

Study of Peers as Dimension of Psychological Stress among Senior Secondary Science Students

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Abstract:

This study attempts to assess the peers as dimension of psychological stress among senior secondary science students studying in different types of institutions. A sample of 631 students was randomly selected from the schools recognized by different boards in Meerut province. They were administered Psychological Stress Scale for Science Students (PSSSS) developed by the researcher himself. Mean, S.D., F-test and t-test were used to analyze the data. Results show that male and female science students differed significantly on psychological stress dimension peers. Male science students were found to be more stressed than female science students. Similarly significant difference was observed between rural and urban science students on peers as psychological stress dimension and rural science students were found to be more stressed than urban science students. Further, Significant difference was observed among the students of different types of institutions. Highest psychological stress due to peers was found in the students of JNV and lowest in the students of KV. Similarly, Significant difference was observed between the students of CBSE and UPB, UPB and ISC on psychological stress dimension peers. No significant difference was observed between the students of CBSE and ISC on psychological stress dimension peers. Highest psychological stress due to peers was found in the students of UPB and lowest in the students of ISC.

Key words: Psychological Stress, Science Students, Achievement, Peers

Introduction

Senior secondary school years should be a new and interesting experience, but many demands and rapid changes can make them one of the most stressful times of the life. Students of this stage face increasing amounts of schoolwork, a rapidly changing curriculum, assignment deadlines and exams. Students worry about selecting careers and post schooling programmes. The problems encountered by students may differ from those faced by their non student peers. In this situation they experience stress. Stress refers to a dynamic interaction between the individual and the environment. In this interaction, demands, limitations and opportunities related to work may be perceived as threatening to surpass the individual's resources and skills (Kohler, et al 2006). In case of disarrangement, this interaction may lead to cognitive, emotional and behavioural alterations. Some of the most common stressors are time pressures, workload, making decisions, continuous changes and economic mistakes at work. Students are starting to shift from a life that is dependent on others to a life that needs them to release the dependency and start carrying their own responsibilities (Sulaiman, et al 2009). In addition, there are important sources of stress such as homework, curriculum transaction, assignments and uncomfortable classrooms, relationships with faculty members, peers and friends, eating and sleeping habits and time pressure may also be sources of stress. Peers are the most important factor causing stress among students. This refers to the stress among science students due to conflicts with friends, competition faced by the students from their peers etc. Students have to balance their schoolwork with their hobbies, sports and daily life. They have conflicts with friends, siblings, parents and have to adjust themselves with other environmental demands.

Further, Science students have many obstacles to overcome in order to achieve optimal academic performance as compared to humanities students. A number of researches have been done looking at the correlation of many stress factors that science students experience and the effects of stress on their academic performance and further supported by Saipanish (2003) who conducted a study on 686 medical students in Thailand. Most of the time, science students have complain of dwelling in between their efforts for better achievement and teacher's/ parent's expectations. Most of the studies in different responses to stress have been carried out in dental, medical, nursing, university and college students (Sinha, et al 2000, Lee et al 2002, Kuruppuarachchi, et al 2002, Ellison, 2004, Polychronopoulou, Argy and Divaris, Kimon 2005, Hussain, et al 2008, Kumar and Singh 2004, Kaplan, et al 2005, Chapell, et al 2005, Vijayalakshmi and Lavanya 2006, Nicholson 2009, and Hasan 2009). Many scholars in the field of behavioural science have carried out extensive research on stress and its outcomes and concluded that the topic needed more attention. The researcher found that there is no much research conducted particularly in Western U.P in India pertaining to this issue with regards to the students of different types of institutions recognized by different boards. Therefore, it is timely to conduct a research to examine this particular issue. In the present study, the researcher attempted to assess the peers as dimension of psychological stress among senior secondary science students studying in different types of institutions.

Objectives

The objectives of this research study were:

1. To study the nature of peers as dimension of psychological stress among science students.
2. To study the difference between male and female science students on peers as dimension of psychological stress.

3. To study the difference between rural and urban science students on peers as dimension of psychological stress.
4. To study the difference among science students of different types of institutions on peers as dimension of psychological stress.
5. To study the difference among science students of different types of boards on peers as dimension of psychological stress.

Research Methodology

Method

Methods of research are generally determined by the theory of the topic under study, objectives of the study, resources of researchers etc. These considerations have led the investigator to use the descriptive survey method of research for the present study.

Participants

For the present study, science students officially enrolled in 12th standard were taken from different types of institutions recognized by different boards in Meerut province i.e. Kendriya Vidyalayas, Jawahar Navodaya Vidyalayas, U.P. Government Schools, U.P. Government Aided Schools, Public Schools, Christian Missionary Schools and Army Schools. Using simple random sampling, 100 senior secondary science students were selected from each type of institutions. Out of 700 science students only 631 students were finally taken because 69 students did not fill the scale properly.

Material and Procedure

To achieve objectives of this study Psychological Stress Scale for Science Students (PSSSS) developed by the researcher was used to measure psychological stress of science students. Each item was followed by five options, namely, 'Always', 'Often',

‘Sometimes’, ‘Rarely’, and ‘Never’. Reliability of the scale was determined by split half method and was found 0.96.

Data Analysis Techniques

To study the nature of peers as dimension of psychological stress, all the science students (N = 631), mean and standard deviation (S.D.) were calculated. To find out the differences among science students on peers as dimension of psychological stress, analysis of variance (ANOVA) was used. In case of significant F-value, t-test was used. Results are presented in the following tables.

Results

After analysing the data, it was observed that the mean, median and mode values of all the 631 science students on psychological stress dimension peers were found to be 21.204, 21.0, and 21.0 respectively, which indicate moderate level of stress among science students due to peers.

Table-1: Summary of t-test for difference between male and female science students on peers as dimension of psychological stress

Dimensions of Psychological Stress	Male (N = 419)		Female (N = 212)		t-value
	Mean	S. D.	Mean	S. D.	
Peers	21.88	6.65	19.83	6.27	3.70**

It is evident from Table - 1 that t-values between the means of male and female science students on psychological stress dimension peers was found to be 3.70 which was significant at 0.01 level of significance. This reveals the fact that male and female science students differed significantly on psychological stress dimension peers. Since mean differences were in favor of male students, it indicates that male science students were found to be more stressed than female science students due to peers.

Table-2: Summary of t-test for difference between rural and urban science students on peers as dimension of psychological stress

Dimensions of Psychological Stress	Rural (N = 218)		Urban (N = 413)		t-value
	Mean	S. D.	Mean	S. D.	
Peers	22.82	6.85	20.33	6.29	4.58**

It is evident from Table - 2 that t-values between the means of rural and urban science students on psychological stress dimension peers was found to be 4.58 which was significant at 0.01 level of significance. This reveals the fact that rural and urban science students differed significantly on psychological stress dimension peers. Since mean differences were in favor of rural students, it indicates that rural science students were found to be more stressed than urban science students due to peers.

Table – 3: Sums, sum of squares, means and S.D.s of science students of different types of institutions on psychological stress dimension peers

Types of School	N	Sum	Sum of Squares	Mean	S. D.
KV	95	1698	33552	17.87	5.84
JNV	82	1866	46270	22.76	6.86
GIC	90	2003	48039	22.26	6.24
GAS	79	1795	44087	22.72	6.51
PS	98	2125	49969	21.68	6.33
CMS	96	2020	46444	21.04	6.44
AS	91	1864	42368	20.48	6.82

Table – 4: Summary of analysis of variance for difference among science students of different types of institutions on psychological stress dimension peers

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	6	1604.82	267.47	6.471**
Within	624	25790.35	41.33	
Total	630	27395.18	** p < 0.01	

Table - 4 depicts that F-value was found to be 6.471, which was significant at 0.01 level. This means that students of different types of institutions differed significantly on psychological

stress dimension peers. This analysis shows significant difference among groups. To know significance of difference between groups, t-values were calculated. Results of t-test for the dimension of psychological stress peers are given in Table – 5.

Table – 5: Summary of t-matrix for difference between science students of different types of institutions for psychological stress dimension peers

Types of Schools	KV	JNV	GIC	GAS	PS	CMS	AS
KV	0	5.089**	4.910**	5.147**	4.320**	3.542**	2.792**
JNV		0	0.498	0.033	1.083	1.709	2.170*
GIC			0	0.472	0.620	1.297	1.814
GAS				0	1.065	1.699	2.167*
PS					0	0.696	1.248
CMS						0	0.573
AS							0

It is evident from Table - 5 that significant differences were obtained between the students of KV and JNV, KV and GIC, KV and GAS, KV and PS, KV and CMS, KV and AS, JNV and AS, GAS and AS on psychological stress dimension peers. No significant differences were observed between the students of JNV and GIC, JNV and GAS, JNV and PS, JNV and CMS, GIC and GAS, GIC and PS, GIC and CMS, GIC and AS, GAS and PS, GAS and CMS, PS and CMS, PS and AS, CMS and AS on psychological stress dimension peers. It is also clear from Table - 3 that highest mean on psychological stress dimension peers was found for the students of JNV and lowest for the students of KV.

Table – 6: Sums, sum of squares, means and S.D.s of CBSE, UPB and ISC science students on psychological stress dimension peers

Types of Board	N	Sum	Sum of Squares	Mean	S. D.
CBSE	303	6282	144318	20.733	6.827
UPB	169	3798	92126	22.473	6.349
ISC	159	3291	74285	20.698	6.248

Table – 7: Summary of analysis of variance for difference among science students of different types of boards on psychological stress dimension peers

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	2	380.19	190.10	4.419*
Within	628	27014.99	43.02	
Total	630	27395.18	* p < 0.05	

Table – 7 that depicts that F-value has come out to be 4.419, which was significant at 0.05 level. This means that students of different types of boards differed significantly on psychological stress dimension peers. This analysis shows significant difference among groups. To know significance of difference between groups, t-values were calculated. Results of t-test for psychological stress dimension peers are given in Table- 8.

Table – 8: Summary of t-matrix for difference between science students of different types of boards on psychological stress dimension peers

Types of Board	CBSE	UPB	ISC
CBSE	0	2.717**	0.053
UPB		0	2.543*
ISC			0

It is evident from Table – 8 that that significant differences were obtained between the students of CBSE and UPB, UPB and ISC on psychological stress dimension peers. No significant difference was observed between the students of CBSE and ISC on psychological stress dimension peers. It is also clear from Table - 6 that highest mean on psychological stress dimension science teachers was found for the students of UPB and lowest for the students of ISC.

Conclusions and Suggestions

It is apparent from the findings of this study that science students of different types of institutions were found to be

under stress in the process of studying science at senior secondary level. Peers have been emerged as major causing factor of stress among science students. Male science students were found to be more stressed than female science students due to peers' pressure. Again Rural science students were found to be more stressed than urban science students due to peers pressure. significant differences were obtained between the students of KV and JNV, KV and GIC, KV and GAS, KV and PS, KV and CMS, KV and AS, JNV and AS, GAS and AS on psychological stress dimension peers. While, No significant differences were observed between the students of JNV and GIC, JNV and GAS, JNV and PS, JNV and CMS, GIC and GAS, GIC and PS, GIC and CMS, GIC and AS, GAS and PS, GAS and CMS, PS and CMS, PS and AS, CMS and AS on psychological stress dimension peers. Highest mean on psychological stress dimension peers was found for the students of JNV and lowest for the students of KV. Further, significant differences were obtained between the students of CBSE and UPB, UPB and ISC on psychological stress dimension peers. No significant difference was observed between the students of CBSE and ISC on psychological stress dimension peers. It is also clear that highest mean on psychological stress dimension peers was found for the students of UPB and lowest for the students of ISC. Schools are thus suggested to design a flexible course of career education based on students' future career development. This course must cover psychological, mental, social, and cultural contents and be incorporated into formal curricula of each department. The highly competitive education and the learning processes are the key factors of science student's mental state. The modern world, which is said to be a world of achievement, is also a world of stress. One finds stress everywhere, whether it is within the family, academics or any social and economic activity. Stress can occur, if there is mismatch between the reality of the work environment and individual's perception of the work environment. Likewise, lack

of fit between the demands placed on individuals and their abilities to meet those demands can result in stress. The findings from the present study would benefit various parties in the country in planning and conducting necessary programs for the students so that stress-related factors could be reduced and better academic performance could be achieved by the students. It is proposed that these information are to be looked by students in facing anything that are considered to them as stress. The information shall also give benefit for parents and teachers in helping students to manage stress in the right way. Schools administration should provide more support and care to help students cope with various stressors and also careful to identify students having stress reactions as soon as possible. Family support is helpful for students faced with stress, no matter how they are adaptable to the stress. While college students should take advantage of family support, their family members should try to understand their interests, specialties, and abilities so as to avoid having too high expectations of them and causing them additional stress.

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