



COMPARATIVE STUDY ON SOCIAL ANXIETY AND SELF-ESTEEM AMONG STEM AND NON-STEM

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ABSTRACT

This study examines the relationship between social anxiety and self-esteem among STEM and Non-STEM students, exploring differences based on academic discipline and gender. Statistical analyses, including t-tests, ANOVA, and Pearson's correlation, were conducted to test six hypotheses. Results indicated no significant difference in social anxiety and self-esteem between STEM and Non-STEM students, suggesting that academic discipline alone does not strongly influence these psychological traits. Additionally, gender-based differences in social anxiety and self-esteem were not significant, challenging common stereotypes.

A weak negative correlation was found between social anxiety and self-esteem, implying that higher self-esteem may slightly reduce social anxiety, but the relationship is not substantial. The negative correlation was marginally stronger in STEM students, but the difference was negligible. These findings highlight the complexity of psychological experiences in academia and suggest that other factors, such as social support, institutional resources, and individual coping mechanisms, play a more significant role in shaping student well-being. Future research should explore these additional variables to gain a deeper understanding of the factors influencing social anxiety and self-esteem in college students.

CHAPTER I

INTRODUCTION

1.1 CONTEXT OF THE STUDY

Social anxiety and self-esteem are two critical psychological constructs shaping the academic, social, and emotional experiences of young adults. According to the American Psychological Association (2018), social anxiety is the fear of social situations where embarrassment or negative evaluation may occur. It is marked by avoidance behaviours, fear of criticism, and difficulties in forming meaningful relationships. The effects are far-reaching, influencing interpersonal relationships, academic performance, and career development.

On the other hand, self-esteem reflects an individual's evaluation of their worth and abilities. High self-esteem acts as a buffer against anxiety, empowering individuals to face challenges with resilience. Conversely, low self-esteem is associated with self-doubt and increased vulnerability to anxiety and emotional distress.

Social anxiety can range from mild discomfort in social settings to a debilitating disorder that interferes with daily functioning. It is influenced by a combination of biological, psychological, and environmental factors. Genetically, individuals with a family history of anxiety disorders are more prone to developing social anxiety. Neurologically, hyperactivity in the amygdala heightens sensitivity to perceived threats and criticism. Cognitively, those with social anxiety often display distorted thinking patterns, focusing on potential negative evaluations and engaging in self-focused attention, which intensifies anxiety. Early experiences such as bullying or rejection can also reinforce this fear.

Symptoms of social anxiety include:

- Emotional: Intense fear before, during, or after social interactions.
- Cognitive: Persistent self-doubt, worry about being judged.
- Physical: Rapid heartbeat, sweating, trembling, nausea, and in severe cases, panic attacks.

Social anxiety affects academic performance—students may avoid presentations or group work—and limits professional development through difficulties in networking or leadership roles. It also impacts personal relationships, often leading to isolation.

Self-esteem, meanwhile, plays a foundational role in shaping emotional stability, social relationships, and success in academics and careers. High self-esteem promotes confidence and adaptability, while low self-esteem may lead to social withdrawal and heightened sensitivity to failure. Like social anxiety, self-esteem is shaped by childhood experiences, social feedback, and cognitive processing. Supportive parenting and peer validation foster a positive self-concept, while criticism and neglect can damage it.

Self-esteem is also categorized into:

1. Global Self-Esteem: Overall sense of self-worth.
2. Situational Self-Esteem: Self-worth that varies across contexts.
3. Implicit Self-Esteem: Unconscious evaluations influencing behaviour.

Cognitive theories suggest that individuals with low self-esteem engage in negative self-talk, reinforcing feelings of inadequacy. Social comparisons can exacerbate this, especially in competitive academic environments. Neuroscientific studies have found that higher self-esteem is associated with decreased activity in brain regions related to processing social rejection, which may explain why confident individuals are more resilient to criticism.

Both constructs—social anxiety and self-esteem—are interconnected. High social anxiety often correlates with low self-esteem, as the fear of judgment diminishes one's confidence. Conversely, high self-esteem enables individuals to manage social challenges more effectively. Understanding this inverse relationship is essential, especially in the context of academic settings, where students face varying social and psychological pressures.

Academic disciplines differ in the environments they create, which can influence students' mental health. STEM (Science, Technology, Engineering, and Mathematics) disciplines are typically structured, performance-driven, and oriented toward technical precision and quantifiable outcomes. While this fosters critical thinking, it also contributes to heightened stress and limited opportunities for social interaction. Heavy workloads, constant assessments, and competitive peer dynamics often increase anxiety. Many STEM tasks are solitary—coding, problem-solving, research—further isolating students and reducing opportunities to build social networks, thereby amplifying social anxiety.

In contrast, Non-STEM fields—such as humanities, arts, and social sciences—often promote collaborative learning, creativity, and subjectivity in evaluation. Activities like group discussions and team projects enhance social engagement and may boost self-esteem through increased peer interaction and feedback. However, ambiguity around career prospects and societal undervaluation of Non-STEM disciplines may still lead to uncertainty and lower self-confidence in some students.

Gender dynamics further influence the relationship between social anxiety and self-esteem. Research shows that female students in STEM fields report higher social anxiety compared to their male counterparts, often due to societal stereotypes and underrepresentation in these domains. The pressure to prove one's competence in male-dominated fields can intensify self-doubt and anxiety in female students. On the other hand, male students in Non-STEM fields may face societal stigma about their academic choices, which could negatively impact their self-esteem.

The inverse relationship between social anxiety and self-esteem has significant implications for academic and personal development. Students with high self-esteem are better equipped to handle academic challenges and social situations, while those with high social anxiety may underperform or withdraw due to low confidence. Addressing both constructs simultaneously is essential for fostering overall well-being.

Despite growing recognition of mental health issues among college students, few studies have focused on how academic disciplines influence social anxiety and self-esteem. Most research treats these variables independently, without considering the specific academic and social contexts in which they arise. This study aims to bridge that gap by comparing the levels of social anxiety and self-esteem among STEM and Non-STEM students. It also explores the interaction between these variables within each academic stream, offering insights into how the educational environment shapes students' psychological experiences.

In India, these questions are especially relevant. Academic choices are heavily influenced by societal expectations, parental pressure, and perceptions of career success. STEM fields are often seen as prestigious and financially rewarding, which drives many students into them, sometimes against their personal interests. This can lead to dissatisfaction, anxiety, and isolation. While Non-STEM fields are gaining acceptance, they still face stigma regarding job stability and economic viability, which can affect the self-esteem of students pursuing these subjects.

By exploring the psychological consequences of these choices, this study hopes to offer culturally informed insights into the challenges faced by Indian college students. It also aims to inform the development of tailored mental health support and academic guidance systems. For instance, identifying the stressors contributing to social anxiety in STEM fields could help institutions create more inclusive and collaborative learning environments. Similarly, recognizing factors that impact self-esteem in Non-STEM students may help develop strategies to improve their academic confidence and motivation.

Furthermore, addressing gender disparities is crucial for creating equitable educational experiences. Understanding the unique pressures faced by female STEM students and male Non-STEM students can lead to better support systems that accommodate diverse needs and break down harmful stereotypes.

In conclusion, this comparative study of social anxiety and self-esteem among STEM and Non-STEM students is more than an academic exercise—it is a step toward understanding the complex psychological, social, and cultural forces that shape student experiences. By examining these constructs within academic contexts, we can better address the unique challenges faced by students and help foster environments that support mental health, personal growth, and academic success.

1.2 CONCEPTUAL AND OPERATIONAL DEFINITION OF KEY TERMS

1. Social Anxiety

Definition:

Social anxiety refers to the fear or discomfort in social situations where an individual perceives the possibility of being negatively evaluated by others. It manifests as a heightened sensitivity to social interactions, often accompanied by avoidance behaviors and physiological symptoms.

Operational Definition:

In this study, social anxiety will be measured using the Social Interaction Anxiety Scale (SIAS). The SIAS is a 20-item scale that assesses anxiety in social interactions, such as speaking in front of others or engaging in one-on-one conversations. Participants will respond to each item on a Likert scale (1 = Not at all characteristic, 5 = Extremely characteristic), and the total score will reflect the overall level of social anxiety. Higher scores on the SIAS indicate higher levels of social anxiety. The scale's reliability and validity have been well-documented in diverse populations, making it an appropriate choice for this study.

2. Self-Esteem

Definition:

Self-esteem is the overall evaluation of one's worth and value. It reflects an individual's self-confidence, self-respect, and sense of self-acceptance. High self-esteem indicates a positive self-image, while low self-esteem is often linked to feelings of inadequacy and self-doubt. Self-esteem is a multifaceted construct influenced by personal achievements, social relationships, and external feedback.

Operational Definition:

In this study, self-esteem will be assessed using the Rosenberg Self-Esteem Scale (RSES). The RSES is a widely used 10-item scale that measures global self-worth. Participants will rate each statement on a 4-point Likert scale (1 = Strongly disagree, 4 = Strongly agree), with higher scores indicating higher self-esteem. The total score will be used to determine the overall self-esteem level of the participants. The RSES is particularly valuable for this study because it is concise yet comprehensive, enabling efficient data collection without compromising depth.

3. Academic Stream:

Definition:

The academic stream refers to the participants' primary area of study, distinguishing between STEM and non-STEM disciplines. The academic environment, course demands, and peer expectations often vary significantly between these streams, influencing students' experiences and mental health outcomes.

Operational Definition:

The academic stream of the participants (STEM vs. Non-STEM) is a categorical variable that differentiates between students in Science, Technology, Engineering, and Mathematics (STEM) fields and those in Non-STEM disciplines (e.g., Humanities, Arts, Social Sciences).

1.3 OBJECTIVES OF THE STUDY

1. The primary objective of this study is to compare the levels of social anxiety and self-esteem among STEM and Non-STEM students. Specifically, the study aims :
2. To examine differences in social anxiety levels between STEM and Non-STEM students.
3. To assess differences in self-esteem levels between STEM and Non-STEM students.
4. To explore the relationship between social anxiety and self-esteem within and across these groups.
5. To investigate gender differences in social anxiety and self-esteem in STEM and Non-STEM students.

1.4 HYPOTHESES OF THE STUDY

1. STEM students exhibit higher levels of social anxiety compared to Non-STEM students.
2. Non-STEM students report higher self-esteem levels than STEM students.
3. There is a negative correlation between social anxiety and self-esteem among all students.
4. Female STEM students report higher social anxiety levels compared to male STEM students.
5. Male Non-STEM students report higher self-esteem than female Non-STEM students.
6. The negative relationship between social anxiety and self-esteem is stronger among STEM students than Non-STEM students.

1.5 LITERATURE REVIEW

The relationship between academic discipline, mental health, and self-perception has been explored in various contexts. Parashar et al. (2019) evaluated stress levels among teachers in South Delhi, identifying discipline and motivation as significant sources of stress. These findings align with earlier studies by Kyriacou and Sutcliffe (1978) and Johnson et al. (2005), which highlighted the pressures associated with performance and classroom management. Although the focus was on educators, similar dynamics are observed in academic settings, where students face stressors tied to discipline and achievement expectations. STEM students, in particular, report heightened anxiety due to the high-stakes nature of their academic environment and limited opportunities for social interaction (Zhou et al., 2020).

Self-esteem, on the other hand, has been shown to vary significantly across academic streams. Smith and McCord (2018) noted that Non-STEM students often exhibit higher self-esteem due to subjective assessment methods and a greater emphasis on creative expression. In contrast, Brown et al. (2019) highlighted that STEM students face challenges in maintaining high self-esteem due to rigid evaluation systems and an emphasis on technical competencies. These findings suggest that the academic environment plays a pivotal role in shaping students' self-perception.

Research has also demonstrated a robust inverse relationship between social anxiety and self-esteem. Leary and Kowalski (1995) documented that individuals with high social anxiety often report lower self-esteem, as fear of judgment undermines their sense of self-worth. Harter et al. (2017) extended this understanding by showing that students with higher self-esteem are better equipped to manage social anxiety, emphasizing the potential for interventions that target self-esteem enhancement.

Gender differences further complicate this relationship. Klassen and Chiu (2010) found that women reported greater emotional stress manifestations, while Wang et al. (2018) observed higher social anxiety among female STEM students, which they attributed to cultural stereotypes and societal expectations. Additionally, Samad et al. (2010) linked joint family dynamics to professional distress, suggesting that cultural and familial expectations significantly influence psychological outcomes.

These findings underscore the multifaceted nature of social anxiety and self-esteem, highlighting the need for comparative studies that account for academic stream, gender, and cultural context.

The relationship between social anxiety disorder (SAD) and self-esteem has been a focal point in

psychological research, particularly among young adults. A study conducted by Sherin Roshan et al. (2022) at Believers Church Medical College and Hospital examined this association and provided valuable insights into the prevalence and impact of these conditions.

Social anxiety disorder is characterized by an intense fear of social interactions, leading to avoidance behaviors that can significantly impair daily functioning. Research indicates that SAD is often underdiagnosed, particularly in populations such as medical students, where performance pressure is high (Shah & Kataria, 2010). The study by Roshan et al. found that 26.6% of participants experienced symptoms of social anxiety, with notable rates of social phobia.

A critical finding of the study was the strong inverse relationship between self-esteem and social anxiety. Participants with low self-esteem were found to be 5.33 times more likely to develop social anxiety disorder compared to those with higher self-esteem. This aligns with the findings of Acarturc et al. (2009), who also noted that individuals with low self-esteem are at greater risk of experiencing social anxiety. The prevalence of low self-esteem in the study population was 17.9%, with a higher incidence among females, reflecting trends seen in previous research (Bidyadhar et al., 2019).

The study further revealed that among participants with low self-esteem, 57.14% exhibited symptoms of social anxiety disorder. This statistic underscores the importance of self-perception in mental health. Baumeister et al. (2005) emphasized that low self-esteem can lead to heightened vulnerability to anxiety disorders, suggesting that improving self-esteem may mitigate social anxiety symptoms.

Learning satisfaction is a crucial indicator of educational effectiveness and is influenced by several factors, including self-efficacy, enjoyment, and self-exploration. Self-efficacy, rooted in Bandura's social cognitive theory, refers to an individual's belief in their ability to succeed in specific tasks (Bandura, 2006). Higher levels of self-efficacy are associated with improved academic performance and increased motivation (Karadag et al., 2021). Enjoyment, as defined by Raedeke (2007), is a positive affective response that contributes significantly to a learner's engagement and overall satisfaction with the learning experience. Furthermore, self-exploration involves the conscious pursuit of knowledge related to one's career and is linked to personal development and identity formation (Flum & Kaplan, 2006).

Gender differences in social anxiety were also noted. Although females reported higher levels of social anxiety, the differences were not statistically significant, a finding supported by Mascarenhas et al. (2019). This suggests that while females may experience more pronounced anxiety, the underlying factors

contributing to SAD may be similar across genders.

The study by Roshan et al. (2022) highlights the significant association between low self-esteem and social anxiety disorder among young adults. The findings reinforce the need for interventions focused on enhancing self-esteem as a strategy to reduce social anxiety symptoms. This research contributes to the growing body of literature that explores the interplay between self-esteem and social anxiety, emphasizing the necessity of addressing psychological well-being in educational settings. Future studies should consider longitudinal approaches to further investigate these relationships over time.

Social connectedness has also been extensively studied for its impact on psychological well-being, particularly regarding anxiety, self-esteem, and social identity. A study conducted by Lee and Robbins (1998) highlights a negative correlation between social connectedness and trait anxiety. Their research found that individuals with a stronger sense of connectedness are less likely to experience anxiety, underscoring the role of social relationships in maintaining mental health. Women's experiences with social connectedness reveal further nuances. Lee and Robbins observed that women with high levels of social connectedness reported greater social identification, particularly in environments characterized by high cohesion. In contrast, women with low levels of connectedness exhibited minimal differences in their social identification across varying levels of cohesion, demonstrating the importance of connectedness in shaping social identity.

Additionally, the relationship between social connectedness and self-esteem has been explored in depth. According to Lee and Robbins (1998), social connectedness positively correlates with state self-esteem across various contexts, suggesting that individuals who feel a strong sense of connectedness tend to have higher self-worth. However, their study also indicates that connectedness does not significantly impact state anxiety, which calls for further research into how connectedness influences specific aspects of anxiety regulation.

The transition from campus life to broader social interactions presents additional challenges for students, often leading to heightened social anxiety. A study conducted by He (2022) found that this anxiety often manifests as withdrawal, depression, and indifference, significantly impacting students' academic performance and social experiences. The research highlights that self-esteem serves as a crucial regulatory mechanism, enabling individuals to navigate new social environments and enhancing emotional well-being. Social anxiety, characterized by fear and apprehension in interpersonal situations, is often rooted in the fear of negative evaluation by others (Baldwin & Main, 2022). Guo (2022) emphasizes that self-evaluation and

social skills are pivotal in determining the levels of social anxiety experienced by individuals. Similarly, epidemiological studies conducted by He (2022) reveal that social anxiety is prevalent among college students and is exacerbated by both external environmental influences and subjective feelings.

Interpersonal trust has also been identified as a significant factor influencing social anxiety. A foundational study by Rotter (1967) defines trust as the expectation that the words and promises of others can be relied upon. Researchers, including He (2022), have established a strong correlation between interpersonal trust and social anxiety, suggesting that lower interpersonal trust can exacerbate feelings of anxiety in social contexts. Rotter's findings highlight how trust fosters positive interpersonal relationships, whereas its absence can lead to heightened social anxiety, particularly among college students navigating complex social dynamics.

The relationship between self-esteem and social anxiety has also been well-documented. A study conducted by Robins et al. (2001) reveals that individuals with high self-esteem are more likely to exhibit emotional stability and confidence in social interactions. Conversely, Leary et al. (1995) found that low self-esteem heightens sensitivity to interpersonal rejection, which in turn increases social anxiety. These findings suggest that enhancing self-esteem may serve as a protective factor against social anxiety, facilitating better interpersonal relationships and reducing anxiety levels.

Research has also explored the underrepresentation of females in Science, Technology, Engineering, and Mathematics (STEM) fields, with studies identifying this as a significant contributor to the global skills shortage in these areas. A study by Wang and Degol (2017) underscores the role of self-confidence in math and science in shaping career aspirations, finding that female students often underestimate their competencies compared to their male peers. This finding aligns with Correll's (2001) work, which reveals that female students' diminished self-efficacy and motivation in STEM subjects are often compounded by societal stereotypes that discourage their engagement.

Further research, such as Murphy et al.'s (2019) investigation, demonstrates how societal stereotypes negatively influence women's self-perception, contributing to lower participation in STEM fields. Dweck's (2006) goal-orientation theory offers a potential solution, suggesting that students with a growth mindset—who view intelligence as malleable—exhibit higher self-efficacy and are more likely to pursue STEM careers. Degol et al. (2018) reinforce these findings, emphasizing the importance of fostering self-confidence among female students in STEM to address gender imbalances.

Self-esteem, a critical aspect of psychological health, has also been studied extensively concerning its relationship with gender. A foundational study by Josephs (1992) provides insights into how societal norms and expectations shape self-esteem, showing that males often exhibit higher self-esteem levels than females. This disparity is further supported by research conducted by Twenge and Campbell (2001), which identifies consistent gender differences in self-esteem across cultures and demographics. Josephs (1992) attributes this disparity to societal reinforcement of traits such as assertiveness and independence in boys, compared to the societal pressures on girls to prioritize appearance and relational success.

Josephs (1992) applies social comparison theory to explain how women often evaluate their worth against societal ideals that promote unattainable standards of beauty and success, leading to negative self-evaluations. Gender socialization also plays a crucial role, as boys and girls are raised with different expectations that influence their self-perception and confidence. Studies show that women's self-esteem tends to fluctuate more than men's, correlating with social relationships and societal pressures, which contributes to a more fragile sense of self-worth (Twenge & Campbell, 2001).

Understanding the relationship between gender and self-esteem is critical for developing effective interventions. A study conducted by Leary et al. (1995) emphasizes that programs targeting self-esteem enhancement must consider gender-specific factors to be effective. For example, interventions aimed at young girls should focus on promoting resilience against societal pressures and fostering self-acceptance, while those for boys might emphasize emotional expression and vulnerability. By addressing the unique challenges faced by each gender, such interventions can significantly improve self-esteem and psychological well-being.

The relationship between social interaction anxiety and self-esteem has garnered significant attention in psychological research, particularly among university students. A study conducted by Bashir and Shah (2018) at Kashmir University examined this relationship, highlighting the emotional challenges faced by students in social situations. The study revealed a negative correlation between social interaction anxiety and self-esteem,

indicating that higher levels of anxiety are associated with lower self-esteem. This finding aligns with earlier research by Izgiç et al. (2004), which also identified a significant negative relationship between social phobia and self-esteem among university students in Turkey.

The concept of social anxiety disorder, characterized by an intense fear of social situations, has been extensively studied. According to the American Psychiatric Association (2013), individuals with social anxiety disorder often experience excessive fear of humiliation or embarrassment in social settings, leading to avoidance behaviors. This aligns with the observations of Ghaedi et al. (2010), who noted that social phobia significantly impacts the quality of life among college students. The findings of Bashir and Shah (2018) reinforce this notion, as their study indicated that 23% of the variance in self-esteem could be attributed to social interaction anxiety, suggesting a substantial impact on students' self-worth.

Moreover, the study by Bashir and Shah (2018) supports the assertion made by Ganapathi et al. (2017) that increased levels of social anxiety are linked to reduced academic performance and self-esteem. Their research underscores the importance of addressing mental health issues in educational settings, as anxiety can hinder academic success and overall well-being. The negative correlation between self-esteem and social anxiety found in Bashir and Shah's study is consistent with the work of Ahmad et al. (2013), who reported similar findings among adolescents, emphasizing the critical role of self-esteem in mitigating the effects of social anxiety.

Interestingly, Bashir and Shah (2018) found no significant differences in social interaction anxiety and self-esteem based on gender or residence. This finding is supported by studies conducted by Baños et al. (2007) and Stewart and Mandrusiak (2007), which suggested that gender differences in social anxiety may not be as pronounced as previously thought. Additionally, Joshi and Srivastava (2009) found no significant differences in self-esteem between rural and urban adolescents, further corroborating the findings of Bashir and Shah.

The implications of these findings are profound, suggesting that universities should implement programs aimed at enhancing self-esteem among students to alleviate social interaction anxiety. Awareness programs, workshops, and seminars could be beneficial in fostering a supportive environment that encourages personal growth and reduces anxiety. The need for such interventions is underscored by the work of Shepherd and Edelman (2009), who highlighted the interrelationship between social anxiety, depression, and coping mechanisms among university students.

Recent research has highlighted a concerning rise in mental health challenges among college students, particularly in the areas of stress and anxiety, which significantly impact academic performance. A nationwide survey indicated that approximately 40% of students reported stress, while 29% identified anxiety as a major

barrier to their educational success (American College Health Association [ACHA], 2019). Stress is often characterized as an individual's perception of being overwhelmed by circumstances, whereas anxiety is typically linked to unresolved stressors (Lazarus and Folkman, 1984).

The prevalence of stress and anxiety among college students necessitates a comprehensive approach to mental health support, particularly within the STEM disciplines, where high-stakes academic environments can exacerbate these issues (Muller et al., 2017; England et al., 2019). Research indicates that students experiencing high levels of stress are at a greater risk of attrition, and anxiety can adversely affect persistence in their chosen fields of study (England et al., 2017).

The literature consistently demonstrates a significant negative correlation between social interaction anxiety and self-esteem among university students. The study conducted by Bashir and Shah (2018) contributes to this body of knowledge, reinforcing the importance of addressing mental health issues in educational settings. Future research should continue to explore these relationships, particularly in diverse populations, to develop effective interventions that promote psychological well-being among students.

In summary, the literature underscores the significant mental health challenges faced by college students, particularly in STEM fields, and emphasizes the pivotal role of instructors in mitigating these issues. By adopting evidence-based strategies, educators can create a supportive learning environment that fosters student well-being and academic success. Future research should continue to explore the efficacy of these interventions across diverse student demographics and academic contexts.

1.6 STATEMENT OF THE PROBLEM

The mental health of college students is a growing concern, yet there remains limited understanding of how academic disciplines influence psychological constructs such as social anxiety and self-esteem. Social anxiety, characterized by fear and avoidance of social situations, is particularly prevalent among students navigating competitive academic environments. Self-esteem, defined as an individual's evaluation of their worth, serves as a buffer against stress and anxiety, fostering resilience and confidence. These constructs are interrelated but manifest differently depending on academic and social contexts.

Social anxiety and self-esteem are two of the most critical psychological constructs shaping young adults' academic, social, and emotional experiences. The American Psychological Association defines social anxiety as the "fear of social situations in which embarrassment may occur (e.g., making conversation,

meeting strangers, dating) or there is a risk of being negatively evaluated by others (e.g., seen as stupid, weak, or anxious). Social anxiety involves apprehensiveness about one's social status, role, and behavior." This form of anxiety often manifests as avoidance behaviors, fear of negative evaluation, and difficulties in forming meaningful social connections. Its impacts are far-reaching, affecting not only interpersonal relationships but also academic performance and career development. On the other hand, self-esteem, which reflects an individual's overall evaluation of their worth and abilities, acts as a protective factor against such anxieties. High self-esteem empowers individuals to face challenges with confidence and resilience, whereas low self-esteem is frequently associated with self-doubt and heightened vulnerability to anxiety.

Research indicates that the relationship between social anxiety and self-esteem is complex and bidirectional. High levels of social anxiety can lead to decreased self-esteem due to constant negative self-evaluation and avoidance behaviors. Conversely, low self-esteem can increase vulnerability to social anxiety, as individuals with poor self-worth may be more sensitive to perceived social threats. This dynamic interaction underscores the importance of exploring both constructs simultaneously, particularly in academic environments where social comparisons and performance pressures are prevalent.

STEM (Science, Technology, Engineering, and Mathematics) students often face high academic pressure, rigorous evaluations, and limited social interaction opportunities, potentially exacerbating social anxiety and negatively affecting self-esteem. The emphasis on objective performance metrics and individual success in STEM fields can lead to a heightened fear of failure and social comparison, further intensifying anxiety levels. Additionally, the competitive nature of STEM courses may discourage collaborative learning and peer support, isolating students and reducing opportunities for positive social reinforcement.

Conversely, Non-STEM students, while often benefiting from creative and collaborative environments, may face uncertainties about career prospects, which could influence their self-esteem and anxiety levels differently. Non-STEM disciplines, such as humanities and arts, typically involve subjective assessments and greater flexibility in learning approaches, which may contribute to a more supportive peer culture. However, the perceived lack of job security and societal undervaluation of these fields can introduce unique stressors that impact self-esteem negatively.

While substantial attention has been given to the experiences of STEM students, there is a striking lack of research examining the psychological well-being of Non-STEM students. Specifically, studies exploring social anxiety, general anxiety, and self-esteem among Non-STEM students remain sparse, leaving

a critical gap in understanding the challenges faced by these students. This oversight is significant, as it limits the ability of institutions to design tailored interventions that address the unique mental health needs of students across diverse disciplines. Moreover, most research on university students' mental health tends to focus on broader aspects of stress and depression, often neglecting the nuanced and interconnected roles of social anxiety and self-esteem. This lack of comprehensive investigation into these constructs, particularly among Non-STEM students, underscores the urgent need for further research in this area.

The influence of academic discipline on psychological well-being also intersects with gender. Studies have shown that female students, particularly in STEM fields, report higher levels of social anxiety and lower self-esteem compared to their male counterparts. This disparity is often linked to cultural stereotypes, gender biases, and underrepresentation in technical fields, which may amplify performance anxiety and self-doubt among female students. In contrast, male students in Non-STEM fields may experience societal pressure related to career expectations, contributing to lower self-esteem and increased anxiety.

Despite the growing recognition of mental health challenges among college students, little is known about how social anxiety and self-esteem vary between STEM and Non - STEM disciplines. Existing research tends to examine these constructs in isolation or within limited contexts, neglecting the broader academic and cultural influences that shape student experiences. This gap is significant because these constructs are not only interrelated but also shaped by unique academic and social environments, including differences in grading practices, peer support, and career expectations. Furthermore, the limited focus on Non- STEM students perpetuates an imbalance in understanding how discipline-specific factors contribute to mental health challenges, leaving a substantial portion of the student population underserved in terms of tailored support.

By addressing this gap, the present study seeks to understand the psychological profiles of students in different disciplines, exploring whether and how academic environments contribute to differences in social anxiety and self-esteem. Investigating this relationship further can provide insights into how educational institutions can create more supportive environments that foster both academic success and psychological well-being. The findings could guide the development of targeted mental health interventions, such as peer mentoring programs, stress management workshops, and inclusive pedagogical strategies tailored to the needs of diverse student populations.

Furthermore, understanding the interaction between social anxiety and self-esteem across academic disciplines can inform policy changes aimed at promoting mental health awareness and reducing stigma within educational settings. By recognizing the distinct challenges faced by students in STEM and Non-STEM fields, institutions can better support holistic student development, empowering individuals to thrive academically, socially, and emotionally.

1.7 NEED AND SIGNIFICANCE OF THE STUDY

This study holds significant value in addressing the mental health challenges faced by college students across diverse academic disciplines. Social anxiety and self-esteem are pivotal constructs influencing academic success, interpersonal relationships, and overall well-being. Understanding how these constructs differ between STEM (Science, Technology, Engineering, and Mathematics) and Non-STEM students is crucial for identifying discipline-specific stressors and psychological outcomes.

STEM students often experience heightened social anxiety due to competitive environments, rigorous evaluations, and reduced opportunities for collaborative interactions. Conversely, Non-STEM students may benefit from creative and expressive learning environments that foster higher self-esteem, yet face uncertainties about career prospects that might influence their psychological well-being. By exploring these dynamics, this study provides insights into the mental health disparities shaped by academic contexts.

Additionally, the study examines gender differences, offering a nuanced understanding of how cultural expectations and academic demands impact male and female students differently. The findings can inform educators, counselors, and policymakers in designing tailored interventions to support student mental health.

In an era where academic pressures are escalating, this research contributes to fostering inclusive, supportive educational environments that prioritize both academic achievement and psychological well-being. Ultimately, it aims to enhance the quality of education and student life.

CHAPTER II METHOD

2.1 RESEARCH DESIGN

The study titled "Comparative Study on Social Anxiety and Self-Esteem Among STEM and Non-STEM Students" will employ a comparative and correlational research design to explore both differences and relationships between social anxiety and self-esteem across two groups—STEM and Non-STEM students. This methodological approach is particularly suitable for examining how these psychological constructs vary between academic disciplines and how they correlate within each group. Additionally, the study will explore the influence of gender on these variables, considering how it may moderate or amplify the relationship between social anxiety and self-esteem.

The comparative aspect of the design will focus on identifying whether significant differences exist in the levels of social anxiety and self-esteem between students in STEM and Non-STEM fields. Comparative studies are useful when examining how distinct environments influence psychological outcomes, as they allow for the identification of patterns across varied contexts. For example, STEM students, often exposed to performance-driven environments and frequent technical assessments, may exhibit higher social anxiety than their Non-STEM counterparts, who may experience different stressors related to subjective grading and creative expression.

The correlational component, on the other hand, will examine whether these variables are related within each academic group, providing insight into patterns and potential psychological trends. A correlational analysis will help determine whether higher social anxiety is consistently associated with lower self-esteem within each group, shedding light on whether the relationship is consistent across disciplines or varies with academic structure and expectations.

A quantitative research strategy will be adopted, as it allows for the systematic measurement of social anxiety and self-esteem using standardized instruments. The primary tools used will include the Social Anxiety Scale, designed to measure symptoms and severity of social anxiety, and the Rosenberg Self-Esteem Scale, a widely validated measure of self-esteem levels. These instruments will allow for the collection of numerical data, ensuring the objectivity and reliability of the findings. Furthermore, quantitative data allows for statistical analysis using tools like t-tests and Pearson's correlation coefficients, enabling precise comparisons between groups and relationships among variables.

The sample for this study will consist of college students from both STEM and Non-STEM academic programs, selected using a stratified purposive convenience sampling method to ensure adequate representation of both groups. Inclusion criteria will require participants to be full-time undergraduate students actively pursuing degrees in either STEM or Non-STEM fields. The sample will aim to include a balanced representation of gender, further supporting the secondary analysis of gender differences.

Data collection will be carried out through a structured survey containing the validated instruments alongside demographic questions for contextual analysis. The survey will be distributed electronically to reach a wider range of participants while ensuring confidentiality and anonymity. Ethical considerations, including informed consent and voluntary participation, will be strictly upheld throughout the research process.

This methodological approach is expected to provide a clearer understanding of how academic discipline influences psychological well-being while highlighting the impact of gender differences. The findings will help identify whether social anxiety and self-esteem are shaped more by the academic structure or whether gender plays a stronger moderating role in these psychological patterns. By examining both direct differences and correlations, the study will offer a comprehensive analysis, contributing valuable insights for educators and policymakers seeking to create healthier learning environments. It may also inform the development of targeted mental health interventions tailored to the unique stressors of both STEM and Non-STEM fields, such as peer support systems and mentorship programs aimed at reducing social anxiety and enhancing self-esteem in college students.

2.2 SAMPLE

This study will use stratified purposive convenience sampling to ensure proper representation from the two groups being targeted: both the STEM and the Non-STEM student populations. The number of participants projected is 100, with 51 students in STEM disciplines and 49 students in Non-STEM disciplines. It will ensure each group is given fair representation in return for more sizeable and reliable results.

Participants were selected using a stratified purposive convenience sampling method. The sample was divided into two strata—STEM and Non-STEM students—and individuals were purposively selected based on their eligibility (full-time undergraduate students aged 18–23). Recruitment was done through online forms, following a convenience-based approach. This would ensure a comprehensive evaluation of gender disparities forming a fundamental element of the research.

Participants will be selected from undergraduate students aged 18–23, currently enrolled in full-time programs at colleges. This age range ensures that the students are at an appropriate developmental stage to experience and express social anxiety and self-esteem issues.

2.3 INCLUSION AND EXCLUSION CRITERIA

Inclusion Criteria:

- Students currently enrolled in full-time undergraduate courses in STEM or Non- STEM disciplines.
- Students aged between 18–23 years.

Exclusion Criteria:

- Students enrolled in part-time courses or postgraduate programs.
- Students with diagnosed clinical mental health conditions (e.g., social anxiety disorder, depression) as this may skew the results.

2.4 INSTRUMENTS USED FOR THE STUDY

The study will use well-established scales to measure the two primary variables: social anxiety and self-esteem.

Social Anxiety

The Social Interaction Anxiety Scale (SIAS) will be used to measure participants' anxiety levels in social interactions. The SIAS is a widely used 20-item scale that assesses social anxiety in various situations, such as speaking in public, interacting with peers, and engaging in group discussions.

Reliability and Validity: The SIAS has been compared to other scales that measure social anxiety, including the Social Phobia and Anxiety Inventory (SPAI). Peters (2000) found that they were highly significantly correlated ($r = 0.86$, $P < 0.001$) suggesting the scales tap similar constructs. Clinician-rated severity of social phobia has also been found to be moderately related to SIAS scores (Brown, et al., 1997). The SIAS has been found to have strong sensitivity to treatment change (Cox, et al., 1998). However, it does not distinguish between social phobia and other anxiety disorders (Peters, 2000). Accordingly, it is recommended that the SIAS should be used as a tool to track treatment progress, and should not be heavily relied upon for differential diagnosis.

Self-Esteem:

The Rosenberg Self-Esteem Scale (RSES) will be used to assess the participants' overall self-worth. This 10-item scale is one of the most widely recognized and validated tools for measuring global self-esteem. It will be scored on a 4-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree."

Reliability and Validity: The Rosenberg Self-Esteem Scale presented high ratings in reliability areas; specifically, internal consistency was 0.77, and the minimum Coefficient of Reproducibility was at least 0.90 (M. Rosenberg, 1965, and personal communication, April 22, 1987). A varied selection of independent studies each using such samples as – parents, men over 60, high school students, and civil servants – showed alpha coefficients ranging from 0.72 to 0.87 (all fairly high). Test-retest reliability for the 2-week interval was calculated at 0.85, the 7-month interval was calculated at 0.63 (Silber & Tippet, 1965, Shorkey & Whiteman, 1978). The RES is closely connected with the Coopersmith Self-Esteem Inventory.

Both scales have been validated in previous research, ensuring that the study measures the intended constructs reliably. The data will be collected using Google Forms or another secure online platform, where participants can complete the questionnaires at their convenience.

2.5 STATISTICAL METHODS

Comparative analyses will be performed to explore differences in social anxiety and self-esteem between STEM and Non-STEM students. The following statistical methods will be used:

Independent t-tests:

A t-test is an inferential statistic used to determine if there is a significant difference between the means of two groups and how they are related. When data sets have a normal distribution, t-tests are used. The t-test is a statistical hypothesis test that uses the t-statistic, the values of the t-distribution, and the degrees of freedom to determine statistical significance. Under the null hypothesis, the t-test is a type of statistical hypothesis test in which the test statistic follows a student's t-distribution. When that scaling term is unknown, it is estimated based on the data collected, which leads to the use of the t-distribution instead of the normal distribution.

The t-test is particularly useful for determining whether two sets of data differ significantly. Testing to see if two populations' means differ significantly is one common example. There are several frequently used types of t-tests. The one-sample t-test is used to see if a given value differs from the mean of a single

population. The two-sample t-test, also known as the independent or unpaired t-test, compares the means of two independent groups to see if they are significantly different from each other. When the assumption of equal variances between the two samples is not met, a variation known as Welch's t-test is used.. In this study, it is used to compare the mean levels of social anxiety and self-esteem between STEM and Non-STEM students.

Pearson's Correlation Coefficient

Pearson Correlation is a statistical method that measures the similarity or correlation between two data objects by comparing their attributes and calculating a score ranging from - 1 to +1. A high score indicates high similarity, while a score near zero indicates no correlation. This method is parametric and relies on the mean parameter of the objects, making it more valid for normally distributed data

In the context of this study, Pearson's correlation was used to determine whether an increase in self-esteem was associated with a decrease in social anxiety (negative correlation), or if the variables were unrelated. It is important to note that correlation does not imply causation—it only measures association, not cause-and-effect.

2.6 DATA COLLECTION PROCEDURE

Participants will be recruited using non-probability stratified sampling, drawing students from various colleges offering STEM and Non-STEM programs. The study will focus on full-time undergraduate students aged 18–23 years currently enrolled in STEM (Science, Technology, Engineering, and Mathematics) or Non-STEM (Humanities, Arts, Social Sciences) disciplines. To ensure the relevance of the study, only students enrolled in these full-time programs will be included. Students enrolled in part-time or postgraduate courses, will be excluded from the study.

All potential participants will be provided with informed consent forms to ensure voluntary participation, guaranteeing that participants understand their rights, including confidentiality and the ability to withdraw from the study at any point without penalty.

Data will be collected using two widely recognized, validated tools:

1. Social Interaction Anxiety Scale (SIAS): This 20-item scale will assess social anxiety levels related to social interactions. Participants will rate their agreement with statements related to social situations on a 5-point Likert scale, where 1 = Not at all characteristic and 5 = Extremely characteristic. Higher scores on the SIAS indicate higher social anxiety.

2. Rosenberg Self-Esteem Scale (RSES): This 10-item scale will assess the participants' global self-esteem. Participants will rate their agreement with statements related to self-worth on a 4-point Likert scale, where 1 = Strongly Disagree and 4 = Strongly Agree. Higher scores indicate higher self-esteem.

Participants will have the option to complete the survey online (via a survey platform like Google Forms). The survey is expected to take approximately 15–20 minutes to complete. In addition to the primary measures, demographic data will be gathered to include participants' age, gender, academic stream (STEM or Non-STEM), and year of study.

2.7 CONCLUSION

This study follows a comparative and correlational design, employing quantitative approach, utilizing numerical data to examine the relationship between self-esteem and social anxiety among students from different academic streams. A descriptive and comparative research design is employed to explore differences between STEM and Non-STEM students. The study includes a sample of 100 college students aged between 18 and 23 years, with 50 participants from each academic stream. Participants are selected using a combination of simple random sampling and convenience sampling methods. Inclusion criteria require participants to be literate, within the specified age range, and currently enrolled in a college or university. Individuals outside the age range or not meeting the literacy requirement are excluded from the study.

Ethical clearance will be obtained from the relevant institutional review board to ensure that the research aligns with ethical standards. The study will adhere to strict ethical guidelines, including participant consent, confidentiality, and transparency, ensuring responsible conduct throughout the research process.

CHAPTER III

ANALYSIS AND INTERPRETATION

3.1 RESULTS AND DISCUSSION

In this chapter, the analysis of data is followed by a discussion of the research findings. Data were analysed to identify, describe, and explore the relationship between self-esteem and social anxiety among STEM and non-STEM students. The sample of college students from various academic disciplines to ensure a representative study. Psychological instruments were administered to assess self-esteem levels and social anxiety symptoms among the participants. The results obtained through statistical analysis are presented in this chapter, with discussions based on the research hypotheses.

The primary focus of this study is to analyze the impact of self-esteem on social anxiety across different academic disciplines. This study helps to understand how students in STEM and non-STEM fields experience self-esteem differently and how these variations contribute to the development or exacerbation of social anxiety symptoms. Pearson's correlation analysis and independent t-test analysis was used to test the research hypotheses, and the results and interpretations of the data are discussed below.

The present study aimed to examine and compare levels of social anxiety and self-esteem among undergraduate STEM and Non-STEM students. The study further explored whether there were significant differences in these psychological variables based on academic stream and gender, and whether a meaningful relationship existed between social anxiety and self-esteem. The sample consisted of 100 students, and the data was analyzed using descriptive statistics, Pearson's correlation, and independent samples t-tests.

Descriptive statistics for age, year of study, social anxiety, and self-esteem are presented in Table 1. The mean age of participants was 20.19 years (SD = 1.18), indicating a relatively young and consistent sample. Most participants were in their second or third year of study, with a mean year value of 2.67 (SD = 0.83). Social anxiety scores had a wide range (range = 56), with a mean of 34.11 (SD = 13.67), showing a broad variation in how students experience social anxiety. In contrast, self-esteem scores were more clustered, with a mean of 16.15 (SD = 1.84) and a narrower range of 9, suggesting relative consistency in self-esteem levels among students.

Table 3.1

Descriptive Statistics for Age, Year of Study, Social Anxiety Score, and Self-Esteem

Statistic	Age	Year of Study	Social Anxiety Score	Self-Esteem
Mean	20.19	2.67	34.11	16.15
Median	20.00	3.00	33.00	16.00
Mode	20	3	29	15
Standard Deviation	1.18	0.83	13.67	1.84
Range	6	3	56	9
Skewness	0.41	-0.60	-0.01	0.25
Kurtosis	0.95	-0.14	-0.85	-0.15

Note. N = 100. This table shows the central tendency, dispersion, and distribution shape for the variables under study.

Table 1 also shows skewness and kurtosis values, which suggest that the distributions of the main variables were reasonably normal. Social anxiety scores were nearly symmetrical (skewness = -0.01), and self-esteem scores were slightly positively skewed (skewness = 0.25). All variables had kurtosis values close to zero, indicating flat, evenly distributed data.

Pearson's correlation coefficients were calculated to examine the relationships among variables. As shown in Table 2, the correlation between social anxiety and self-esteem was negative but weak ($r = -0.10$), meaning that students with slightly higher self-esteem tended to report lower social anxiety. However, this relationship was not statistically significant. Therefore, Hypothesis 3, which predicted a negative correlation between social anxiety and self-esteem, was only partially supported—the trend exists, but is too weak to draw a firm conclusion.

Table 3.2*Pearson's Correlation Coefficient*

Variable	Age	Year of Study	Social Anxiety	Self-Esteem
Age	—	.32	.09	.09
Year of Study		—	-.07	.05
Social Anxiety			—	-.10
Self-Esteem				—

Note. N = 100. None of the correlations were statistically significant at $p < .05$.

The data also showed a weak negative correlation between year of study and social anxiety ($r = -0.07$), suggesting that students in higher academic years may experience slightly lower social anxiety. However, the relationship was again too weak to be considered meaningful. Age was weakly and positively correlated with both social anxiety and self-esteem ($r = 0.09$), further emphasizing that none of the demographic factors showed a strong association with the psychological variables under study.

To examine differences between STEM and Non-STEM students and test the study hypotheses, independent samples t-tests were conducted. Results are displayed in Table 3. When comparing social anxiety levels between STEM and Non-STEM students, the p-value was 0.090. Since this value is greater than the 0.05 threshold for significance, the difference is not statistically meaningful. Thus, Hypothesis 1, which stated that STEM students would exhibit higher levels of social anxiety than Non-STEM students, is rejected.

Table 3.3*Independent t-test Results for Social Anxiety and Self-Esteem*

Comparison	t Statistic	p-value	Interpretation
STEM vs Non-STEM (Social Anxiety)	1.72	0.090	No significant difference
STEM vs Non-STEM (Self-Esteem)	1.91	0.169	No significant difference
Female vs Male (STEM –Social Anxiety)	1.91	0.170	No significant difference
Male vs Female (Non-STEM – Self-Esteem)	1.91	0.170	No significant difference

Note: A p-value less than 0.05 indicates a significant difference. All comparisons showed $p > 0.05$, indicating no statistically significant differences.

A similar result was found when comparing self-esteem levels across academic streams. The p-value was 0.169, indicating no significant difference. Therefore, Hypothesis 2, which proposed that Non-STEM students would report higher self-esteem than STEM students, is also rejected. Although the mean self-esteem score of Non-STEM students was slightly higher, the difference was not statistically significant and likely due to random variation.

Gender-based comparisons within academic streams were also analyzed. Among STEM students, the difference in social anxiety levels between female and male participants was not significant ($p = 0.170$). Hence, Hypothesis 4, which predicted that female STEM students would experience higher levels of social anxiety than their male counterparts, is rejected. In a similar manner, when comparing self-esteem levels between male and female students within the Non-STEM stream, the result again showed no significant difference ($p = 0.170$). Thus, Hypothesis 5, which assumed that male Non-STEM students would report higher

self-esteem than female Non-STEM students, is also rejected. Although previous literature often highlights gender differences in social anxiety and self-esteem—particularly higher anxiety in female STEM students and lower self-esteem in male Non-STEM students—these trends did not emerge significantly in our findings. One possible reason could be the changing societal attitudes and increased awareness around gender equality and mental health, especially among younger college students. Over time, gender role expectations may be softening, allowing students to engage more freely in fields of interest without internalizing traditional stereotypes. Furthermore, mental health awareness campaigns on campuses might have reduced stigma around anxiety and self-doubt, encouraging more emotional openness among all genders.

It is also possible that both male and female students now face similar levels of academic pressure, peer comparison, and career uncertainty, reducing the psychological gap traditionally seen between genders.

Finally, Hypothesis 6 predicted that the negative correlation between social anxiety and self-esteem would be stronger in STEM students than in Non-STEM students. The analysis found that the correlation in STEM students ($r = -0.12$) was only slightly more negative than in Non-STEM students ($r = -0.09$), and this difference was not significant. Therefore, Hypothesis 6 is only partially supported. While the direction of the relationship aligns with the hypothesis, the difference in strength is too minimal to draw a definitive conclusion.

Taken together, these findings suggest that academic stream and gender do not significantly influence self-esteem or social anxiety among undergraduate students. The data reveals that both STEM and Non-STEM students generally experience similar psychological states, and that social anxiety and self-esteem are likely influenced by a range of personal, social, and contextual factors beyond academic discipline.

The weak but negative relationship observed between self-esteem and social anxiety supports earlier research suggesting that individuals with higher self-esteem may be less likely to experience social discomfort. However, in the current study, the relationship lacked statistical strength. The high variability in social anxiety scores compared to the relative consistency in self-esteem may reflect the role of personality traits, personal resilience, or life experiences in shaping anxiety responses more than academic environments do.

These results contribute to a broader understanding that academic stream alone is not a significant determinant of psychological well-being. It highlights the importance of adopting personalized, inclusive approaches to mental health support in university settings.

Rather than focusing interventions solely based on discipline or gender, attention should be given to individual student needs, coping mechanisms, and support systems.

3.2 MAJOR FINDINGS OF THE STUDY

- The majority of STEM and Non-STEM students demonstrated moderate levels of self-esteem, with only minimal variation between the two groups.
- Social anxiety levels varied widely among students, but there was no significant difference between STEM and Non-STEM students.
- No strong correlation was found between self-esteem and social anxiety. Although a weak negative relationship was observed, it was not statistically significant.
- Gender did not play a significant role in influencing either self-esteem or social anxiety levels among students in this study.
- The hypothesis that STEM students experience higher social anxiety and Non-STEM students have higher self-esteem was not supported by the statistical results.
- A slightly stronger negative correlation between self-esteem and social anxiety was observed among STEM students compared to Non-STEM, but the difference was negligible.

3.3 IMPLICATIONS OF THE STUDY

The findings of this study carry meaningful implications for student support systems and psychological interventions within academic institutions. The results challenge stereotypical beliefs that students from STEM fields are inherently more anxious or that Non-STEM students possess higher self-esteem. Since neither academic stream nor gender emerged as significant factors, this emphasizes the importance of moving beyond such generalizations when addressing student well-being.

Universities and colleges should focus on holistic and inclusive mental health programs that are not limited by academic discipline. The weak relationship between self-esteem and social anxiety also suggests that interventions should be multi-dimensional, accounting for personality traits, social environment, coping mechanisms, and emotional resilience.

Moreover, the uniformity of self-esteem levels implies that many students maintain a balanced self-view. Mental health initiatives should continue to encourage healthy self-reflection, promote coping strategies, and create supportive environments that foster both academic and emotional development.

3.4 CONCLUSION

This study aimed to explore the differences in self-esteem and social anxiety among STEM and Non-STEM undergraduate students, and to examine the potential relationship between the two. The results indicated no statistically significant differences between the two academic streams with respect to either self-esteem or social anxiety. Additionally, the correlation between the two psychological constructs, although negative, was too weak to establish a meaningful relationship.

Therefore, the study concludes that academic stream and gender are not strong indicators of self-esteem or social anxiety levels in college students. The observed patterns highlight the importance of recognizing the individual complexity of each student, rather than making assumptions based on field of study or gender.

These findings encourage further research to investigate additional variables that might impact self-esteem and anxiety—such as personal achievement, family background, emotional intelligence, and academic pressure.

3.5 LIMITATIONS OF THE STUDY

- The sample size was relatively limited, which may have impacted the statistical power of the findings.
- Participants were primarily drawn from a specific age group and geographical location, limiting the generalizability of results to wider populations.
- The study relied on self-reported data, which may be subject to response biases such as social desirability.
- Only two variables (self-esteem and social anxiety) were explored, without accounting for other factors like coping strategies, family background, or academic motivation.
- The cross-sectional design of the study prevents conclusions about causality between the variables studied.

3.6 SUGGESTIONS FOR FURTHER STUDY

- Future research should consider a larger and more diverse sample, including students from various educational institutions and regions to enhance generalizability.
- Including qualitative data through interviews or focus groups could offer deeper insights into the lived experiences behind self-esteem and social anxiety.
- Studies should explore additional variables such as emotional intelligence, academic stress, personality types, and coping mechanisms.
- Longitudinal studies may help in tracking changes over time and determining how academic progression influences self-esteem and anxiety.
- Comparative studies involving other academic disciplines, postgraduate students, or working professionals could provide more nuanced understanding of the psychological experiences tied to educational pathways.

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ANNEXURE

I. INFORMED CONSENT

Voluntary participation

Your participation in this study is as valuable as it will be voluntary. If you decide to take part in this study, you will be adhered to consent taking. After you sign the consent form, you are still free to withdraw at any time and without reason.

Informed Consent

I understand that this study is intended to measure '**Comparative Study On Social Anxiety And Self-Esteem Among Stem And Non-Stem Students**'. I understand that all information that I provided will be kept confidential and in any report on the results of this research, my identity will remain anonymous and my personal details will not be disclosed under any circumstance. I understand that I am free to contact the person involved in the research to seek further clarification and information. I have read and understand the provided information. I understand that my participation is voluntary and that I am free to withdraw at any time.

I am willing to take part in this study.

- Yes
- No

II. PERSONAL DATA SHEET

- Name (initials only):
- Age:
- Gender:
- Educational Qualification:
- Name of the College:

III. SOCIAL INTERACTION ANXIETY SCALE (SIAS)

Instructions:

For each item, please tap the box to indicate the degree to which you feel the statement is characteristic or true for you.

1. 1 I get nervous if I have to speak with someone in authority (teacher, boss, etc.).
2. I have difficulty making eye contact with others.
3. I become tense if I have to talk about myself or my feelings.
4. I find it difficult to mix comfortably with the people I work with.
5. I find it easy to make friends my own age.
6. I tense up if I meet an acquaintance in the street.
7. When mixing socially, I am uncomfortable.
8. I feel tense if I am alone with just one other person.
9. I am at ease meeting people at parties, etc.
10. I have difficulty talking with other people.
11. I find it easy to think of things to talk about.
12. I worry about expressing myself in case I appear awkward.
13. I find it difficult to disagree with another's point of view.
14. I have difficulty talking to people I am attracted to.
15. I find myself worrying that I won't know what to say in social situations.
16. I am nervous mixing with people I don't know well.
17. I feel I'll say something embarrassing when talking.
18. When mixing in a group, I find myself worrying I will be ignored.
19. I am tense mixing in a group.
20. I am unsure whether to greet someone I know only slightly.

IV. ROSENBERG SELF ESTEEM SCALE

Please record the appropriate answer for each item, depending on whether you Strongly agree, agree, disagree, or strongly disagree with it.

- 1 = Strongly agree
- 2 = Agree
- 3 = Disagree
- 4 = Strongly disagree

- 1 On the whole, I am satisfied with myself.
- 2 At times I think I am no good at all.
- 3 I feel that I have a number of good qualities.
- 4 I am able to do things as well as most other people.
- 5 I feel I do not have much to be proud of.
- 6 I certainly feel useless at times.
- 7 I feel that I'm a person of worth.
- 8 I wish I could have more respect for myself.
- 9 All in all, I am inclined to think that I am a failure.
- 10 I take a positive attitude toward myself.