Anxiety, Depression, Stress, General Self-Efficacy and Specific Self-Efficacy: Comparison among Science and Social Science Students

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Abstract: *Most of the time, anxiety, stress, and depression are all interconnected and dependent on one another. The issues of anxiety, stress and depression are getting worse day-by-day. An individual's self-efficacy relates to his or her confidence in their ability to carry out the behaviour required to create particular performance outcomes. The tendency to live a happy life free of stress, anxiety, and sadness increases with self-efficacy. The present work deals with a correlational study on the Dichotomous variables: Social Science students and Science students, while Independent Variables are Anxiety, Depression. Stress, General Self-efficacy, Specific Self-efficacy using the DASS-21 and Self-Efficacy Scale on the post-graduate students. The findings of the study reveals that all the aforesaid variables are related*.

Keywords: Anxiety, Depression, Stress, General Self-Efficacy, Specific Self-Efficacy, Correlation

I. INTRODUCTION

Within the next ten years, depression will surpass cardiovascular disease as the second-leading cause of death worldwide. Currently, depression is a big issue on a global scale(Mahato et al., 2023).Long study sessions, challenging learning environments, sleep deprivation, and situations that interfere with daily life are all common at this time. Furthermore, these factors govern a person's capacity for social adjustment (Adhikari, 2022; Halder et al, 2022), social relationship and effects social participation and also reflects in social participations (Adhikari & Saha, 2021; Saha and Adhikari, 2021).Several studies have shown depression to be the most common reason for clinic visits and is common among students of higher education (Gayen and Sen, 2021; Sen et al. 2021; Mahato and Sen, 2021; Ansary et al. 2022). These characteristics, along with a lack of factors that improve quality of life, can lead to higher levels of stress, which can be detrimental to students' physical, mental, and emotional health as well as their academic performance (Mahato and Sen, 2021).General self-efficacy is the belief that one can handle a broad variety of stressful or demanding expectations, as opposed to specialised self-efficacy, which is restricted to the work at hand. Correlation has been used in many research to show the relationship between the variables. To determine if two variables are related, a statistical method known as correlation is utilized. This method looks at tangential relationships to pinpoint the components that are most closely connected to a specific body of information or frame of mind.Different dimension of survey research in education are correlational studies (Saha, 2012; Saha, 2013; Gayen & Sen, 2021; Sutradhar & Sen, 2022; Mahato et al., 2023a; Mahato et al., 2023b; Kundu et al., 2015), Cluster analysis (Mohanta et al., 2023; Sen et al., 2023; Gorain et al., 2022; Ansary et al., 2023; Saha, et al., 2021; Adhikari & Sen, 2023; Adhikari et al., 2023a; Adhikari et al., 2023b),non-parametric tests (Mahato & Sen, 2021; Haldar et al., 2022; Mahato et al., 2022; Saha & Adhikari, 2021), and parametric tests (Ansary et al. 2022; Khan et al, 2023; Khatun et al., 2022; Mahanti et al., 2016; Mondal & Saha, 2017; Mondal et al., 2018; Naik & Sutradhar, 2015; Naik et al., 2015; Roy & Saha, 2022; Roy & Saha, 2023; Roy et al., 2017; Saha, 2012; Saha, 2021) etc.

II. LITERATURE REVIEW

Mahato, Gayen and Mahato (2023a) indicated that there is no correlation between undergraduate students regarding self-efficacy and m-learning. Mahato and Sen (2023) investigated the relationship among three variables Contexts Knowledge (CK1), Technological Pedagogical Content Knowledge (TPCK) and Attitude towards Creative Teaching (ACT) and found significant relationship between them.Mahato, Gayen and Mahato (2023b) have found significant relationship of internet addiction between boys and girls, but no difference has been found in academic resilience. Mahato, Gayen and Mahato (2023c) have shown a strong correlation between internet addiction and cognitive dysfunction among higher secondary students.Sutradhar and Sen (2022) have not found a significant relationship between emotional maturity and academic achievement of B.Ed. trainees.Gorain et al. (2022) have investigated correlations among Internet Dependency and Social Isolation and found positive relationship between them.Sutradhar and Sen (2022) found that a strong correlation between study habits and emotional maturity.Kar and Saha (2021) found significant relationship between Adjustment Ability and Leadership style of undergraduate students of West Bengal.Kar and Saha (2021) revealed significant relationship between Emotional Intelligence and Leadership style of undergraduate students. Gorain et al. (2018) found that internet use and social isolation are found to be positively correlated.Mondal et al. (2018) found that neuroticism is highly correlated with internet affinity. Karmakar et al. (2016) found students from secondary schools and revealed significant relationship between IQ and height.Kar, Saha and Mondal (2016) investigated and found that Emotional Intelligence affects home, school and peer adjustment. Kundu, Saha and Mondal (2015) found that there is significant relationship between social intelligence and adjustment of U.G. level students.Naik, Dutta and Sutradhar (2015) found the negative relationship between mental health and Facebook addiction. Saha (2012) studied 100 randomly chosen secondary pupils from Birbhum District. He found that creativity and socioeconomic position are positively correlated, while Saha (2013) They found that creativity is positively co-related with environmental awareness.

2.1 Variables
Dichotomous variables: Social Science and Science Students
IndependentVariables-Anxiety,Depression.Stress,GeneralSelf-efficacy,SpecificSelf-efficacy.

2.2 Objectives
Objectives of this research work is to study the correlation between any two variables for Social Science and Science Postgraduate students are construct below-
- To study the relationship among Anxiety, Depression. Stress, General Self-efficacy, Specific Self-efficacy of Postgraduate Social Science students.
- To study the relationship among Anxiety, Depression. Stress, General Self-efficacy, Specific Self-efficacy of Postgraduate Science students.

2.3 Hypotheses
The researchers construct the following hypotheses according to formation of above two main objectives-

H_{01}: There is no significance relation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate Social Science students.

The above hypothesis H_{01} may divided into the following sub-hypotheses-

$H_{01}a$: There is no significant relation between anxiety and stress for the Social Science students of Postgraduate.

$H_{01}b$: There is no significant relation between anxiety and depression for the Social Science students of Postgraduate.

$H_{01}c$: There is no significant relation between anxiety and general self-efficacy for the Social Science students of Postgraduate.

$H_{01}d$: There is no significant relation between anxiety and specific self-efficacy for the Social Science students of Postgraduate.

$H_{01}e$: There is no significant relation between stress and depression for the Social Science students of Postgraduate.

$H_{01}f$: There is no significant relation between stress and general self-efficacy for the Social Science students of Postgraduate.

$H_{01}g$: There is no significant relation between stress and specific self-efficacy for the Social Science students of Postgraduate.

$H_{01}h$: There is no significant relation between depression and general self-efficacy for the Social Science students of Postgraduate.

$H_{01}i$: There is no significant relation between depression and specific self-efficacy for the Social Science students of Postgraduate.

$H_{01}j$: There is no significant relation between general self-efficacy and specific self-efficacy for the Social Science students of Postgraduate.

H_{02}: There is no significant relation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate Science students.

The above hypothesis H_{02} may divided into the following sub-hypotheses-

$H_{02}a$: There is no significant relation between anxiety and stress for the Science students of Postgraduate.

$H_{02}b$: There is no significant relation between anxiety and depression for the Science students of Postgraduate.

$H_{02}c$: There is no significant relation between anxiety and general self-efficacy for the Science students of Postgraduate.

$H_{02}d$: There is no significant relation between anxiety and specific self-efficacy for the female students of Post Graduate.

$H_{02}e$: There is no significant relation between stress and depression for the Science students of Postgraduate.

$H_{02}f$: There is no significant relation between stress and general self-efficacy for the Science students of Postgraduate.

$H_{02}g$: There is no significant relation between stress and specific self-efficacy for the Science students of Postgraduate.

$H_{02}h$: There is no significant relation between depression and general self-efficacy for the female students of Post Graduate.

$H_{02}i$: There is no significant relation between depression and specific self-efficacy for the Science students of Postgraduate.

$H_{02}j$: There is no significant relation between general self-efficacy and specific self-efficacy for the Science students of Postgraduate.

III. RESULT AND DISCUSSION

Descriptive Statistics			
	Mean	Std. Deviation	N
ANXIETY	21.42	6.083	294
STRESS	20.70	4.452	294
DEPRESSION	17.75	7.103	294
GENERAL SELF-EFFICACY	153.39	36.241	294
SPECIAL SELF-EFFICACY	44.88	12.382	294

Table 1: *Descriptive Statistics for Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Social Science** *students*

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Table 1 shows that the mean values, standard deviation and number of samples for Anxiety, Depression. Stress, General Self-efficacy (GSE) and Specific Self-efficacy (SSE) of Postgraduate **Social Science** students.

Correlations						
		Anxiety	Stress	Depression	GSE	SSE
Anxiety	Pearson Correlation	1	.062	$.213^{**}$	$-.116^{*}$	-.060
	Sig. (2-tailed)		.292	.000	.047	.305
	N	294	294	294	294	294
Stress	Pearson Correlation	.062	1	.033	.037	$.153^{**}$
	Sig. (2-tailed)	.292		.578	.532	.009
	N	294	294	294	294	294
Depression	Pearson Correlation	$.213^{**}$	.033	1	$-.184^{**}$	$-.149^{*}$
	Sig. (2-tailed)	.000	.578		.001	.010
	N	294	294	294	294	294
GSE	Pearson Correlation	$-.116^{*}$	.037	$-.184^{**}$	1	$.236^{**}$
	Sig. (2-tailed)	.047	.532	.001		.000
	N	294	294	294	294	294
SSE	Pearson Correlation	-.060	$.153^{**}$	$-.149^{*}$	$.236^{**}$	1
	Sig. (2-tailed)	.305	.009	.010	.000	
	N	294	294	294	294	294
*. Correlation is significant at the 0.05 level (2-tailed).						
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 2: *Correlation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Social Science** *students.*

Table 2 shows that, there are five variables with number of relationships among these variables are $^{5}C_{2} = 10$ of Postgraduate **Social Science** students.

It is observed in Table 2 that anxiety is significantly correlated with depression at .01 level of significance and general self-efficacy at .05 level of significance, but it is not significantly correlated to other two variables such as stress and specific self-efficacy. Hence, the sub-hypothesis **$H_{01}b$ and $H_{01}c$ are rejected**. However, the other two sub-hypotheses, **$H_{01}a$ and $H_{01}d$,** are accepted.

Table 2 also shows that stress is significantly correlated with specific self-efficacy at .01 level of significance, but it is not significantly correlated to the other two variables, depression and general self-efficacy. Hence, the sub-hypothesis **$H_{01}g$,** *"There is no significant relation between stress and specific self-efficacy for* **Social Science** *postgraduate students,"* is rejected. However, the other two sub-hypotheses, **$H_{01}e$ and $H_{01}f$ are accepted.**

Again, table 2 shows that depression is significantly correlated with general self-efficacy at .01 level of significance and specific self-efficacy at .05 level of significance, also general self-efficacy is significantly correlated with specific self-efficacy at .01 level of significance. Hence, the sub-hypotheses **$H_{01}h$, $H_{01}i$ and $H_{01}j$ are rejected.**

Therefore, the researchers finally conclude that the sub-hypotheses **$H_{01}b$, $H_{01}c$, $H_{01}g$, $H_{01}h$, $H_{01}i$ and $H_{01}j$ are rejected. However, the sub-hypotheses $H_{01}a$, $H_{01}d$ and $H_{01}e$ are accepted.**

Hence the null hypothesis H_{01}, *"There is no significant relation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Social Science** *students"* is **rejected. The alternative null hypothesis** *"There is significant relation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Social Science** *students"* is accepted.

Descriptive Statistics			
	Mean	Std. Deviation	N
ANXIETY	21.49	6.383	206
STRESS	20.40	5.947	206
DEPRESSION	18.20	8.257	206

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GENERAL SELF-EFFICACY	151.14	35.045	206
SPECIAL SELF-EFFICACY	44.83	10.769	206

Table 3: *Descriptive Statistics for Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Science** *students*

Table 3 shows that the mean values, standard deviation and number of samples for Anxiety, Depression. Stress, General Self-efficacy (GSE) and Specific Self-efficacy (SSE) of Postgraduate **Science** students.

Correlations		Anxiety	Stress	Depression	GSE	SSE
Anxiety	Pearson Correlation	1	.180[**]	.479[**]	-.036	-.285[**]
	Sig. (2-tailed)		.010	.000	.606	.000
	N	206	206	206	206	206
Stress	Pearson Correlation	.180[**]	1	.281[**]	-.071	.064
	Sig. (2-tailed)	.010		.000	.311	.363
	N	206	206	206	206	206
Depression	Pearson Correlation	.479[**]	.281[**]	1	-.038	-.296[**]
	Sig. (2-tailed)	.000	.000		.588	.000
	N	206	206	206	206	206
GSE	Pearson Correlation	-.036	-.071	-.038	1	.212[**]
	Sig. (2-tailed)	.606	.311	.588		.002
	N	206	206	206	206	206
SSE	Pearson Correlation	-.285[**]	.064	-.296[**]	.212[**]	1
	Sig. (2-tailed)	.000	.363	.000	.002	
	N	206	206	206	206	206
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 4: *Correlation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Science** *students.*

Table 4 shows that, there are five variables with number of relationships among these variables are $^5C_2 = 10$ of Postgraduate **Science** students.

It is observed in Table 4 that anxiety is significantly correlated with depression, stress, and specific self-efficacy at .01 level of significance. However, it is not significantly correlated to general self-efficacy. Hence, the sub-hypotheses **$H_{01}a$, $H_{01}b$ and $H_{01}d$ are rejected and** the sub-hypothesis **$H_{01}c$ is accepted.**

Table 4 also shows that stress is significantly correlated with depression at .01 level of significance. However, it is not significant with other two variables, general self-efficacy and specific self-efficacy. Hence, the sub- hypothesis **$H_{01}e$ is rejected and $H_{01}f$ and $H_{01}g$ are accepted.**

Again, table 4 shows that depression is significantly correlated with specific self-efficacy at .01 level of significance. However, it is not significantly correlated to general self-efficacy. In addition, general self-efficacy is significantly correlated to specific self-efficacy at .01 level of significance. Hence, the sub-hypotheses **$H_{01}i$ and $H_{01}j$ are rejected and sub-hypothesis $H_{01}h$ is accepted.**

Therefore, the researchers finally conclude that the sub-hypotheses **$H_{01}a$, $H_{01}b$, $H_{01}d$ $H_{01}e$, $H_{01}i$ and $H_{01}j$ are rejected. However, $H_{01}c$, $H_{01}e$, $H_{01}f$, $H_{01}g$ and $H_{01}h$, are accepted.**

Hence the null hypothesis **H_{02},** *"There is no significance relation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Science** *students"* is rejected. The alternative hypothesis is *"There is significant relation among Anxiety, Depression. Stress, General Self-efficacy and Specific Self-efficacy of Postgraduate* **Science** *students"* is accepted.

V. CONCLUSION

From the research work that we have undertaken, it may be concluded that the relationships between different variables are different for arts and science students. For arts students there is a significantly positive relationship between anxiety and depression. Stress is not significantly related to anxiety or depression. For science student, anxiety, stress and depression are significantly related. There is a significant opposite relationship between (a) anxiety and general self-efficacy (b) stress and specific self-efficacy (c) depression and general self-efficacy, depression and specific self-efficacy for arts students. There is a significant opposite relationship between (a) anxiety and specific self-efficacy (b) depression and specific self-efficacy for science students. Thereafter, for science students, general self-efficacy is not significantly related to anxiety, stress and depression.

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