Research Paper Education

Study of Content of Science as Dimension of Psychological Stress Among Science Students

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ABSTRACT

This study attempts to assess the content of science as dimension of psychological stress among senior secondary science students studying in the schools of different types of boards. 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 did not differ significantly on psychological stress dimension content of science. However rural and urban science students differed significantly. Since mean difference was in favor of rural students, it indicates that rural science students were found more stressed than urban science students. Further, No significant difference was observed among the students of diiferent types of boards.

KEYWORDS

Introduction

The present scenario is coming up with technological revolution, web technology and web culture. Naturally it is the achievement of people especially in the field of science besides humanities. It is well considered opinion proven rationally that science is the great potential factor for the development of country. Hence science education in every country occupies a significant emphasis. The very structured knowledge in science education demands good intellect people with scientific attitude and rationale mind. Difficulty in understanding of science experienced by students in general, fear of science and underachievement in science subjects are the common problems due to which students used to suffer. Science also exerts a number of additional demands on students. The science curriculum requires enormous commitment and hard work by students. The intense curriculum may produce stress on science student's life. The school setup, teacher's expectations, infrastructure facilities, modalities of teaching etc. promote the feeling of pressure associated with being in the science stream. Most of the time, science students have complain of dwelling in between their efforts for better achievement and teacher's/ parent's expectations. Even investing time and efforts they find it difficult and get easily stressed. It is being experienced by parents and teachers in schools that science students suffer from psychological stress which influence the achievement.

In the hope of preparing students for their future roles in science, it is important to identify stressful factors that may affect their successful development. One study identified the major academic stressors among college students to be tests, grade competition, time demands, professors and classroom environment, and career and future success (Murphy & Archer, 1996). Misra, et al., (2000) found that academic stress among college students varies across year in school and gender. 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). Content of science is the major causal factor of stress among science students. This refers to the stress among since students in terms of the type of syllabus, the difficulty level and the expected activities., which is reflected in the increasing amounts of schoolwork, assignments and practicals. The researcher found that there is no research conducted particularly in Western U.P pertaining to this issue. Therefore, it was decided to conduct a research to examine this particular issue. In the present study, the researcher attempted to study the content of science as dimension of psychological stress among senior secondary science students.

Objectives

1. To study the nature of content of science as dimension of psychological stress among science students.
2. To study the difference between male and female science students on content of science as dimension of psychological stress.
3. To study the difference between rural and urban science students on content of science as dimension of psychological stress.
4. To study the difference among science students of different types of boards on content of science 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 the institutions recognized by different boards in Meerut province. 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 content of science 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 content of science as dimension of psychological stress, analysis of variance (ANOVA) was used. t-test was used to study the difference between male and fe-

male, rural and urban science students. Results are presented in the following tables.

Results

After analysis the data, it was observed that the mean, median and mode values of all the 631 science students on psychological stress dimension content of science were found to be 20.781, 21 and 21 which indicate moderate level of stress due to content of science.

Table-1

Summary of t-test for difference between male and female science students on content of science as dimension of psychological stress

Dimensions of Psychological Stress	Male (N = 419)		Female (N = 212)		t-value
	Mean	S. D.	Mean	S. D.	
Workload in Science	21.13	5.93	20.21	5.88	1.85

It is evident from Table - 1 that t-values between the means of male and female science students on psychological stress dimension content of science was found to be 1.85 which was not significant at 0.05 level of significance. This implies that apparent differences in the means were not true. These were due to chance or sampling error.

Table-2

Summary of t-test for difference between rural and urban science students on content of science as dimension of psychological stress

Dimensions of Psychological Stress	Rural (N = 218)		Urban (N = 413)		t-value
	Mean	S. D.	Mean	S. D.	
Workload in Science	21.99	5.94	20.21	5.83	3.62**

It is evident from Table- 2 that t-values between the means of rural and urban science students on psychological stress dimension content of science was found to be 3.62 which was significant at 0.01 level of significance. This revealed the fact that rural and urban science students differed significantly on psychological stress dimension content of science. Since mean difference was in favors of rural students, it indicates that rural science students were found more stressed than urban science students.

Table - 3

Sums, sum of squares, means and standard deviations of CBSE, UPB and ISC science students on psychological stress dimension content of science

Types of Board	N	Sum	Sum of Squares	Mean	S. D.
CBSE	303	6196	137572	20.45	6.00
UPB	169	3665	85111	21.69	5.79
ISC	159	3277	73003	20.61	5.88

Table - 4

Summary of analysis of variance for difference among science students of different types of boards on psychological stress dimension content of science

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	2	175.60	87.8020	2.510
Within	628	21965.16	34.976	
Total	630	22140.76		

Table - 4 shows that F-value has come out to be 2.510, which was not significant at 0.05 level. This means that the students of different types of boards were not differed significantly on psychological stress dimension content of science. It implies that science students of all types of boards are equally and moderately stressed due to content of science.

Conclusions

The findings of the study indicates that male and female did not differ significantly on content of science as dimension of psychological stress, however, rural and urbal science students differed significantly Significant difference was observed among the students of diiferent institutions. Since mean difference was in favor of rural students, it indicates that rural science students were found more stressed than urban science students. Further, No significant difference was observed among the students of diiferent types of boards content of science as dimension of psychological stress.

REFERENCES

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