method was employed: purposive sampling for selecting the two districts (Ranchi and Ramgarh district), followed by random sampling of blocks (9 blocks out of 18 blocks of Ranchi and 3 blocks out of 6 blocks of Ramgarh) and schools and finally stratified sampling based on ethnicity (Tribal=240 Non-Tribal=240), gender (Tribal

Boys=120, Tribal Girls=120, Non-Tribal Boys=120, Non-Tribal Girls=120) and locality (Urban Tribes=120, Rural Tribes=120, Urban Non-Tribes=120, Rural Non-Tribes=120) to ensure equal representation of tribal and non-tribal boys and girls from both urban and rural areas. The sampling procedure used in the present study is depicted in Figure 2, which illustrates the multi-stage mixed sampling design adopted for selecting participants from Ranchi and Ramgarh districts of Jharkhand. Figure 2 clearly shows the stepwise process of purposive, random and stratified sampling, ensuring equal representation of tribal and non-tribal adolescents across gender and locality.

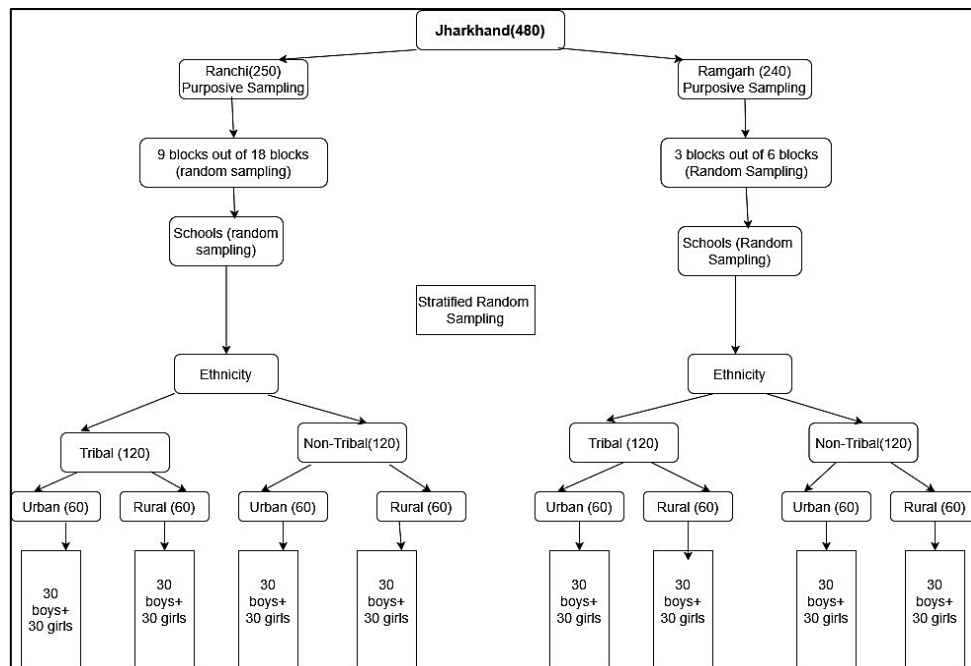


Figure 2: Selection of Sample

Measures Used

Socio-demographic and Personal Data Sheet

A structured data sheet was especially designed for the present study to collect significant socio-demographic and personal data from the study participants. Under the socio-demographic data sheet, information related to age, gender, ethnicity, tribal community, locality, educational status of the parents, family income, working status of the parents, most time spent with you, nature of family and any significant clinical history of the parents or significant others

Emotional Intelligence Scale

This scale has been developed by Dr Arun Kumar Singh and Dr Shruti Narain, consisting of 31 items divided into four areas- 1. Understanding emotions 2. Understanding motivation 3. Empathy 4. Handling relations (15). This scale can be administered on 12 years & above. Out of 31 items, 4 items (i.e., 13, 17, 20, 21) are negative items. For each item subject had to respond in Yes or No categories. For positive items, a +1 score will be given for a Yes response and 0 for a No response and vice versa. The reliability coefficient of the scale was 0.086. Also, the reliability coefficient for the present study for the non-tribal population was 0.650 while for tribal adolescents was 0.603.

Optimistic-Pessimistic Attitude Scale

This scale was developed by Dr D.S Parasar and consisted of 40 items (16). This scale can be administered on 13 to 25 years. This scale intends to measure the optimistic-pessimistic attitude of the individual, which in turn will reflect their belief, personality and behaviour. The questionnaire consists of 20 optimistic questions and 20 pessimistic questions. For items related to optimistic attitude, if the subject chooses 'Agree', then he/she will be given +1 and if he chooses 'Disagree', then he/she will be given 0. For items related to pessimistic attitude, vice versa. The reliability of the scale calculated through the K.R.

formula was found to be 0.62, while the reliability coefficient calculated through the test-retest method was found to be 0.74. Also, the reliability coefficient of the scale for the present study for the non-tribal population was 0.652 while for tribal adolescents was 0.633.

Procedure

The data collection procedure involved obtaining ethical clearance from the Departmental Research and Degree Committee (DRDC) before commencing the study. The research was conducted in accordance with the principles outlined in the Declaration of Helsinki and adhered to the American Psychological Association's (APA) ethical guidelines for research with human participants (17, 18). School-going adolescents from tribal and non-tribal communities in Jharkhand were approached through their schools and informed consent was obtained from both the adolescents and their stakeholders. The participants were assured of confidentiality and anonymity and their right to withdraw from the study at any point was respected. Data were collected using standardized questionnaires and the researcher ensured that the participants' rights were protected throughout the study.

Statistical Analyses

To test whether the assumptions for data analysis were met, the Kurtosis and Skewness tests were run. Two-Way ANOVA was performed to examine the effects of gender and ethnicity on the levels of EI and optimism among tribal and non-tribal adolescents. Pearson's Correlation test was used to assess the strength and direction of the relationship between EI and its dimensions with optimism. Hierarchical Regression Analysis was used to test the predictive power of EI dimensions on optimism. Moderation analysis was performed using PROCESS Macro, an add-on software in SPSS. The data were analysed using SPSS version 27.

Results

Table 1: Descriptive Statistics and ANOVA for EI and Optimism by Gender and Ethnicity

| Variables | Ethnicity | | | | | | ANOVA | | | |
|-------------------------------|------------|------|-----|--------|------|-----|-----------|-----------|-------|------------------|
| | Non-Tribal | | | Tribal | | | Effect | F-ratio | df | Partial η^2 |
| Gender | Mean | SD | N | Mean | SD | N | | | | |
| Emotional Intelligence | | | | | | | | | | |
| Boys | 20.03 | 3.69 | 120 | 18.97 | 4.09 | 120 | Gender | 1.988 | 1,476 | 0.008 |
| Girls | 19.68 | 3.65 | 120 | 17.92 | 3.98 | 120 | Ethnicity | 16.048*** | 1,476 | 0.033 |
| Total | 19.85 | 3.67 | 240 | 18.44 | 4.06 | 240 | Gender* | 0.962 | 1,476 | 0.002 |
| | | | | | | | Ethnicity | | | |

| Optimism | | | | | | | | | | |
|----------|-------|------|-----|-------|------|-----|-----------|---------|-------|-------|
| Boys | 25.93 | 4.68 | 120 | 24.14 | 5.12 | 120 | Gender | 0.024 | 1,476 | 0.000 |
| Girls | 25.40 | 4.78 | 120 | 24.81 | 4.17 | 120 | Ethnicity | 7.699** | 1,476 | 0.016 |
| Total | 25.67 | 4.73 | 240 | 24.47 | 4.67 | 240 | Gender* | 1.952 | 1,476 | 0.004 |
| | | | | | | | Ethnicity | | | |

Note: SD-Standard Deviation, N-Number of Samples, df-Degree of Freedom, p***<0.001; p**<0.01.

Table 1 presents the descriptive statistics and results of the ANOVA for EI and optimism by gender and ethnicity among adolescents. The findings reveal that for EI, non-tribal boys (M = 20.03, SD = 3.69) scored higher than tribal boys (M = 18.97, SD = 4.09) and similarly, non-tribal girls (M = 19.68, SD = 3.65) scored higher than tribal girls (M = 17.92, SD = 3.98). The ANOVA results show that the main effect of ethnicity was significant (F = 16.048, p < .001, η² = 0.033). However, the main effect of gender (F = 1.988, p > 0.05, η² = 0.008) and the interaction effect between gender and ethnicity (F = 0.962, p > 0.05, η² = 0.002) were not significant.

For optimism, non-tribal boys (M = 25.93, SD = 4.68) and girls (M = 25.40, SD = 4.78) scored slightly higher than their tribal counterparts, with tribal boys (M = 24.14, SD = 5.12) and tribal girls (M = 24.81, SD = 4.17). The ANOVA results reveal a significant main effect of ethnicity (F = 7.699, p < 0.01, η² = 0.016), indicating that non-tribal adolescents are more optimistic than tribal adolescents. The main effect of gender (F = 0.024, p > 0.05, η² = 0.000) and the interaction effect between gender and ethnicity (F = 1.952, p > 0.05, η² = 0.004) were not significant.

Table 2: Correlation Between EI and its Dimensions With Optimism Among Tribal and Non-tribal Adolescents

| Variables | Optimism | |
|---------------------------|----------|------------|
| | Tribal | Non-tribal |
| Emotional Intelligence | 0.155* | 0.288** |
| Understanding Emotions | 0.025 | 0.083 |
| Understanding Motivations | 0.061 | 0.155* |
| Empathy | 0.181** | 0.272** |
| Handling Relations | 0.127* | 0.196 |

Note: P**≤0.01, p*≤.05

Table 2 shows the correlation between EI and its dimensions with optimism among tribal and non-tribal adolescents. The results indicate that among tribal adolescents, EI has a positive and significant relationship with optimism (r = 0.155, p < 0.05). Among its dimensions, empathy (r = 0.181, p < 0.01) and handling relations (r = 0.127, p < 0.05) are significantly correlated with optimism. However, understanding emotions (r = 0.025) and understanding motivations (r = 0.061) show negligible and non-significant correlations.

In contrast, among non-tribal adolescents, EI shows a stronger positive and significant correlation with optimism (r = 0.288, p < 0.01). The dimensions of empathy (r = 0.272, p < 0.01), understanding motivations (r = 0.155, p < 0.05) and handling relations (r = 0.196) are positively related to optimism. Although understanding emotions (r = 0.083) shows a weak and non-significant relationship.

Table 3: Hierarchical Regression Analysis With Dimensions of EI as Predictors and Optimism as Criterion Among Non-tribal Adolescents

| | Tribal | | | | Non-tribal | | | |
|--------------------------|--------|-------|---------|--------|------------|------|--------|--------|
| | B | SE | β | t | B | SE | β | t |
| Constant | 21.64 | 4.54 | | 4.763 | 22.76 | 4.83 | | 4.70 |
| Age | -0.219 | 0.24 | -0.058 | -0.888 | -0.18 | 0.25 | -0.048 | -0.748 |
| Gender | 1.07 | 0.60 | 0.116 | 1.790 | -0.296 | 0.59 | -0.031 | -0.49 |
| Locale | -0.047 | 0.616 | -0.005 | -0.076 | -0.80 | 0.62 | -0.085 | -1.28 |
| Most time spent with | 0.721 | 0.36 | 0.131 | 1.96 | -0.197 | 0.45 | -0.028 | -0.43 |
| Nature of family | 0.230 | 0.65 | 0.023 | 0.35 | -0.630 | 0.61 | -0.065 | -1.01 |
| Income | -1.21 | 0.766 | -0.10 | -1.58 | 0.677 | 0.69 | 0.062 | 0.96 |
| Understanding Emotions | -0.024 | 0.310 | -0.005 | -0.07 | 0.190 | 0.30 | 0.040 | 0.61 |
| Understanding Motivation | -0.065 | 0.231 | -0.022 | -0.28 | 0.180 | 0.20 | 0.060 | 0.87 |
| Empathy | 0.460 | 0.196 | 0.163** | 2.34 | 0.614 | 0.21 | 0.20* | 2.89 |

| | | | | | | | | |
|-------------------------|-------|-------|---------|------|-------|------|---------|------|
| Handling Relations | 0.339 | 0.217 | 0.121 | 1.56 | 0.337 | 0.20 | 0.11 | 1.65 |
| R ² | | | 0.081 | | | | 0.114 | |
| R ² Change | | | 0.046 | | | | 0.081 | |
| Adjusted R ² | | | 0.041 | | | | 0.075 | |
| F | | | 2.879** | | | | 5.21*** | |

Note: p***≤.001, p**≤.05, p*≤.01. B- Unstandardised Regression Coefficient, SE- Standard Error, β – Standardised Regression Coefficient, t- t-ratio.

In Table 3, a hierarchical multiple regression analysis was performed to assess the influence of dimensions of EI on optimism among tribal adolescents while controlling for demographic variables. In Step 1, demographic factors (age, gender, locale, most time spent with, nature of family and income) collectively explained 3.5% (R² = 0.035) of the variance in optimism, F (6,233) = 1.406, p > 0.05. None of these variables significantly predicted optimism, although income (B = -1.447, t = -1.88) showed a weak negative trend.

In Step 2, the inclusion of dimensions of EI increased the explained variance to 8.1% (R² = 0.081), producing a significant R² change of 0.046, F (4,229) = 2.879, p < 0.05, with an adjusted R² of 0.041. Among the predictors, empathy (B = 0.460, SE = 0.196, β = 0.163, t = 2.34, p < 0.05) emerged as a significant positive predictor of optimism. Other dimensions—understanding emotions (B = -0.024, t = -0.07), understanding motivations (B = -0.065, t = -0.28) and handling relations (B = 0.339, t = 1.56)—were non-significant. These findings indicate that empathy contributes significantly to optimism among tribal adolescents, whereas

demographic and other EI dimensions exert minimal influence.

Also, hierarchical multiple regression analysis was conducted to determine whether EI dimensions predicted optimism among non-tribal adolescents after controlling for demographic variables. In Step 1, demographic factors (age, gender, locale, most time spent with, nature of family and income) explained 3.3% of the variance in optimism (R² = 0.033), F (6, 233) = 1.323, p > 0.05, indicating no significant contribution. In Step 2, adding EI dimensions increased the explained variance to 11.4% (R² = 0.114), with a significant R² change of 0.081, F change (4, 229) = 5.21, **p < 0.001 and an adjusted R² of 0.075. Among the predictors, empathy (B = 0.614, SE = 0.21, β = 0.20, t = 2.89, p < 0.01) emerged as a significant positive predictor of optimism, while understanding emotions, understanding motivation and handling relations were nonsignificant. These results suggest that empathy plays a key role in enhancing optimism among non-tribal adolescents, whereas demographic factors and other EI dimensions contribute minimally.

Table 4: Moderation Analysis with EI As Predictor, Optimism as Criterion and Age as Moderator

| Constant | B | t | p | 95%CI | | R ² | F | df |
|---------------------------|---------|--------|------|--------|------|----------------|------|---------|
| | | | | LLCI | ULCI | | | |
| Emotional Intelligence(A) | 0.3719 | 4.66 | 0.00 | 0.214 | 0.53 | | | |
| Age(B) | -0.1986 | -0.828 | 0.40 | -0.67 | 0.27 | | | |
| A*B | -0.1134 | -1.86 | 0.06 | -0.233 | 0.00 | 0.01 | 3.48 | (1,476) |

Note: B- Unstandardised Regression Coefficient, LLCI-Lower Limit of Confidence Interval, ULCI-Upper Limit of Class Interval.

Table 4 shows the moderation analysis, which examined whether age moderates the relationship between EI and optimism. The overall model accounted for 1% of the variance in optimism (R² = 0.01), which was not statistically significant, F (1, 236) = 3.48, p > 0.05. EI showed a significant positive main effect on optimism (B = 0.3719, t = 4.66, p < 0.001, 95% CI [0.214, 0.53]), indicating that higher EI is associated with greater optimism.

The main effect of age was not significant (B = -0.1986, t = -0.828, p = 0.40, 95% CI [-0.67, 0.27]), suggesting that age alone does not predict optimism. The interaction term between EI and age was marginally significant (B = -0.1134, t = -1.86, p = 0.06, 95% CI [-0.2331, 0.00]), indicating a possible moderating effect of age on the EI-optimism relationship.

Table 5: Conditional Effect of the Focal Predictor at Values of The Moderator

| Age | Effect | SE | t | p | 95%CI | |
|------|--------|------|------|------|-------|------|
| | | | | | LLCI | ULCI |
| -1SD | 0.54 | 0.12 | 4.42 | 0.00 | 0.30 | 0.78 |
| Mean | 0.43 | 0.08 | 4.98 | 0.00 | 0.26 | 0.59 |
| +1SD | 0.20 | 0.11 | 1.70 | 0.08 | 0.03 | 0.43 |

Note: SE- Standard Error, t- t-ratio, p-Significance value, LLCI-Lower Limit of Confidence Interval, ULCI-Upper Limit of Class Interval

Table 5 further interpret this interaction; the conditional effects of EI on optimism were examined at three levels of age: one standard deviation below the mean (-1SD), at the mean and one standard deviation above the mean (+1SD). Results revealed that the positive relationship between EI and optimism was strongest among younger adolescents ($B = 0.54$, $SE = 0.12$, $t = 4.42$, $p < 0.001$, 95% CI [0.30, 0.78]), moderate at the mean age ($B = 0.43$, $SE = 0.08$, $t = 4.98$, $p < 0.001$, 95% CI [0.26, 0.59]) and weakest among older adolescents ($B = 0.20$, $SE = 0.11$, $t = 1.70$, $p = 0.08$, 95% CI [0.03, 0.43]).

These findings suggest that age marginally moderates the relationship between EI and optimism. Specifically, the influence of EI on optimism tends to decline slightly with increasing age, indicating that younger adolescents with higher EI display greater optimism compared to their older counterparts.

Discussion

The study was conducted with the objective of seeing whether the level of EI and optimism differ significantly regarding the gender and ethnicity of the tribal and non-tribal adolescents of Jharkhand. The observed ethnic differences in EI and optimism among adolescents can be explained through cultural variations in self-construal and socialisation patterns. According to different studies, non-tribal adolescents, being more exposed to urban and individualistic environments, develop an independent self-construal that values self-expression, autonomy and personal achievement (2, 19). Such contexts encourage identifying and articulating emotions, interpreting others' motivations and engaging in interpersonal negotiation—skills that enhance EI (20). In contrast, tribal adolescents, shaped by collectivistic orientations that emphasise harmo-

ny, respect for authority and group cohesion (21), may have fewer opportunities for independent emotional exploration and self-directed problem-solving, resulting in comparatively lower EI scores. Studies in India support this view, showing that non-tribal adolescents scored higher in EI (22, 23) and optimism (24) than their tribal counterparts, even when economic and family conditions were controlled. Interestingly, gender did not significantly affect these outcomes and found no meaningful differences between boys and girls in EI or optimism, suggesting that cultural-ethnic socialization processes are stronger determinants than biological sex in shaping these psychosocial competencies.

Another aim of the present study was to explore the association between EI and its dimensions with optimism among tribal and non-tribal adolescents. The present study's finding of a positive correlation between EI and optimism is well supported by prior research. Individuals with better emotional intelligence can more effectively perceive, understand and regulate emotions, which helps them cope effectively with stress and maintain a hopeful attitude (14, 25). Broad and build theory suggests that positive emotions generated through effective emotional regulation expand cognitive flexibility and resilience, fostering optimism (26). Emotional regulation and adaptive coping strategies such as problem-solving and cognitive reappraisal enable emotionally intelligent individuals to minimize negative affect and enhance positive experiences (27, 28). Furthermore, empathy and positive relationships, components of EI, enhance social support—another factor linked with optimism. Overall, the findings align with literature suggesting that EI promotes effective emotion management, resilience and a positive outlook on life's challenges.

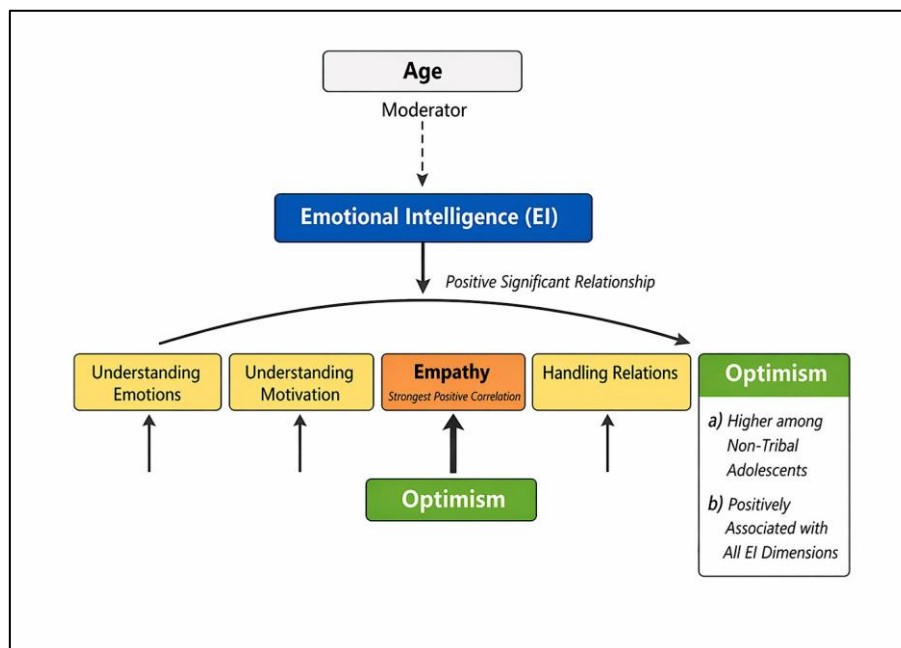


Figure 3: Conceptual Model of Relationship Between Emotional Intelligence and its Dimensions with Age as a Moderator

Age also plays a moderating role in emotional development and future orientation. Research indicates that EI increases with age due to maturation of cognitive and social capacities (29), whereas optimism may decline slightly during late adolescence as individuals encounter more realistic life experiences and challenges (30). Therefore, examining age as a moderator provides a developmental perspective on how EI and optimism interact across different stages of adolescence. All the above findings of the present study are displayed through Figure 3 which reflects conceptual model of obtained relationship between EI & its dimensions with optimism and age as a moderator.

Conclusion

This study was undertaken to investigate how EI and optimism among tribal and non-tribal adolescents are associated, while examining the moderating role of age. The findings revealed that ethnicity significantly influenced both EI and optimism, with non-tribal adolescents exhibiting higher levels of both constructs compared to their tribal counterparts. This suggests that cultural and environmental factors associated with ethnicity play an important role in shaping adolescents' emotional and cognitive outlooks. Furthermore, EI and its dimensions were positively associated with optimism, indicating that adolescents who can effectively perceive, understand and manage

emotions tend to maintain a more positive and hopeful attitude toward life. Importantly, the moderation analysis demonstrated that age significantly moderated the relationship between EI and optimism, suggesting that the strength of this association varies across different stages of adolescence. As adolescents grow older, their capacity to regulate emotions and sustain optimistic thinking may change due to developmental, social and experiential factors. Overall, the study underscores the importance of EI in fostering optimism and highlights how cultural background and developmental stage together shape adolescents' emotional and motivational functioning.

Implications

The results of the study are crucial for informing initiatives that support the educational, psychological and social development programs targeting adolescents. Since ethnicity was found to significantly affect EI and optimism, it highlights the need for culturally sensitive interventions that address the unique emotional and social experiences of tribal adolescents. Schools and community programs should incorporate emotional skills training and positive psychology practices that foster self-awareness, empathy and emotional regulation, particularly among groups with limited exposure to such developmental opportunities. Moreover, the moderating role of

age implies that emotional and cognitive development evolves across adolescence, emphasizing the importance of age-appropriate interventions that nurture emotional growth and optimism at different stages of maturity. Overall, the study underscores the need for integrating EI education into school curricula and counselling practices to promote resilience, optimism and holistic development among both tribal and non-tribal adolescents.

Limitations and Future Directions

The study's findings are subject to certain limitations. Firstly, the data were collected exclusively from the tribal adolescents of Ranchi and Ramgarh districts of Jharkhand, which may restrict the generalizability of the results to other tribal populations. The unique cultural, socio-economic and environmental contexts of these tribes may not be representative of the diverse tribal communities in the other regions of India. Furthermore, the study employed a quantitative research approach, which, while providing valuable insights, may not have captured the nuanced and contextual aspects of the research phenomenon. Future research could consider incorporating qualitative methods and expanding the sample to include participants from other tribes and geographical locations to enhance the generalizability and comprehensiveness of the findings.

Abbreviations

EI-Emotional Intelligence.

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Author Contributions

Kumari Sristee: conceptualization, methodology, data collection, manuscript drafting, Dharmendra Kumar Singh: supervision, Chetna Jaiswal: conceptualization, Review, Nikita Kumari: interpretation of the results, drawing meaningful conclusions.

Conflict of Interest

The authors declare no conflict of interest.

Data Availability

The datasets collected and/or analysed during the current work are not publicly available owing to confidentiality and privacy concerns, but they are available from the corresponding author upon reasonable request.

Declaration of Generative AI And AI Assisted Technologies in the Writing Process

No AI tool has been used in this manuscript.

Ethics Approval

The research was approved by the Departmental Research and Degree Committee (DRDC) of the Department of Psychological Sciences, Central University of South Bihar, Gaya (F. No. CUSB/Acad/2020/1302).

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