



**A Comparative Study between Co-ed and Single-Sex Female College Students on
Imposter Syndrome and Self Efficacy**

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ABSTRACT

Earlier, women were not permitted from enrolling in educational institutions. Overtime, when this changed, women began to attend single-sex colleges, however there surrounded a lot of bias that male colleges were better than these female colleges. Therefore, slowly, there was a transition of women into coed institutions. These college environments would often hold stereotypes against female students which would affect their self-esteem and self-efficacy. Another observable phenomenon amongst these high achieving female students was Imposter Syndrome, where women would find it difficult to internalize their success. The purpose of the study is to explore the relationship between female students in Coed and Single Sex colleges on Imposter Syndrome and Self-Efficacy. For this research a sample of 62 female college going students from coed and girls-only colleges between ages of 18 to 23 years were considered. Standardized scales for Imposter Syndrome and General Self -efficacy were used in the study. The results showed a significant negative correlation between imposter syndrome and general self-efficacy. The results also revealed that the imposter feelings are more significantly

prevalent in female students that attend coed institutions than those who attend girls only colleges. Based on these results it is suggested that increased positive stereotypes about women in academia, fostering interaction with female faculty and creating a sense of belongingness in institution may aid in reducing imposter feelings.

Keywords: *Imposter Syndrome, Self-Efficacy, Female, College Sstudents, Coed, Single Sex, Bangalore*

INTRODUCTION

For a considerable period, the educational environment has dealt with the debate between Co-education and Single-sex education. Although there has been criticism towards single-sex education, as they may result in breeding of sexism due to segregation, there are certain evidence that point towards improved levels of confidence and self- efficacy among women in single-sex classes (Booth et al., 2018). Furthermore, a study by Kinzie et al. (2007), shows that women attending single sex colleges were shown to engage in higher order thinking, active learning and displayed higher levels of academic challenge as compared to women attending co-ed colleges.

There has been a prevailing view that male colleges were more prestigious than the all-female colleges, therefore, persuading women to transition to co-ed colleges. However, the college environments would often hold stereotypes about their abilities which would undermine the confidence of female students and dampen their enthusiasm (Dixon, 2009). According to Régner et al. (2014) the under-representation of women in STEM often arises from the gender stereotypes – called Stereotype threat - that manifest at as early as adolescence. According to Edwards (2019), these stereotype threats often underlie the anxiety which are especially prevalent among women in academia.

Another psychological phenomenon, Imposter Phenomenon, is shown to be prevalent particularly among female first-generation STEM Majors, which often leads to feelings of perceived fraudulence, lack of belongingness, negative stereotypes about women and poor psychological well-being (Trefts, 2019). Today, single-sex classes are used to encourage more women into STEM fields (Science, Technology, Engineering and Math) as it has been shown to promote greater sense of belongingness to the University and perceived social support from their peers (Rosenthal et al., 2011).

Imposter Syndrome

Imposter Phenomenon was initially described among high achieving women, who would attribute their success to external factors and were unable to internalize their success (Clance & Imes, 1978; Cusack et al., 2013). This phenomenon is associated with feelings of trait anxiety, introversion, shame, need to look smart for others, feelings of insecurity and self-doubt (Langford & Clance, 1993).

According to Sakulku and Alexander (2011) Imposterism refers to “a pervasive psychological experience of a person believing that they are a self-perceived intellectual fraud and fearing they may be recognized as an impostor.” Studies have shown that high imposter feelings mediate between psychological distress and performance avoidance and mastery avoidance goals among women in STEM fields (Yang et al., 2024).

Self-Efficacy

Perceived Self-efficacy are people's beliefs that determine how they think, feel, and motivate themselves to behave in certain ways. They are primarily shaped by four processes.

Cognitive processes involve organization and gathering of information, affective process, includes regulation of emotion and reaction, Motivation – determines the level of persistence and intensity of activation to some action, Self -regulation – that helps regulate the influence over our motivations, emotions, and behavior (Bandura, 1994).

According to Al-Abyadh and Azeem (2022), self-efficacy is shown to be influenced by self-management skills, which in turn influences academic achievement positively. Studies also show that although women may display less perceived self -efficacy in problem solving as compared to men, they do report better possibility for improving their perceived self-efficacy than men (Flores et al., 2014).

Purpose

The purpose is to compare the scores between female students in Coed and Single Sex colleges on Imposter Syndrome and Self-Efficacy.

Hypothesis

- There is significant difference in Imposter Syndrome beliefs of females who study in Coed colleges when compared to Girls-only colleges.
- There is significant difference in Self-efficacy of females who study in Coed colleges when compared to Girls-only colleges.

Methods

Sample

A total sample of 62 females in the age of 18 to 23 years was collected from the city of Bangalore.

Measures

- ***Clance Imposter phenomenon Scale (CIPS)***: The Clance Imposter Scale developed by Pauline Clance (1985), is a 20 item self-report measure of Imposter Phenomenon beliefs. The scale has an internal reliability of .91. The items are scored on 5-point rating scale ranging from 1 – not at all true to 5 – very true (Cusack et al., 2013).
- ***General Self -Efficacy Scale (GSE)***: The general self -efficacy scale developed by Schwarzer and Jerusalem (1979), is a 10-item self – report measure of self-efficacy. The scale has an internal reliability between .76 and .90. The items are scored on a scale ranging from 1 - Not at all true to 4 - Exactly true (Schwarzer, 2012).

Procedures

The questionnaires were created from the standardized scales that were used to measure the variables of the study and converted to a google form for the data collection. Based on the inclusion criteria in the form, the data was collected from the required sample and the participants were thanked for their participation in the study.

Analysis of Data

Results

The responses of the participants were analyzed using independent samples T-Test to compare the means of the Imposter Syndrome and General Self-Efficacy between female students in Coed colleges and Girls-only Colleges. The data was also subject to Pearson's Correlation, to find the correlation between Imposter Syndrome and General Self-Efficacy in the data set.

Table 1 <i>Correlation between Imposter Syndrome and General Self-Efficacy</i>					
		Imposter Syndrome		General Self-Efficacy	
Imposter Syndrome		—			
General Self-Efficacy		-0.442	***	—	
<i>Note. * $p < .05$, ** $p < .01$, *** $p < .001$</i>					

Table 2													
Independent Samples T-Test													
					Statistic		df		p				
Imposter Syndrome			Student's t		2.017		62.0		0.048				
General Self-Efficacy			Student's t		-0.900		62.0		0.372				
Note. $H_a \mu_{Coed} \neq \mu_{Girls}$													
Group Descriptives													
		Group		N		Mean		Median		SD		SE	
Imposter Syndrome		Coed		32		64.8		70.0		15.61		2.760	
		Girls		32		56.8		56.5		16.11		2.849	
General Self-Efficacy		Coed		32		29.8		30.0		4.33		0.766	
		Girls		32		30.8		30.0		4.28		0.757	

Discussion of Results

The results from the sample used shows a significant negative correlation between General Self – efficacy and Imposter Syndrome (-0.442, $p < .001$). These results are supported by the study conducted by Pákozdy et al. (2023), where they studied the relationship between imposter phenomenon and self-efficacy, perfectionism, and happiness in university students. Further, based on results of the independent t-test conducted on the sample, we can conclude that Imposter Syndrome is more prevalent among females in coed colleges, than in girls-only

colleges (2.017). There is no significant difference in self – efficacy between females in coed and girls-only colleges. These results stand like those in the study conducted by Shelley Robertson and Loyola University Chicago (1997).

Conclusion

The purpose of this research was to compare the scores between female students in Coed and Single Sex colleges on Imposter Syndrome and Self-Efficacy. A sample of 62 females college going students between the age of 18 to 23 years, based out of Bangalore were considered. Imposter Syndrome and General Self-efficacy was analyzed using standardized scales of the variables. Correlation between the two variables show that Self – efficacy and imposter syndrome are negatively correlation, i.e., presence of imposter feelings has negative impact on the student's self -efficacy. Results suggest that Imposter Syndrome is more prevalent in females' students of coed institutions than girls only institution. This proves the first hypothesis of the study – *“There is significant difference in Imposter Syndrome beliefs of females who study in Coed colleges when compared to Girls-only colleges.”* the results do not show any significant difference in self -efficacy between females' students in coed colleges and girls-only colleges. therefore, this disproves the second hypothesis – *“There is significant difference in Self-efficacy of females who study in Coed colleges when compared to Girls-only colleges.”*

Imposter feelings among students can be countered in coed institutions by enforcing more positive stereotypes about women in academia, encouraging more interactions between faculty and students and enforce belongingness in the areas of academia for women.

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