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Locus of Control, Automatic Self Thoughts, Self Esteem in relationship with Academic Anxiety among High School Students

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Abstract: The present study investigated the relationships between locus of control, automatic self-thoughts, self-esteem, and academic anxiety among high school students (50 boys, 50 girls) in Delhi, India. Using standardized measures Rotter's Internal-External Locus of Control Scale, Automatic Thoughts Questionnaire, Rosenberg's Self-Esteem Scale, and Academic Anxiety Scale for Children the study employed Pearson correlation analyses to test hypotheses positing no significant relationships between these variables and academic anxiety. Results revealed significant correlations: a negative correlation between locus of control and academic anxiety (r = -0.215, p < .05), a strong negative correlation between self-esteem and academic anxiety (r = -0.816, p < .01), and a strong positive correlation between automatic thoughts and academic anxiety (r = 0.858, p < .01). These findings suggest that students with external locus of control and high self-esteem experience lower academic anxiety, while those with frequent negative automatic thoughts experience higher academic anxiety. Implications for educational counseling and future research are discussed.

Keywords: Locus of control, self-esteem, automatic thoughts, academic anxiety, high school students

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INTRODUCTION

The high schoolers go through a transformative developmental stage i.e. adolescence in the life's chapter. It usually involves complex thinking, detailed problem solving, socialization with peers, and a lot more. Each transformation comes a set of challenges and adolescence is no different. For instance, the brain needs to face the great challenge of acing exams, getting accepted into college, navigating intricate social relationships, and juggling the demands of school. Putting so much pressure can be harmful to one's mental and emotional health and academic achievement. However, the impact is determined by an individual's automatic self-talk, control, self-esteem, and academic apprehension. To respond effectively to high schoolers, educators need to build frameworks focused on mental well-being, understand the problems that adolescents encounter, and how they can sustain academic endeavour in an irrefutable manner.

Locus of control, as defined in Julian Rotter's Social Learning Theory (1966), revealed that an individual's belief about how much he/ she can control his/her life events. With internal locus of control, which is where higher motivation, better work habits, and greater achievement are noticed, outcomes are attributed to personal effort. On the other hand, external locus of control, where outcomes are believed to be out of one's control, leads to helplessness and lack of active participation (Sagone & Caroli, 2013). For high school students, internal locus is useful to combat academic stress, which makes it an important variable to explore.

Automatic self-thoughts as defined in Aaron Beck's Cognitive Theory (1991) are thoughts that come to mind without deliberate effort and influence emotions and behaviour. "I'm not smart enough" is one of the negative self-statements that adolescents are more likely to make, and consequently, it results in reducing self-esteem and increasing exam anxiety. Cognitive-behavioral frameworks argue that changing those thoughts is a way to improve mental health and academic performance. Examining such thoughts among high school students sheds light on cognitive-emotional interplay during an important phase of life. Self-esteem is understood as one's estimation of his or her worth and as per Rosenberg (1965) and is fundamental to mental health and educational success. High self-esteem promotes resilience and motivation, while low self-esteem is linked to disengagement and heightened anxiety (Orth & Robins, 2022). Academic anxiety is a form of anxiety due to excessive worrying that restricts cognitive processes and is a well-known battle among high school learners. It has been identified that high school learners face more test anxiety compared to college students, which social support does help mitigate (Pascoe et al., 2020). The younger population, including high school students, is more vulnerable to academic anxiety because of underdeveloped coping strategies (Aysan et al., 2001). Eliminating academic anxiety is essential to improve one's academic performance and overall health (Hsu & Goldsmith, 2021).

The automatic self-thoughts, self-esteem, academic anxiety, and locus of control in high school students is important because of the heightened vulnerability in the process of identity formation, as highlighted in Erikson's (1968) Psycho-social Development Theory. According to this theory, adolescence for most individuals (ages 12–18) is dominated with the task of achieving a coherent identity. This stage of development with the crisis of Identity vs. Role Confusion makes adolescence more susceptible to the impact of these psychological factors on their academic achievement, mental health, and life psycho-social development. At this phase, high school students actively seek out different roles, values, and beliefs that will contribute to a positive self-image. Resolving the Identity vs. Role Confusion conflict successfully yields a strong sense of self, and leads to confusion, low self-esteem, and life challenges in subsequent years when unresolved. These psychological factors of locus of control, automatic self-thoughts, self-esteem, and academic anxiety directly impact this phenomenon by shaping how a student views about himself, his abilities, and his environment. These factors become the focus of research due to the lack of protective measures available to high school students at this stage. Mahajan (2015) found a negative correlation between academic anxiety and parental encouragement, highlighting environmental influences. Joshi et al. (2012) identified high levels of academic anxiety among urban adolescents, driven by academic performance pressures. The external locus of control was associated with higher anxiety levels, as students attributed academic challenges to uncontrollable factors, exacerbating stress and negative automatic thoughts (e.g., catastrophic thinking about failure)

This framework integrates **Social Learning Theory**, **Cognitive Behavioral Theory**, **Self-Concept Theory**, and the **Tripartite Model of Anxiety and Depression** to explain the relationships between locus of control, automatic self thoughts, self-esteem, and academic anxiety among high school students. These constructs interact through cognitive, emotional, and

behavioral pathways, influencing academic performance and well-being. The absence of comprehensive research on all four factors ignores their complementary impacts, which are essential for comprehending identity formation. Though they have a significant influence on how adolescents view themselves, automatic self-thoughts are not as well studied. Generalization and the relevance of interventions are limited by the lack of diversity in study populations. The developmental significance of these variables is overlooked when Erikson's identity formation framework is not given enough attention. In order to clarify their combined effects on academic performance and mental health, this study examines the connections between high school students' locus of control, automatic self-thoughts, self-esteem, and academic anxiety.

The present study aims to explore how these constructs correlate with academic anxiety among high school students, addressing a gap in the literature by including automatic self thoughts alongside locus of control and self-esteem. The objectives are to examine the relationship between (a) locus of control and academic anxiety, (b) automatic self thoughts and academic anxiety, and (c) self-esteem and academic anxiety.

The hypotheses are:

- **H1**: There is no significant relationship between locus of control and academic anxiety among high school students.
- **H2**: There is no significant relationship between self-esteem and academic anxiety among high school students.
- **H3**: There is no significant relationship between automatic self thoughts and academic anxiety among high school students.

METHOD

Design

The present study is a quantitative, correlational, cross-sectional within group design to explore the relationships between locus of control, automatic self thoughts, self-esteem, and academic anxiety without manipulating variables.

Participants

The sample consisted of 100 high school students (50 boys, 50 girls) in 10th grade from private schools in Delhi, India. The mean age was 14.56 years (SD = 0.978, range = 13–16). Participants were selected using a convenient sampling technique, targeting accessible schools.

Measures

1. **Academic Anxiety Scale for Children (AASC)** (Singh & Gupta, 2009): AASC is a 20-item scale measuring academic anxiety. Items are scored as 0 or 1, with a maximum score of 20. Higher scores indicate greater academic anxiety. Test-retest reliability is 0.60, and split-half reliability is 0.65. Validity correlations with the Sinha Anxiety Scale and CAAT are 0.41 and 0.57, respectively ($p < .01$).

2. **Rosenberg's Self-Esteem Scale (RSES)** (Rosenberg, 1965): This is a 10-item scale assessing

global self-worth on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree). Scores range from 10 to 40, with higher scores indicating higher self-esteem. Internal consistency ranges from 0.77 to 0.88, and test-retest reliability is 0.82–0.85.

3. **Rotter's Internal-External Locus of Control Scale** (Rotter, 1966): A 29-item forced-choice scale (including 6 filler items) measuring locus of control. Scores range from 0 to 23, with higher scores indicating external locus of control. Internal consistency is 0.65–0.79, and test-retest reliability is 0.55–0.83.

4. **Automatic Thoughts Questionnaire (ATQ)** (Hollon & Kendall, 1980): A 30-item Likert-scale questionnaire (1 = not at all, 5 = all the time) measuring the frequency of negative automatic thoughts. Scores range from 30 to 150, with higher scores indicating more frequent negative thoughts. Internal consistency is 0.97, with strong validity against depression measures. ATQ taps 4 aspects of these automatic thoughts: personal maladjustment and desire for change (PMDC), negative self-concepts and negative expectations (NSNE), low self-esteem (LSE), and Helplessness.

Procedure

Permission was obtained from school principals to conduct the study during free periods. Students were briefed on the study's purpose and assured of confidentiality, those who consented were included in the study. On the first day, the Locus of Control Scale and ATQ were administered; on the second day, the RSES and AASC were completed. Instructions were provided for each scale, and studentswere told that they free to ask questions. Data were scored and recorded in an Excel sheet, then analyzed using IBM SPSS.

Data Analysis

Descriptive statistics (means, standard deviations, ranges) were calculated for all variables. Pearson correlation analyses were conducted to test the hypotheses, examining relationships between locus of control, self-esteem, automatic thoughts, and academic anxiety. Significance was set at $p < .05$.

RESULT AND DISCUSSION

Table 1: Mean, SD and Range of scores for LOC, Self-esteem, Automatic Thoughts and Academic Anxiety

Variable	N	Mean	SD	Minimum	Maximum
Academic Anxiety	100	14.82	3.056	6	20
Locus of Control	100	11.79	3.669	3	21
Self-Esteem	100	17.85	5.788	10	34
Automatic Thoughts	100	111.09	20.624	67	144

Table 1 presents descriptive statistics for the participants (N = 100). The mean academic anxiety score was

14.82 (SD = 3.056, range = 6–20), indicating moderate to high anxiety. Locus of control had a mean of 11.79 (SD = 3.669, range = 3–21), suggesting a balanced distribution of internal and external orientations. Self-esteem averaged 17.85 (SD = 5.788, range = 10–34), and automatic thoughts averaged 111.09 (SD = 20.624, range = 67–144), indicating frequent negative thoughts.

Table 2: Correlation Coefficients Among Academic Anxiety, Locus of Control, Self-Esteem, and Automatic Thoughts

Variable	Academic Anxiety	Locus of Control	Self-Esteem	Automatic Thoughts
Academic Anxiety	**1.00**	**-0.215***	**-0.816****	**.858****
Locus of Control		**1.000**	**.069**	**-.164**
Self-Esteem			**1.000**	**-.787****
Automatic Thoughts				**1.000**

* for p < .05;** for p < .01

Table 2 indicates several significant relationships among the variables. Academic Anxiety showed a strong positive correlation with Automatic Thoughts (r = .858, p < .01), indicating that higher levels of academic anxiety are associated with more frequent negative automatic thoughts. Conversely, Academic Anxiety exhibited a strong negative correlation with Self-Esteem (r = -.816, p < .01), suggesting that individuals with higher academic anxiety tend to have lower self-esteem. A weaker, but statistically significant, negative correlation was observed between Academic Anxiety and Locus of Control (r = -.215, p < .05), implying that individuals with higher academic anxiety may perceive less control over their academic outcomes (i.e., a more external locus of control). Self-Esteem was strongly negatively correlated with Automatic Thoughts (r = -.787, p < .01), indicating that lower self-esteem is associated with more frequent negative automatic thoughts. Locus of Control showed no significant correlations with Self-Esteem (r = .069, p > .05) or Automatic Thoughts (r = -.164, p > .05), suggesting that locus of control is relatively independent of these variables in this sample.

Table 3: Stepwise Multiple Regression for predicting Academic Anxiety from LOC, Self esteem and Automatic thoughts of High school students

Predictors	ΔR^2	β
Step 1 Automatic Thoughts	.737	.858
Step 2 Self Esteem	.052	-.370

Step 3 LOC	.010	-.10
Total R^2	.797	
N	100	

A stepwise regression analysis was conducted to examine the predictive relationships between Automatic Thoughts, Self-Esteem, Locus of Control, and Academic Anxiety (N = 100). The results, presented in Table 3, indicate that Automatic Thoughts entered first, explaining 73.7% (β=.858) of the variance followed by Self-Esteem, which added 5.2% (β= -.370) and Locus of Control, contributing 1.0% (β= -.10). The final model accounted for 79.7% of the variance in Academic Anxiety. These findings support the rejection of hypotheses H1, H2, and H3, confirming significant relationships, with Automatic Thoughts as the strongest predictor, followed by Self-Esteem, while Locus of Control's minimal contribution suggests potential interactional effects warranting further exploration.

DISCUSSION

The first hypothesis is rejected on the basis of results as significant relationship (r= -0.215*) was found between Locus of Control and Academic Anxiety. The results suggest significant negative correlation between Locus of Control and Academic Anxiety at o.05 level which means that with increase in scores of Locus of Control, Academic Anxiety decreases. High score of Locus of Control scale refers to External Locus of control. This means that students having external Locus of Control tend to have low Academic Anxiety.

The second hypothesis is rejected on the basis of results as significant relationship (r= -0.816*) was found between Self Esteem and Academic Anxiety. The results suggest significant negative correlation between Self Esteem and Academic Anxiety at 0.01 level which means that with increase in scores of Self Esteem, Academic Anxiety decreases. High score of Self Esteem scale refers to High Self Esteem. This means that students having high Self Esteem tend to have low Academic Anxiety and students with low Self Esteem have High Academic Anxiety.

The third hypothesis is rejected on the basis of results as significant relationship (r= 0.858**) was found between Automatic Thoughts and Academic Anxiety. The results suggest significant positive correlation between Automatic Thoughts and Academic Anxiety at 0.01 level which means that with increase in scores of Automatic Thoughts, Academic Anxiety increases. High score of Automatic Thoughts scale refers to High Automatic Thoughts re-occurrence. This means that students having high Automatic Thoughts tend to have high Academic Anxiety and students with low Automatic Thoughts have low Academic Anxiety.

The strong positive correlation between Academic Anxiety and Automatic Thoughts aligns with cognitive theories of anxiety, which posit that negative automatic thoughts exacerbate anxious states (Beck, 1976). Similarly, the strong negative correlation between Academic Anxiety and Self-Esteem supports prior

research indicating that anxiety undermines self-worth (Sowislo & Orth, 2013). The weak negative correlation between Academic Anxiety and Locus of Control suggests a modest link between anxiety and perceptions of external control, consistent with Rotter's (1966) locus of control framework. The lack of significant correlations involving Locus of Control with Self-Esteem and Automatic Thoughts may indicate that locus of control operates independently of these constructs in this context, or that the sample size or measurement tools limited the detection of significant relationships.

The present study investigated the relationships between Locus of Control, Self-Esteem, Automatic Thoughts, and Academic Anxiety. The findings revealed significant correlations between all three variables and Academic Anxiety, leading to the rejection of hypotheses H1, H2, and H3. Contrary to previous research (e.g., Lane, Lane, & Kyprianou, 2004; Yu & Fan, 2014), which linked external Locus of Control to increased anxiety and poor academic performance, and studies indicating interactional effects of Self-Esteem and Locus of Control (Uma & Maniknandan, 2013; Shubina, 2017), our results suggest that interactional influences may play a critical role in Academic Anxiety, warranting further exploration. Additionally, the significant correlation between Self-Esteem and Academic Anxiety aligns with prior findings (Abouserie, 1994; Joshi & Srivastva, 2012), with notable gender differences indicating higher Self-Esteem in boys and greater academic achievement in girls. Similarly, the relationship between Automatic Thoughts and Academic Anxiety, supported by Martin et al. (2005), Calvete, Orue, & Hankin (2013), and Shakir (2014), highlights Automatic Thoughts as a mediator in anxiety and an inverse predictor of academic achievement. These findings underscore the complex interplay of psychological factors in Academic Anxiety and suggest that future research should focus on interactional effects, gender differences, and mediating roles of Automatic Thoughts to inform targeted interventions for reducing academic anxiety and enhancing student outcomes.

IMPLICATIONS

The findings have significant implications for educational counseling and clinical psychology. Educators can use these insights to identify students at risk of academic anxiety based on their locus of control, self-esteem, and thought patterns. Interventions targeting self-esteem enhancement, such as behavioral programs (Sharma & Agarwala, 2015), could reduce academic anxiety. Cognitive behavioral therapy to address negative automatic thoughts may also be effective (Calvete et al., 2013). The contradictory locus of control findings suggest a need for further research into interactional models, particularly in diverse cultural contexts.

LIMITATIONS AND FUTURE DIRECTIONS

The study's small sample size (N = 100) and use of convenient sampling limit generalizability. The focus on private schools in Delhi excludes government school students and those from different socioeconomic backgrounds. Mediating factors like parental encouragement or home environment were not explored, despite their relevance (Gosain, 2019; Mahajan, 2015). Future research should use larger, random samples and include qualitative methods, such as interviews, to validate findings. Advanced statistical techniques, like structural equation modeling, could elucidate interactional effects among variables.

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