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Study of Home and Family Environment on Psychological Stress among Science Students

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Abstract : *This study attempts to assess the home and family environment 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 home and family environment. 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 different types of institutions. Highest psychological stress due to its dimension home and family environment was found in the students of GAS and lowest in the students of KV. Similarly, Significant difference was observed between the students of different types of boards. Highest psychological stress due to home and family environment was found in the students of UPB and lowest in the students of ISC.*

Keywords-*Achievement, Home and Family Environment, Psychological Stress, Science Students*

Introduction

Student life has many benefits, but it also imposes inevitable stresses. Particular stress points occur at the beginnings and ends of academic years, especially at the start and towards the end of the academic year. These times of increased stress can represent a tipping point when coping resources can become overwhelmed. Common student issues and problems include study issues, money worries, relationships, housing, family pressures, and culture and identity. 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. 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. 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 and friends, eating and sleeping habits and time pressure may also be sources of stress. Home and Family Environment is the most important factor. This refers to the stress among science students arising from the illness of family member, workload at home, and unhealthy family environment. The home and family environments for children continue to change. Changes in the family culture affect the home environment. Change in the home environment affects many aspects of family life. Establishing a daily routine is difficult in a hurried generation. Monitoring out-of-school activities has decreased for latchkey children. The socioeconomic status (SES) of parents, their education, and the contacts they make with the schools affect how they encourage children's development and progress in school. The amount of parent interest and time directly affect the amount of reading, writing, and discussion between family members. The way families share their time together, the amount of support given, parenting styles, and the emphasis on learning, seem to be changing.

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. 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. 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 (Ellison, 2004, Polychronopoulou et al. 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 home and family environment as dimension of psychological stress among senior secondary science students studying in different types of institutions.

Objectives

1. To study the nature of home and family environment as dimension of psychological stress among science students.
2. To study the difference between male and female science students on psychological stress dimension home and family environment.
3. To study the difference between rural and urban science students on

psychological stress dimension home and family environment.

4. To study the difference among science students of different types of institutions on psychological stress dimension home and family environment.
5. To study the difference among science students of different types of boards on psychological stress dimension home and family environment.

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 home and family environment 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 home and family environment as dimension of psychological stress, analysis of variance (ANOVA) was used. In case of significant F-value, t-test was used.

Results

After analyzing the data, it was observed that the mean, median and mode values of all the 631 science students on psychological stress dimension home and family environment were found to be 21.471, 21 and 21 respectively, which indicate moderate level of stress among science students due to home and family environment.

It is evident from Table - 1 that t-values between the means of male and female science students on psychological stress dimension home and family environment was found to be 3.42 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 home and family environment. 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 home and family environment.

It is evident from Table - 2 that t-values between the means of rural and urban science students on psychological stress dimension home and family environment was found to be 5.75 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 home and family environment. 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 home and family environment.

Table - 4 indicates that F-value was 10.087, which was significant at 0.01 level. This means that students of different types of institutions differed significantly on psychological stress dimension home and family environment. This analysis shows significant difference among groups. To know the significance of difference between groups, t-values were calculated. Results of t-test for the stress dimension home and family environment are given in Table – 5.

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 home and family environment. 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 home and family environment. It is also clear from Table-3 that highest mean on psychological stress dimension home and family environment was found for the students of GAS and lowest for the students of KV.

It is depicted from Table – 7 that F-value has come out to be 22.499, which was significant at 0.01 level. This means that students of different types of boards differed significantly on psychological stress dimension home and family environment. 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 home and family environment are given in Table- 8.

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 home and family environment. It is also clear from Table-6 that highest mean on psychological stress dimension home and family environment 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 home and family environment has been emerged as major causing factor of stress among science students. Male and female science students were found to be equally stressed due to home and family environment. While, Rural science students were found to be more stressed than urban science students due to home and family environment. 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 home and family environment. 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 home and family environment. Highest mean on psychological stress dimension home and family environment 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 home and family environment. Highest mean on psychological stress dimension home and family environment was found for the students of UPB and lowest for the students of ISC.

Findings of the present study indicate that psychological stress dimension home and family environment has been emerged as an important source of stress among science students. Therefore, Parents' expectations should be in the light of their child's abilities and capabilities. They should not compel their children to learn subject matter according to their choice. They should free their children to select the discipline. Parents can guide in selecting particular subjects for learning, but they should not press to choose. They should not make comparison between their own children or the classmates of their children. They should accept their children as they are. They should not be more ambitious about their performance, beyond their *abilities* and *capabilities.* Extra academic support should be managed by the parents to reduce stress of their children. In case of failure or low achievement, parents should not blame the children. In this situation parents should motivate their children to learn according to the different strategies and to do hard work. Parents should be aware about their children's health. They must discourage junk food and caffeine like coffee, coke and tea during exam time. Balanced diet should be provided to the students throughout the year. Daily learning schedule of the child should not be disturbed or changed by their parents, particularly in examination days. Parents should allow their children to avail facilities like T. V., telephone etc. for limited time.

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

Dimensions of Psychological Stress	Male (N = 419)		Female (N = 212)		t-value
	Mean	S. D.	Mean	S. D.	
home and family environment	22.11	7.03	20.02	7.58	3.42**

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

Dimensions of Psychological Stress	Rural (N = 218)		Urban (N = 413)		t-value
	Mean	S. D.	Mean	S. D.	
home and family environment	23.65	6.88	20.22	7.22	5.75**

Table - 3

Sums, sum of squares, means and S.D.s of science students of different types of institutions on psychological stress dimension home and family environment

Types of School	N	Sum	Sum of Squares	Mean	S. D.
KV	95	1770	39106	18.63	8.07
JNV	82	1916	49254	23.37	7.44
GIC	90	2103	52611	23.37	6.24
GAS	79	1967	51497	24.90	5.69
PS	98	1907	42437	19.46	7.41
CMS	96	1908	42142	19.88	6.67
AS	91	1935	45449	21.26	6.92

Table - 4

Summary of ANOVA for difference among science students of different types of institutions on psychological stress dimension home and family environment

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	6	2954.22	492.37	
Within	624	30457.73	48.81	10.087**
Total	630	33411.95	** p < 0.01	

Table - 5

Summary of t-matrix for difference between science students of different types of institutions for psychological stress dimension home and family environment

Types of Schools	KV	JNV	GIC	GAS	PS	CMS	AS
KV	0	4.010**	4.421**	5.772**	0.738	1.155	2.370*
JNV		0	0.001	1.456	3.496**	3.282**	1.915
GIC			0	1.649	3.871**	3.661**	2.135*
GAS				0	5.342**	5.268**	3.687**
PS					0	0.408	1.718
CMS						0	1.391
AS							0

Table - 6

Sums, sum of squares, means and S.D.s of CBSE, UPB and ISC science students on psychological stress dimension home and family environment

Types of Board	N	Sum	Sum of Squares	Mean	S. D.
CBSE	303	6434	154460	21.234	7.686
UPB	169	4070	104108	24.083	6.021
ISC	159	3002	63928	18.881	6.773

Table - 7

Summary of ANOVA for difference among science students of different types of boards on psychological stress dimension home and family environment

Source of Variation	Df	Sum of Squares	Mean Sum of Squares	F
Between	2	2234.02	1117.01	22.499**
Within	628	31177.93	49.65	
Total	630	33411.95	** p < 0.01	

Table - 8

Summary of t-matrix for difference between science students of different types of boards on psychological stress dimension home and family environment

Types of Boards	CBSE	UPB	ISC
CBSE	0	4.150**	3.248**
UPB		0	7.339**
ISC			0