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Study of Communication Problems as Dimension of Psychological Stress among Science Students

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Abstract: *This study attempts to assess the communication problems 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 communication problems. Male science students were found to be more stressed than female science students. Similarly significant difference was observed between rural and urban science students, and rural science students were found to be more stressed than urban science students. Further, Significant difference was observed among the students of diiferent types of institutions. Highest psychological stress due to psychological stress dimension communication problems was found in the students of GAS and lowest in the students of KV. Similarly, Significant difference was observed between the students of and different types of boards UPB and CBSE, CBSE and ISC, UPB and ISC. Highest psychological stress due to communication problems was found in the students of UPB and lowest in the students of ISC.*

Keywords: Achievement, Communication Problems, Psychological Stress,

Introduction

Senior secondary school years have 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. 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). 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. In addition, there are important sources of stress such as homework, curriculum transaction, assignments and uncomfortable classrooms, relationships with faculty members and friends, eating and sleeping habits and time pressure may also be sources of stress. Communication problems is also important factor in this regard. This refers to the stress among science students due to lack of communication skills, hesitation to express their doubts and language problems. 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 communication problemes 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 Communication Problems as dimension of psychological stress among science students.

2. To study the difference between male and female science students on psychological stress dimension communication problems.

3. To study the difference between rural and urban science students on psychological stress dimension communication problems.

4. To study the difference among science students of different types of institutions on psychological stress dimension communication problems.

5. To study the difference among science students of different types of boards on psychological stress dimension communication problems.

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', ans 'Never'. Reliability of the scale was determined by split half method and was found 0.96.

Data Analysis Techniques

To study the nature of communication problems 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 communication problems 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 communication problems were found to be 20.515, 20 and 19 respectively, which indicate moderate level of stress among science students due to communication problems.

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

Dimensions of Psychological Stress	Male (N = 419)		Female (N = 212)		t-value
	Mean	S. D.	Mean	S. D.	
Communication Problems	21.65	6.85	18.28	6.41	5.96**

It is evident from Table - 1 that t-values between the means of male and female science students on psychological stress dimension communication problems was found to be 5.96 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 communication problems. 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 communication problems.

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

Dimensions of Psychological Stress	Rural (N = 218)		Urban (N = 413)		t-value
	Mean	S. D.	Mean	S. D.	
Communication Problems	23.06	6.91	19.18	6.49	6.97**

It is evident from Table - 2 that t-values between the means of rural and urban science students on psychological stress dimension communication problems was found to be 6.97 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 communication problems. 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 communication problems.

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

Types of School	N	Sum	Sum of Squares	Mean	S. D.
KV	95	1695	34413	17.84	6.66
JNV	82	1844	46234	22.49	7.67
GIC	90	2025	49255	22.50	6.44
GAS	79	1838	46068	23.27	6.51
PS	98	1876	39604	19.14	6.17
CMS	96	1804	37834	18.79	6.43
AS	91	1864	42082	20.48	6.58

Table – 4: Summary of ANOVA for difference among science students of different types of institutions on psychological stress dimension communication problems

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	6	2419.98	403.33	9.165**
Within	624	27461.60	44.01	
Total	630	29881.58		

Table - 4 indicates that F-value was 9.165, which was significant at 0.01 level. This means that students of different types of institutions differed significantly on psychological stress dimension communication problems. This analysis shows significanct difference among groups. To know the significance of difference between groups, t-values were calculated. Results of t-test for the stress dimension communication problems 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 communication problems

Types of Schools	KV	JNV	GIC	GAS	PS	CMS	AS
KV	0	4.288**	4.805**	5.372**	1.401	0.997	2.704**
JNV		0	0.011	0.688	3.224**	3.476**	1.838
GIC			0	0.763	3.630**	3.905**	2.071*
GAS				0	4.288**	4.527**	2.746**
PS					0	0.386	1.438
CMS						0	1.767
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 AS, JNV and PS, JNV and CMS, GIC and PS, GIC and CMS, GIC and AS, GAS and PS, GAS and CMS, GAS and AS on psychological stress dimension communication problems. No significant differences were observed between the students of KV and PS, KV and CMS, JNV and GIC, JNV and GAS, JNV and AS, GIC and GAS, PS and CMS, PS and AS, CMS and AS on psychological stress dimension communication problems. It is also clear from Table-3 that highest mean on psychological stress dimension communication problems was found for the students of GAS 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 communication problems

Types of Board	N	Sum	Sum of Squares	Mean	S. D.
CBSE	303	6182	141196	20.403	7.063
UPB	169	3863	95323	22.858	6.465
ISC	159	2901	58971	18.245	6.184

Table – 7: Summary of ANOVA for difference among science students of different types of boards on psychological stress dimension communication problems

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	2	1750.67	875.34	19.541**
Within	628	28130.90	44.79	
Total	630	29881.58	** p < 0.01	

It is depicted from Table – 7 that F-value has come out to be 19.541,which was significant at 0.01 level. This means that students of different types of boards differed significantly on psychological stress dimension communication problems. 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 communication problems 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 communication problems

Types of Boards	CBSE	UPB	ISC
CBSE	0	3.723**	3.245**
UPB		0	6.575**
ISC			0

It is evident from Table – 8 that significant differences were obtained between the students of CBSE and UPB, CBSE and ISC, UPB and ISC on psychological stress dimension communication problems. It is also clear from Table - 6 that highest mean on psychological stress dimension communication problems 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. communication problems has been emerged as moderate causing factor of stress among science students. Male science students were found to be more stressed than female science students due to communication problems. Rural science students were found to be more stressed than urban science students due

to communication problems. Significant differences were obtained between the students of KV and JNV, KV and GIC, KV and GAS, KV and AS, JNV and PS, JNV and CMS, GIC and PS, GIC and CMS, GIC and AS, GAS and PS, GAS and CMS, GAS and AS on psychological stress dimension communication problems. While, No significant differences were observed between the students of KV and PS, KV and CMS, JNV and GIC, JNV and GAS, JNV and AS, GIC and GAS, PS and CMS, PS and AS, CMS and AS on psychological stress dimension communication problems. It is also observed that highest mean on psychological stress dimension communication problems was found for the students of GAS and lowest for the students of KV. Further, significant differences were obtained between the students of CBSE and UPB, CBSE and ISC, UPB and ISC on psychological stress dimension communication problems. Highest mean on psychological stress dimension communication problems was found for the students of UPB and lowest for the students of ISC.

In the end, it can be concluded that science students have been found experiencing stress. The highly competitive education and the learning processes are the key factors of science student's mental state. 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 indicate that the male sttudents as well as students from rural area face stressful situations due to communication problems, hesitation to express their thoughts in front of teachers and peers. 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. If necessary, schools can also refer students to professional consulting institutions. Teachers should also assist students with inferior academic achievement to minimize their troubles with learning.

References

Chapell, M.S., Blanding, Z.B., Takahashi, M., Silverstein, M.E., Newman, B., Gubi, A., & Mccann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology, 97 (2)*, 268-274.

Ellison, K.W. (2004). *Stress and the Police Officer,* 2nd ed., Charles C. Thomas Publishers, Springfield, IL.

Huan, V.S., See, Y.L., Ang, R.P. and Har, C.W., (2008). The impact of adolescent concerns on their academic stress. *Educ. Rev., 60(2)*: 169-178.

Hudd, S., Dumlao, J., Erdmann-Sager, D., Murray, D., Phan, E., Soukas, N., & Yokozuka, N. (2000). Stress at college: Effects on health habits, health status and self-esteem. *College Student Journal, 34(2)*, 217-227.

Hussain A, Kumar A, (2008). Academic stress and adjustment among high school students. *J Indian Acad Appl Psychol*; *34* (Special Issue): 70-3.

ISR (1996). Stress and the First Year Students. *ISR Bulletins,* 13-March 15.

Kadapatti, M. and Khadi, P.B. (2006). Factors influencing for academic stress among preuniversity students. *Indian Psychol. Rev., 66(2)*: 83-88.

Kaplan, D.S., Liu, R.X. and Kaplan, H.B. (2005). School related stress in early adolescence and academic performance three years later: The conditional influence of self expectations. *Soc. Psychol. Edu., 8(1)*: 3-17

Khalid, R., & Hasan, S. S. (2009). Test anxiety in high and low achievers. *Pakistan Journal of Psychological Research, 24* (3-4).

Kohler, J. M., Munz, D. C. & Grawitch, M. J. (2006). Test of a dynamic stress model for organisational change: do males and females require different models? *Applied Psychology: An International Review*, *55 (2)*; 168–191.

Kumar, S. and Singh, A.P., (2004). Stress state and its relationship with academic performance among students. *Recent Trends in Human Stress Management*, pp. 55-66.

Kuruppuarachchi, K. A. (2002). Psychological distress among students from five universities in Sri Lanka: Ceylon. *Med. J.*, March, *47 (1)*, 13-5.

Lee, R. M., Keough, K. A., & Sexton, J. D. (2002). Social connectedness, social appraisal, and perceived stress in college women and men: *Journal of Counseling and Development*, *80 (3)*, 355-361.

Misra, R., McKean, M., West, S., & Russo, T. (2000). Academic stress of college students: Comparison of student and faculty perceptions: *College Student Journal, 34(2)*, 236-245.

Nicholson, A. M. (2009). Effects of test anxiety on student achievement (ACT) for college bound students. *Dissertation Abstract International*. DAI-A-70/07, AAT 3366126

Polychronopoulou, A. and Divaris, K. (2005). Perceived Sources of Stress Among Greek Dental Students. *J Dent Educ.* 69(6): 687-692.

Sinha, B. K., Willson, L.R. and Watson, D.C. (2000). Stress and coping among students in India and Canada. *Canadian Journal of Behavioural Science*, Oct.

Sulaiman, T., Hassan, A., Sapian V.M and Abdullah S .K. (2009). *European journal of social sciences*, *10(2)*, 179-184.

Vijaylakshmi, G. and Lavanya, P. (2006), Relationship between stress and mathematics achievement among intermediate students. *Edutracks*, *7(7)*: 34-37.