

## Effect of Stress on Mental Health among College Students

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### ABSTRACT

Stress is a very common experience. No individual is untouched by stressors in their life, especially students, and it is very important for them to keep their mental health or well-being in check. The main objective of this study is to seek the effect of stress on mental health among separate samples of male and female students. This study also aimed to seek correlation between socio-economic status (SES) and stress levels; between stress and six dimensions (emotional stability, over all adjustment, autonomy, security-insecurity, self-concept, and intelligence) of mental health; and between mental health and four dimensions (pressure, physical stress, anxiety, and frustration) of stress. The sample consisted of 59 (n = 29 males; n = 30 females) undergraduate students. Data analysis was executed through SPSS version 29.0 and linear regression analysis, and Karl Pearson's Correlation Coefficient was implemented on the collected data to test the hypotheses. It was found that stress had a significant and negative effect [-.522 for males (significant at .01 level); and -.457 for females (significant at .05 level)] for students of the sample. SES was not found to be correlated with stress in either males or females. Only emotional stability [-.682 for males; and -.656 (both significant at .01 level)] and over all adjustment [-.623 for males; and -.548 for females (both significant at .01 level)] out of the six dimensions of mental health were found to be correlated with stress. For males, all four dimensions of stress [pressure = -.505 (significant at .01 level); physical stress = -.388, anxiety = -.458, frustration = -.385 (significant at .01 level)] were found to be negatively correlated with mental health. For females, only pressure = -.534 (significant at .01 level) and anxiety = -.399 (significant at .05 level) were found to be negatively correlated with mental health. Students with higher stress and lower mental health levels should seek therapeutic support.

**Keywords:** *Stress, Mental health, Socio-Economic Status (SES)*

Stress is a normal reaction of the body. It is the non-specific response of the body to any demand for change (Selye, 1936). College students face many stressors in life which can vary from financial stressors to stress relating to familial and social relationships and, the most of all, academic stressors. This stress can have many effects, both good and bad, on the mind as well as the body. This good stress is known as Eustress and the harmful stress is known as Distress (Selye, 1975).

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An individual experiencing eustress may feel an increase in hope, optimism, motivation, positive emotions, etc. (S Lu, 2021) whereas an individual experiencing distress may have frequent headaches, feel tired, disturbed sleep, etc. In cases of long-term distress, a person might experience stomach problems, rapid weight change, skin and fertility problems, etc. and can weaken our immune system (Li, Cao and Li, 2016). It can also cause cardiovascular diseases, stomach disorders and even sudden death (Engel, 1978). For such reasons World Health Organization calls stress health epidemic of 21<sup>st</sup> century.

The mental health of a person describes their psychological, social and emotional well-being. Mental health is affected by our experiences, environment, emotional skills and biological factors. It is a changing component of our mind. Depending on the circumstances a person may experience positive or negative mental health. Positive mental health can help increase a person's performance and abilities at work, or decrease physical ailments; whereas negative mental health decreases performance and might worsen physical ailments.

### **METHODOLOGY**

#### *Introduction*

Methodology in a research refers to the methods utilized by the researchers in order to gather, analyse and interpret data and to reach their goal. Methodology is a procedure that is pre-planned and structured to help solve a problem, whether it is practical or theoretical. It also includes collecting data and thereafter using statistics or analysis methods to interpret that data according to the researcher's preconceived hypothesis.

#### *Objectives*

1. Objective 1 – To study the effects of stress levels on the mental health among male students.
2. Objective 2 – To study the effects of stress levels on the mental health among female students.
3. Objective 3 – To study the correlation between stress and Socio-Economic Status (SES) among male students.
4. Objective 4 – To study the correlation between stress and SES among female students.
5. Objective 5 – To study the correlation between stress and the six mental health dimensions (emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and intelligence) among male students.
6. Objective 6 – To study the correlation between stress and the six mental health dimensions (emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and intelligence) among female students.
7. Objective 7 – To study the correlation between mental health and four dimension of stress (pressure, physical stress, anxiety and frustration) among male students.
8. Objective 8 – To study the correlation between mental health and four dimension of stress (pressure, physical stress, anxiety and frustration) among female students.

#### *Hypotheses*

1. Hypothesis 1 – There is no significant effect of stress levels on the mental health among male students.
2. Hypothesis 2 – There is no significant effect of stress levels on the mental health among female students.
3. Hypothesis 3 – There is no significant correlation (positive or negative) between stress and SES of male students.

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4. Hypothesis 4 – There is no significant correlation (positive or negative) between stress and SES of female students.
5. Hypothesis 5 – There is no correlation between stress and the six mental health dimensions (emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and intelligence) among male students.
6. Hypothesis 6 – There is no correlation between stress and the six mental health dimensions (emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and intelligence) among female students.
7. Hypothesis 7 – There is no correlation between mental health and the four dimensions of stress (pressure, physical stress, anxiety and frustration) among male students.
8. Hypothesis 8 – There is no correlation between mental health and the four dimensions of stress (pressure, physical stress, anxiety and frustration) among female students.

### *Variables*

- **Independent Variable**  
Over All Stress Score – It refers to the scores of individuals obtained through the Stress Scale (SS-LVNS) and are used to find the stress levels of such individuals.
- **Dependent Variable**  
Mental Health Score – It refers to the scores of individuals obtained through the Mental Health Battery (MHB-SS) and are used to find the how mentally well is an individual.

### *Sample*

The sample for this study consisted of 59 students, majority of whom (n = 49, 83%) were from the SAGE University located at Rau, Indore, Madhya Pradesh (M.P.), India. The rest of the students (n = 10, 17%) were studying in various other colleges and universities. Most of the students from the total sample (n = 54, 91.5%) were presently residing in Indore district of M.P., India for academic purposes. All of the students were currently pursuing a Bachelor's Degree in some field of study and thus were undergraduates. All of them, except one student, were between the ages of 18 – 21. From the total sample, 30 students were female (50.85%) and 29 (49.15%) were male. Looking at SES of students, 42 (71.2%) were from Middle SES, 15 (25.4%) were from Upper SES, and only 2 (3.4%) were from Lower SES.

### *Tools Used*

To collect quantitative data two tools were used:

- The Stress Scale by Dr. Vijaya Lakshmi and Dr. Shruti Narain (SS – LVNS) which has 4 dimensions of stress (Pressure, Physical Stress, Anxiety, Frustration).
- The Mental Health Battery by Dr. Arun Kumar Singh and Dr. Alpana Sen Gupta (MHB-SS) which has 6 components of mental health (Emotional Stability, Over-all adjustment, Autonomy, Security-insecurity, Self-concept, Intelligence).

### *Data Analysis*

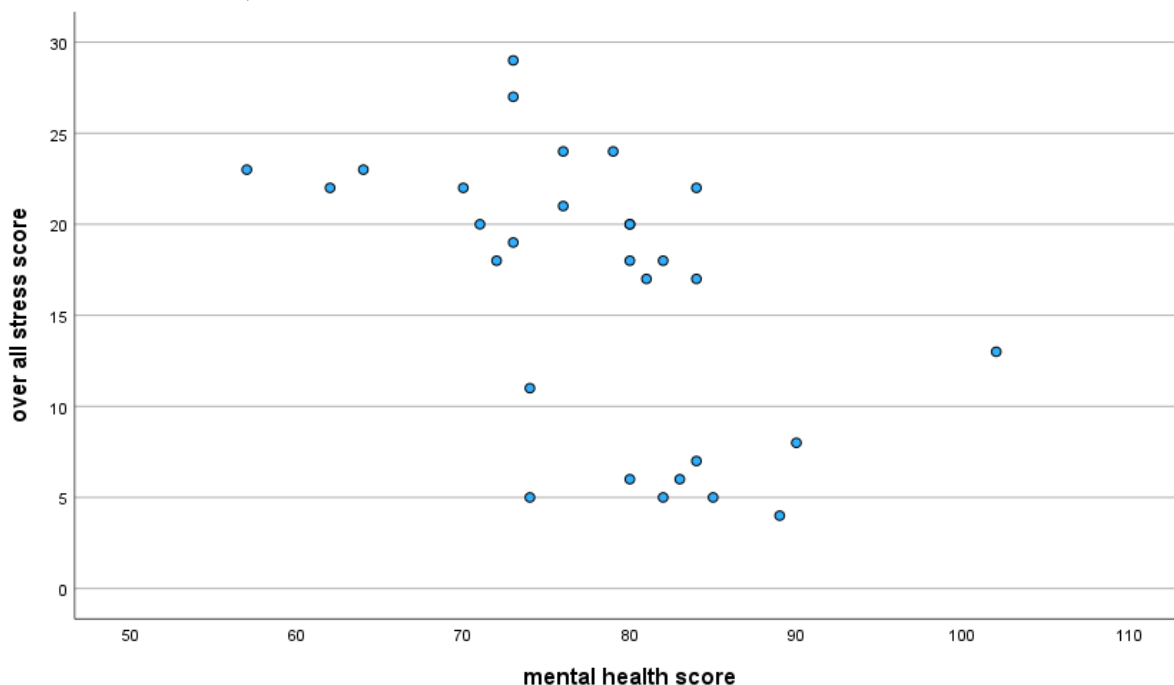
Data analysis was performed using SPSS Version 29.0 for the first two hypotheses, Linear Regression Analysis was applied. Karl Pearson's Correlation Coefficient was used to seek the validity of the rest of the hypotheses.

**RESULTS AND ANALYSIS**

**Introduction**

This part of the study contains the final item of information pertaining to the objectives and hypotheses that were mentioned in methodology. It includes a description of the outcomes of various processes applied to the collected data in data analysis and its relation with the created hypotheses and objectives.

The following is a graph plot of mental health score and over all stress scores of male students of the sample and the means and standard deviation of stress and mental health (SES –wise and total).

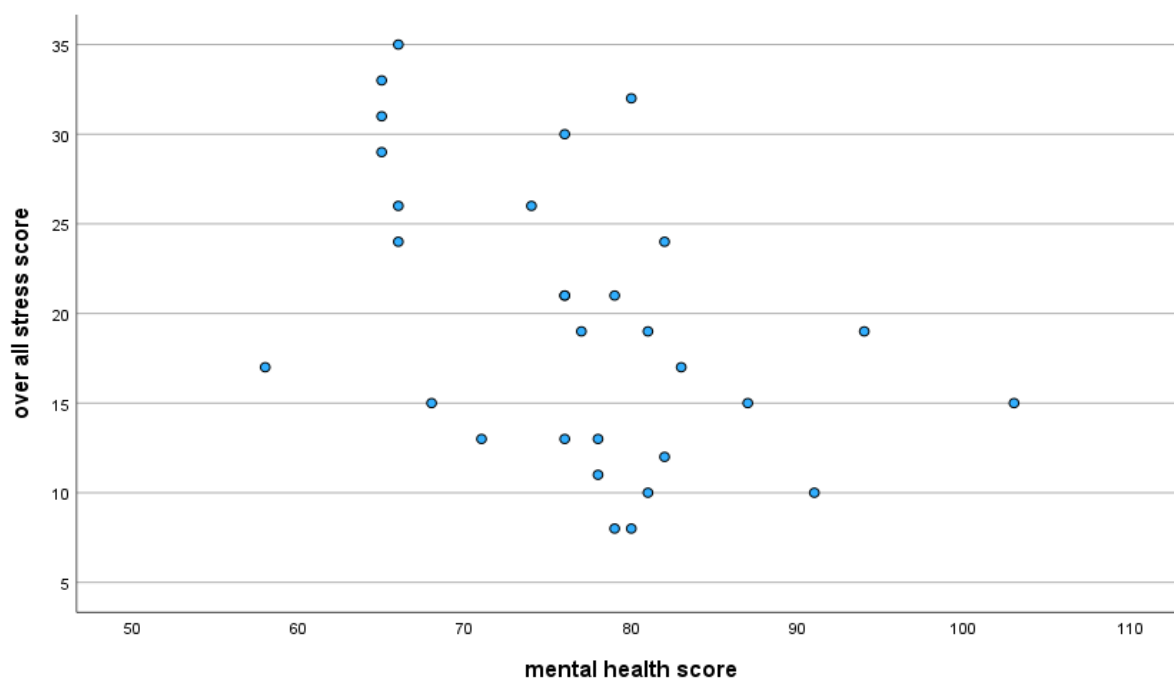


over all stress score (Male)		
Mean	N	Std. Deviation
16.34	29	7.565

mental health score (Male)			
SES level	Mean	N	Std. Deviation
Lower	70.50	2	19.092
Middle	78.00	20	7.497
Upper	79.86	7	10.558
Total	77.93	29	8.940

The following is a graph plot of mental health score and over all stress scores of female students of the sample.

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over all stress score (Female)		
Mean	N	Std. Deviation
19.57	30	7.916

mental health score (Female)			
SES level	Mean	N	Std. Deviation
Middle	76.27	22	10.638
Upper	78.13	8	6.490
Total	76.77	30	9.634

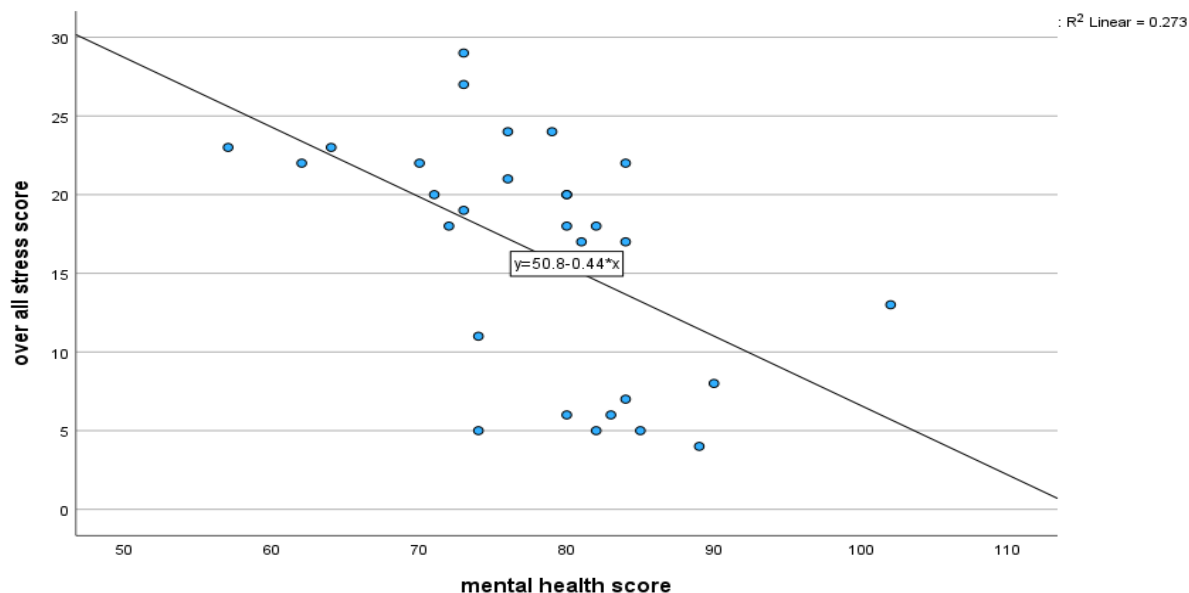
After conducting data analysis, the following results were found. Results for each hypothesis are given separately.

For the first hypothesis, regression analysis was performed and the following table was obtained:

COEFFICIENTS <sup>a</sup>						
Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	88.021	3.482		25.279	<.001
	Over all stress score	-.617	.194	-.522	-3.183	.004

a. Dependent Variable: mental health score

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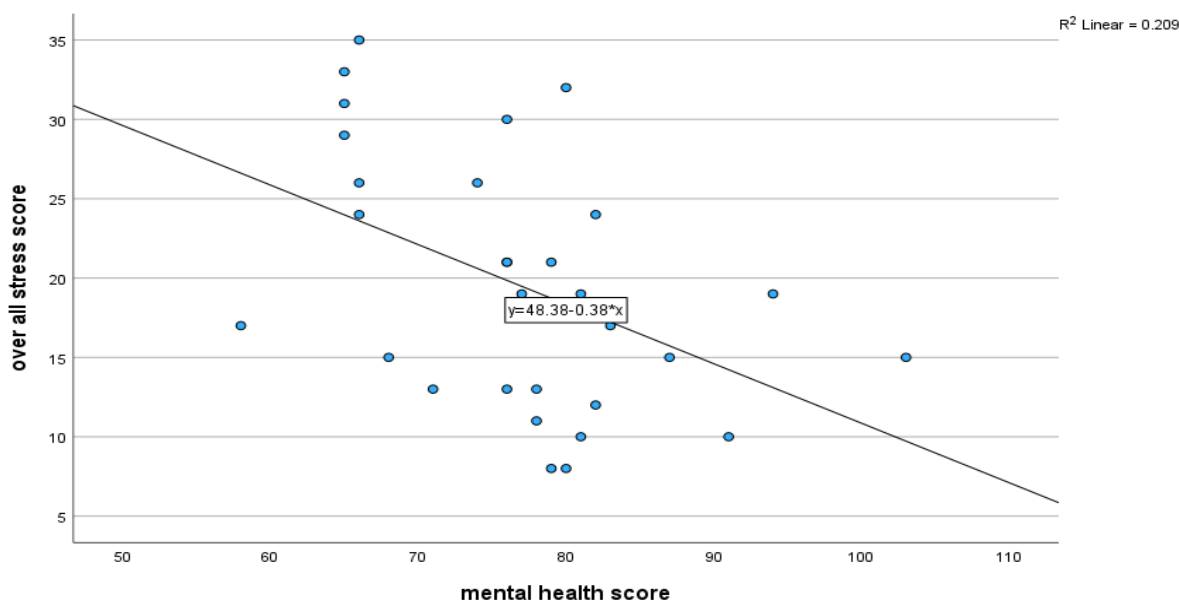


Through Regression analysis, the effect of stress on mental health of male students was found to be negative and significant and its value was found to be -.522, significant at .01 level.

For the second hypothesis, again regression analysis was performed and the following results were obtained:

COEFFICIENTS <sup>a</sup>						
Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	87.641	4.308		20.342	<.001
	Over all stress score	-.556	.205	-.457	-2.716	.011

a. Dependent Variable: mental health score



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Through Regression analysis, the effect of stress on mental health of female students was found to be negative and significant and its value was found to be  $-.457$ , significant at  $.05$  level.

For the third hypothesis, Karl Pearson's Correlation was used to obtain the following data:

<b>CORRELATIONS</b>			
		<b>SES score</b>	<b>Over all stress score</b>
<b>SES score</b>	Pearson Correlation	1	.057
	Sig. (2-tailed)		.770
	N	29	29
<b>Over all stress score</b>	Pearson Correlation	.057	1
	Sig. (2-tailed)	.770	
	N	29	29

Using Karl Pearson's Correlation, the correlation coefficient between stress and the socio-economic status of males was found to be  $.057$  which is not statistically significant.

For the fourth hypothesis, Karl Pearson's Correlation was again used to obtain the following data:

<b>CORRELATIONS</b>			
		<b>SES score</b>	<b>Over all stress score</b>
<b>SES score</b>	Pearson Correlation	1	.168
	Sig. (2-tailed)		.376
	N	30	30
<b>Over all stress score</b>	Pearson Correlation	.168	1
	Sig. (2-tailed)	.376	
	N	30	30

Using Karl Pearson's Correlation, the correlation coefficient between stress and the socio-economic status of females was found to be  $.168$  which is not statistically significant.

For the fifth hypothesis, using Karl Pearson's method, following correlation coefficients were obtained:

<b>CORRELATIONS</b>	
	<b>Over all Stress</b>
<b>Emotional Stability</b>	$-.682^*$
<b>Over all Adjustment</b>	$-.623^*$
<b>Autonomy</b>	$-.173$
<b>Security- Insecurity</b>	$-.143$
<b>Self-Concept</b>	$-.236$
<b>Intelligence</b>	$.114$

\*. Significant at 0.01 level (2-tailed).

Using Karl Pearson's Correlation, the correlation coefficient between stress and the six dimensions of mental health in male students were measured. Out of six, only two – Emotional Stability and Over All Adjustment were significantly (and negatively) correlated with stress in students with their coefficient values being  $-.682$  for Emotional Stability and  $-.623$  for Over All Adjustment, both being significant at  $.01$  level.

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For the sixth hypothesis, using Karl Pearson's method, following correlation coefficients were obtained:

<b>CORRELATIONS</b>	
	<b>Over all Stress</b>
<b>Emotional Stability</b>	-.656*
<b>Over all Adjustment</b>	-.548*
<b>Autonomy</b>	.068
<b>Security- Insecurity</b>	-.313
<b>Self-Concept</b>	.321
<b>Intelligence</b>	-.136

\*. Significant at 0.01 level (2-tailed).

Using Karl Pearson's Correlation, the correlation coefficient between stress and the six dimensions of mental health in female students were measured. Out of six, only two – Emotional Stability and Over All Adjustment were significantly (and negatively) correlated with stress in students with their coefficient values being -.656 for Emotional Stability and -.548 for Over All Adjustment, both being significant at .01 level.

For the seventh hypothesis, using Karl Pearson's method, following correlation coefficients were obtained:

<b>CORRELATIONS</b>	
	<b>Mental Health</b>
<b>Pressure</b>	-.505*
<b>Physical Stress</b>	-.388**
<b>Anxiety</b>	-.458**
<b>Frustration</b>	-.385**

\*. Significant at 0.01 level (2-tailed).

\*\*.. Significant at 0.05 level (2-tailed).

Using Karl Pearson's Correlation, the correlation coefficient between mental health and the four dimensions of stress in male students were measured. All four dimensions were significantly and negatively correlated with mental health and their coefficients were -.505 for Pressure, -.388 for Physical Stress, -.458 for Anxiety, and -.385 for Frustration. Only Pressure was significant at .01 level; the other three being significant at .05 level.

For the eighth hypothesis, using Karl Pearson's method, following correlation coefficients were obtained:

<b>CORRELATIONS</b>	
	<b>Mental Health</b>
<b>Pressure</b>	-.534*
<b>Physical Stress</b>	-.278
<b>Anxiety</b>	-.399**
<b>Frustration</b>	-.312

\*. Significant at 0.01 level (2-tailed).

\*\*.. Significant at 0.05 level (2-tailed).

Using Karl Pearson's Correlation, the correlation coefficient between mental health and the four dimensions of stress in female students were measured. Out of the four dimensions, only Pressure and Anxiety were significantly and negatively correlated with mental health



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and their coefficients were  $-.534$  for Pressure and  $-.399$  for Anxiety. Pressure was significant at  $.01$  level and Anxiety was significant at  $.05$  level.

### DISCUSSION

The first hypothesis tries to understand the effect (or lack thereof) of stress on mental health of male students. After conducting regression analysis, the first hypothesis was rejected as stress had a significant effect on mental health with its coefficient value being  $-.522$  with the effect being negative. The value was also significant at  $.01$  level.

The second hypothesis tries to understand the effect (or lack thereof) of stress on mental health of female students. After conducting regression analysis, the second hypothesis was rejected as stress had a significant effect on mental health with its coefficient value being  $-.457$  with the effect being negative. The value was also significant at  $.05$  level.

In the third hypothesis, the lack of correlation between stress and SES in male students was tried to be identified. This hypothesis was confirmed as the correlation coefficient came out to be  $.057$  and was not statistically significant at any level.

In the fourth hypothesis, the lack of correlation between stress and SES in female students was tried to be identified. This hypothesis was confirmed as the correlation coefficient came out to be  $.168$  and was not statistically significant at any level.

In the fifth hypothesis, correlation between stress and the six mental health dimensions in male students was tried to be ascertained. This hypothesis was partially confirmed and partially rejected as only two dimensions – emotional stability and over all adjustment with their coefficient values being  $-.682$  and  $-.623$ , respectively – were found to be statistically significant at  $.01$  level and they were negatively correlated. The other four dimensions were not significantly correlated with stress.

In the sixth hypothesis, correlation between stress and the six mental health dimensions in female students was tried to be ascertained. This hypothesis was partially confirmed and partially rejected as only two dimensions – emotional stability and over all adjustment with their coefficient values being  $-.656$  and  $-.548$ , respectively – were found to be statistically significant at  $.01$  level and they were negatively correlated. The other four dimensions were not significantly correlated with stress.

In the seventh hypothesis, correlation between mental health and four stress dimensions was tried to be ascertained. This hypothesis was completely rejected as all four dimensions of stress were found to be significantly correlated with mental health with their coefficient values being  $-.505$  (pressure),  $-.388$  (physical stress),  $-.458$  (anxiety) and  $-.385$  (frustration). Pressure was significant at  $.01$  level and the other three dimensions were significant at  $.05$  level.

In the eighth hypothesis, correlation between mental health and four stress dimensions was tried to be ascertained. This hypothesis was partially confirmed and partially rejected as only two of the four dimensions of stress – pressure and anxiety – were found to be significantly correlated with mental health with their coefficient values being  $-.534$  (pressure) and  $-.399$  (anxiety). Pressure is statistically significant at  $.01$  level and anxiety is statistically significant at  $.05$  level.

## CONCLUSION

It was found in this study, contrary to the hypotheses, that stress does actually have an effect (which is negative) on the mental health of college students, whether they are males or females; but it seems that stress has a lesser effect on the mental health of female students as compared to male students.

It was also found, as hypothesised, that stress does not correlate with the socio-economic status (SES) of an individual. Neither male nor female sample showed correlation between stress and SES.

It was also found that stress was negatively correlated with emotional stability and over all adjustment in both males and females. But, again, it seems that stress is less correlated with these two mental health dimensions in females as compared to males.

Lastly, mental health was found to be negatively correlated with all four dimensions of stress i.e., pressure, physical stress, anxiety, and frustration in male college students. But only pressure and anxiety were found to be negatively correlated with mental health of female college students. Here also anxiety was found to be less negatively correlated with mental health in females as compared to males; but, deviating from the pattern, pressure was found to be more negatively correlated with mental health in females than males.

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- <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>

### ***Acknowledgement***

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### ***Conflict of Interest***

The author(s) declared no conflict of interest.

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