

CHAPTER 17

Gender Differences in the Dimensions of Academic Emotion Regulation Among Undergraduate Students using Multivariate Analysis of Variance

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Abstract

The Sustainable Development Goals 16, aims at “promoting peaceful, inclusive societies to build a sustainable society with successful inclusive institutions”, which can only be achieved when culture and society changes for the betterment. For achieving these goals it’s important to understand significance of emotional regulation as there is prominent role of society and culture on systematically shaping emotion regulation. The present study investigated the differences in the mean value of the dimensions of academic emotion regulation (AER) with respect to gender in university undergraduate students based on the mentioning in the literature that AER is gender sensitive (Buric et al. ,2016). The sample size consisted of 214 undergraduates (102 female, 112 male) from different universities of Jalandhar, Punjab, India. The students were selected using simple random sampling technique. Multivariate analysis of variance statistical technique was applied using SPSS statistics version 23 software. The Academic emotion regulation construct is made up of eight dimensions namely “Respiration, venting, Suppression, Reappraisal, Developing Competencies, Social Support, Redirecting Attention and Situation Selection.” The findings revealed that Indian undergraduate’s male and female students do differ with respect to selection of their strategy to regulate academic emotion regulation. Since, the MANOVA, wilks’ lambda was found to be 898.254 with p value 0.000 which is less than the level of significance $\alpha = 0.05$. Post hoc Bonferroni test revealed the male and female undergraduate students differed particularly in the dimensions venting, social support and suppression as far as the applied strategy to

regulate their emotions related to studies was concerned. Education implications of the findings in the Indian context for stakeholders like parents and university teachers for ensuring gender equality at home and in class are discussed.

Keywords. Gender equality, Sustainable Development Goal 16, Academic emotion regulation, Multivariate analysis of variance, Culture and Society, Indian undergraduates.

1. INTRODUCTION

Educational settings provide variegated emotions to the students. There is a complex relationship between the “motivational, cognitive and emotional aspects of learning.” Since, emotions are interrelated with different aspects of learning, it is important to study the academic context of emotional regulation (Buric, 2016). Emotion regulation has become a popular topic in the decade across various disciplines in the disciplines and sub disciplines of psychology and education.

When transitioning from one stage to another be it academic setting or life, adolescents experience emotional and motivational disbalance. Especially when there is a change of environment from school to college. These motivational and emotional factors affect their personal and academic development (Usán Supervía, 2021). This also establishes a connection between self-efficacy of the students and emotional regulation. Self-regulation is essential in students to cope up with different challenges (Usán Supervía, 2021). To keep up with changes around them and to match with the changes in the academic environment, there is a need to study the role of emotions and how to regulate those emotions that are difficult to comprehend for students. The need to fill the gap between the transitions, calls forth the need to study academic emotional regulation.

Quality education and inclusive society are significant challenges faced by Indian education system (Harshitha, 2022). The main objective is to establish the role of emotion regulation in emotional wellbeing of individuals, there are many studies that relate emotion regulation strategies to the different demographic variables like race, gender, ethnicity and culture (Betancourt & Lopez, 1993). It serves as a way for channeling emotion responses of individuals in particular culture (Saarni, 1984). Not only gender but the cultural norms also shape how emotions are regulated. Male and female differ in specific strategies due to the biological and social differences (Kring & Gordon, 1998). Since, culture holds different cultural norms, belief systems and values that govern the thoughts, perception of self in both the genders (Cheung & Park, 2010). Being in particular culture both encourages and discourages certain emotions regulation. AM, Azghandi (2022), found direct and significant relationship between the social support, stress and emotion regulation of individuals.

The present paper aims to establish the significance of dimensions of Academic Emotion Regulation (AER) on gender for an inclusive society for which there is need of accountable institution which can be built by understanding the significance of emotion in all aspects. For this, Academic Emotional Regulation Questionnaire (AERQ), constructed by Buric, 2016, which was later “validated in Indian context by Chakraborty and Chechi (2020) using network psychometrics.” The tool consists of 37 items initially, after validation in Indian context 36 item out of 37 were retained, measuring eight dimensions namely “situation avoidance, competency development, redirecting of attention, reappraisal, suppression, respiration, venting and seeking social support.” Further, Buric (2016), found positive relations and in coincidence with the theoretical expectations of the relations of gender, perceptions of control over academic performance, learning related emotions and academic achievement. of emotional regulation strategies in context for university students. Adding to this, female students regulate their emotions to a greater extent compared to their male counterparts regardless of the emotional regulation strategies they are using. But here when compared to their male counterparts, female experience higher level of unpleasant emotions, which are positively related to reappraisal, venting, respiration and suppression (Pekrun et al., 2004).

2. METHODOLOGY

To find gender difference in academic emotion regulation, descriptive research design was employed. After seeking permission through proper channels, AERQ questionnaire was used for survey method to gather data from educational institutions.

2.1. Population of the study

The population of the present study consisted of first- and second-year students in the universities of Jalandhar, Punjab.

2.2. Sample of the study

For the present study, first- and second-year students pursuing the courses of “B.A, B.Sc. and BCom were selected as samples (N=214, 112 male and 102 female).”

2.3. Sampling technique

Using the method of simple random sampling, to ensure the randomization of the samples and generalization of the findings, google forms were used to collected data for the present study.

2.4. Tool used in the study

“The tool of Academic “Emotion Regulation Questionnaire (AERQ)”, validated in Indian context was used for the present study. The tool uses the five-point Likert scale, where responses refer from 1 = strongly disagree and 5 = strongly agree”.

Table 1. Description of the tool AERQ

S. No	Dimensions	No. of items as validated in India	Description
1	“Situation Selection”	4	<i>“Circumventing academic situations that can trigger unpleasant emotions”</i>
2	“Developing competencies”	5	<i>“Behaviours and actions students implement to develop capabilities and competences which will prevent or lessen unpleasant emotional experiences”</i>
3	“Redirecting Attention”	6	<i>“Attempts to refocus one’s attention in order to avoid or to block the emotional experience”</i>
4	“Reappraisal”	5	<i>“students’ attempts to undermine the relevance of a situation that evokes unpleasant emotions”</i>
5	“Suppression”	5	<i>“students’ attempts to suppress subjective and behavioural manifestations of unpleasant emotions in academic situations</i>

			<i>in order to hide them from others”</i>
6	“Respiration”	3	<i>“students' attempts to reduce subjective feelings of tension accompanied by unpleasant emotions through deep breathing”</i>
7	“Venting”	5	<i>“students’ behavioural manifestations and expressions of unpleasant emotions as a way of releasing the negative energy”</i>
8	“Social Support”	3	<i>“Sharing unpleasant emotions and seeking comfort from close members of the student's social milieu”</i>

3. RESULT

After gathering data using google form through survey method, the data was shifted to an excel sheet and then the data analysis was done using SPSS Statistics Software 23.

3.1 MANOVA: Multivariate analysis of variance

MANOVA (Multivariate analysis of variance) is a statistical tool commonly used in the fields of education and psychology, it is very similar to ANOVA with many dependent variables. “ANOVA is test for difference in means of two or more groups, whereas MANOVA determines the difference in two or more vector of means” (A French, 2008).

When at least one independent variable is manipulated, MANOVA is useful here. By measuring many dependent variables in single experiment, it has a hand over ANOVA. By measuring several variables in single experiment, it helps discover which variable is truly important and protects against type 1 error.

In MANOVA (Multivariate Analysis of Variance), the F value of (Wilks' λ) is observed instead of univariate F value, on the basis of comparison of error in variance or covariance matrix and its effects (A French, 2008). When more than one response variable is being measured, "MANOVA is used more appropriate to use as in this statistical technique all dependent variable is included in single analysis" (CJ Huberty, 2006).

3.2 Data Analysis

3.2.1 Multivariate Tests

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	
Intercept	Pillai's Trace	.972	898.254 ^b	8.000	205.000	.000	.972
	Wilks' Lambda	.028	898.254 ^b	8.000	205.000	.000	.972
	Hotelling's Trace	35.054	898.254 ^b	8.000	205.000	.000	.972
	Roy's Largest Root	35.054	898.254 ^b	8.000	205.000	.000	.972
Gender	Pillai's Trace	.133	3.941 ^b	8.000	205.000	.000	.133
	Wilks' Lambda	.867	3.941 ^b	8.000	205.000	.000	.133
	Hotelling's Trace	.154	3.941 ^b	8.000	205.000	.000	.133
	Roy's Largest Root	.154	3.941 ^b	8.000	205.000	.000	.133

a. Design: Intercept + Gender

b. Exact statistic

Interpretation:

The multivariate analysis of variance conducted to study the difference of the dimensions of academic emotion regulation with respect to gender led to obtaining of significant results with the Wilks' lambda equal to 0.867 for an f value 3.94 and p value equal to 0.000. The partial eta score is 0.133 which is an estimate of the effect size, which is low. Hence, the null hypothesis is rejected and it employs that linear combination of all the dependent variables or dimensions of academic emotion regulation do not get equally affected by gender. Depending upon the weights estimated by manova the different dimensions have varying extent of differences in their estimates with respect to the two levels of the independent variable gender. It also implies each of these dimensions of academic emotion regulation get uniquely affected by male and female university student's gender.

3.2.2 Pairwise Comparisons

Dependent Variable	(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
						Lower Bound	Upper Bound
SS	0	1	-.098	.110	.370	-.315	.118
	1	0	.098	.110	.370	-.118	.315

DC	0	1	.160	.101	.116	-.040	.360
	1	0	-.160	.101	.116	-.360	.040
RA	0	1	-.106	.113	.353	-.329	.118
	1	0	.106	.113	.353	-.118	.329
Reapp	0	1	.027	.115	.812	-.199	.254
	1	0	-.027	.115	.812	-.254	.199
Sup	0	1	.294*	.107	.006	.084	.505
	1	0	-.294*	.107	.006	-.505	-.084
Res	0	1	.192	.112	.089	-.029	.413
	1	0	-.192	.112	.089	-.413	.029
Venting	0	1	-.272*	.103	.009	-.474	-.069
	1	0	.272*	.103	.009	.069	.474
SoSup	0	1	.300*	.115	.010	.074	.527
	1	0	-.300*	.115	.010	-.527	-.074

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Interpretation:

The post hoc pairwise comparison revealed that the dimensions suppression, venting and social support are significantly influenced by gender. The dimension social support has maximum extent of mean difference of .300 between boys and girls, whereas the dimension venting has the least mean difference of 0.272 between boys and girls.

4. DISCUSSION

Studies about emotions and emotion regulation, has gained attention of educational researchers in the past decade. Emotion regulation is established as an important ability for the development and adjustment of individuals in the society and has possible relations to the academic performance too. But there is a lack of specific tool that focuses on certain strategies to regulate those emotion in different academic situations. AERQ as a scale has shown significant psychometric properties with relation to the gender and university students in abroad (in Croatia, Buric et al., 2016)

and in India (Chakraborty and Chechi, 2020). The use of present study to unearth the differences in the emotional strategies employed to regulate academic feelings by male and female students in universities revealed that both the group members differ in the employment of academic emotion regulation strategies.

The dimensions venting, social support and suppression were found to be applied differently by male and female undergraduate students. Male students were found to be taking the help of venting strategy to deal with their unpleasant academic emotions, while female students suppressed their unpleasant academic emotions and sort social support respectively. These findings should be in the cognizance of the faculty community undertaking instructions at the university level. Awareness of these findings can help the administrators in developing policies which can improve the socio-emotion climate of the institutions. Parents can better upbringing their young wards with respect to their studies with the know-how of these results.

4.1 Recommendations for further studies

- i. Further studies can be conducted on measuring the difference in the employment of academic emotion regulation strategies of undergraduate students in different cultures.
- ii. Also, role of class level on strategies to regulate emotion can be studied.
- iii. The role of locale (rural and urban) in the regulation of academic emotion and their strategies can be explored further, and their effect on building a effective and inclusive institution.

4.2 Limitations

- i. The present study was restricted with the students of sciences, commerce and arts of Jalandhar city of Indian state of Punjab.
- ii. The sample size is relatively small and gives and leaves the option to replicate this study with a larger sample size.

5. CONCLUSION

Children who are well aware of their emotions and know how to take accountability of those emotions in achievement of their goals, grow up as adults who build peaceful, just and inclusive societies. Educational settings are the best place where one can understand the significance of emotion and construct a population which is very conscious and build a accountable institution. The role of gender on academic emotion regulation is established yet again in the present study compelling the stakeholders to make a decisive decision on this very real academic emotion. It is hoped that the present study would further pave way for Indian researchers in exploring the different facets of the mentioned variable in different cultural context.

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