

Exploring the Factors affecting Emotional Regulation in Students of Higher Education

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Abstract: Recent study focuses to identify the interpersonal factors associated with emotion regulation among university students. Previous researches, focused on intra-personal forms of emotion regulation. Besides identifying the inter-personal factors in emotion regulation of both the levels, under-graduation and post-graduation, the research aimed at comparing the obtained factors. On random basis 87 students (n=87) were aggregately selected for the purpose of data collection. Interpersonal Emotion Regulation Questionnaire was utilized as the tool of data collection. The analysis was done separately for both the segments, under-graduation and post-graduation. In case of under-graduation, three factors were found to be associated with emotion regulation, Emotional Dependency (F1), Observance (F2) and Inquisitiveness (F3). The factors identified, in case of post-graduation are Observance (F1), Emotional Inclusion (F2) and Solace-seeking (F3). While comparing under-graduates and post-graduates in terms of the factors affecting emotion regulation, 'Observance' was the factor that overlapped, differing in terms of intensity subjected to the positioning; F2 in case of under-graduates and F1 for post-graduates. In conclusion, the research outcome suggested the presence of more positive traits like maturity, open-mindedness and mindfulness etcetera, in post-graduate students in comparison to under-graduate students. This study has important implications in relation to what factors affect emotion regulation in students of higher education and it becomes all the more important on the point that emotion regulation has got bearing on the overall wellness of the students.

Keywords: Emotion Regulation, Emotional Inclusion, Under-graduation, Post-graduation, Observance, Inquisitiveness, Solace-seeking, Emotional dependence.

Article History: Received: 12th March, 2025, Revised: 5th April, 2025, Accepted: 10th April, 2025, Published: 18th April, 2025

Introduction

Emotions can be defined as biological responses, mostly of short duration that originate from external or internal stimuli, which imply a perceptual and a quick appraisal process of a whole situation. Emotions have the capacity to regulate other processes and prepare the individual to act in favorable or unfavorable conditions, which imply a wide emotion regulation process (Cole & Hall, 2008; Cole, Martin, & Dennis 2004). Emotions have got cognitive and physiological dimensions. The varied emotional experiences act out as rocky un-even terrains in youths. Therefore, regulation of emotions has direct bearing on all behaviors. Ill emotion regulation may turn young minds towards risk-taking behaviors or maladaptive behaviors. Due to this emotion regulation has transdiagnostic dimension. Another way to say is emotion regulation is linked to mental-psychological well-being of mind, especially young ones (students in higher education). Furthermore, emotion regulation is affected by both, self and others in respective context. Thompson (1991) defined emotional regulation as the extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying certain emotion reactions, specifically their intensity and their temporal characteristics, implying physiological, cognitive and behavioral regulatory processes. Thompson 1994 definition acknowledges that emotions can be regulated both intra-personally through self-regulation and interpersonally through others. In fact, interpersonal

aspects are vital in developing intrinsic emotion regulation because emotion regulation skills are acquired within a social context and continue to mature through social interaction throughout life (Hofmann et al., 2016).

Research Review

The classic study by Gross et al. revealed that effective use of 'adaptive' emotion regulation strategies, such as recognizing and appropriately expressing emotions, has been associated with enhanced physical and mental health outcomes and improved academic performance (Gross and Thompson, 2007; Mc Laughlin et al. 2011). Conversely, the use of 'maladaptive' emotion regulation strategies, such as rumination, has been linked to increased stress, anxiety, and depression, with adverse effects on wellbeing (Schraub et al., 2013; Valenzuela et al., 2020; Chen et al., 2022). Nadeem et.al. studied the relationship between emotion regulation and academic achievement among university students in the universities in Pakistan, using Emotion Regulation Questionnaire and the results depicted a significant positive association between cognitive reappraisal and academic performance while, a significant negative association between expressive suppression and academic performance. In another study on university students intending to find relationships between emotion control and happiness and resilience, it was found that emotion regulation indirectly affected happiness and resilience through chain mediating effect of learning

motivation and target positioning (X. Chen, 2022).

Statement of the problem

Emotions need to be managed in order to bring stability across the varied experiences of life, especially when it comes to students for, they are expected to accomplish various roles with competency and efficiency. By letting emotions go unregulated, the students might involve themselves in high-risk behavior or increase the risks of violating their goals in life. Students in university belong to the status of young adults which is one of the most developmentally and evolutionarily vulnerable life stage. At this stage they engross with seeking platform for overall stability (socio-economical, cognitive, moral, emotional and so forth) in future life.

Emotional regulation leads to emotional stability which is of prime concern to students to remain efficient and productive. On the same ground this research aimed to identify the factors underlying emotion regulation in undergraduate students and in post-graduate students separately and furthermore, comparing the factors to know the difference, if any, in emotion regulation in the target subjects. On surfing the digital source, none of the researches has been found to be reflecting on emotional regulation taking along the both phases of higher education, under graduation and post-graduation. In this perspective the up taken research work becomes all the more important.

Objectives of the Research

The research aims to explore the factors underlying emotional regulation in university students at two different stages of higher education: under-graduation and post-graduation. The objectives are:

- 1) To explore the factors underlying emotional regulation in under graduates.
- 2) To explore the factors underlying emotional regulation in post graduates.
- 3) To explore the similarities/dissimilarities regarding factors underlying emotional regulation, if any, in under-graduates and post-graduates.

Methodology

Principal Factor Analysis was used to reveal the factors underlying emotion regulation in under-graduates and post-graduates.

Sample Design: Sample comprised of 87 university students (UG and PG) aged between 19-25 years old. 43 % respondents were male and 57 % respondents were female. The respondents were selected randomly from the management domain (BBA and MBA programs). The socio-demographic data of the respondents show that most of the students live with their family, few were staying in temporary lodges (those who belong to other cities).

Instrument of Data Collection: Interpersonal Emotional Regulation Questionnaire (IERQ) developed

by Hofmann, Carpenter & Curtiss (2016); consists of 20 items; was used for data collection. It has four dimensions containing five items each. The dimensions are: *Enhancing Positive Affect*, which describes a tendency to seek out others to increase feelings of happiness and joy; *Perspective Taking*, which involves the use of others to be reminded not to worry and that others might have worse situations; *Soothing*, which consists of seeking out others for comfort and sympathy; and *Social Modelling*, which concerns looking to others to see how they might cope with a given situation. Each item has five optional responses: Not at all, A little bit, Moderately, Quite a bit, Extremely. The data was collected through this measurement scale as per the instruction inscribed on it. This tool is valid for the respondents above 18 years.

Tool of Analysis: Keeping in view the objective of the study and the nature of data (Likert's scale) Factor Analysis was used as the analysis tool. The exploratory analysis was needed to find out the dimensions of change; if any; in the emotional regulation aspect of the university students in graduation and post- graduation. PSP software was used to do the factor analysis of the collected data.

Results and Discussion

Principal factor analysis utilizing varimax rotation was conducted. The factors were extracted to be retained for further explanation; to meet the objectives. Four criteria were used to extract and retain the factors: Eigenvalue; Variance; Scree plot and Rotated matrix. According to "Kaiser's rule" only those components or factors should retain whose eigenvalue is greater than 1. On this basis three factors were selected to retain. Through exploratory factor analysis the final interpretation was done. The results have been separately discussed under headings- (a) under-graduates (objective 1), (b) post-graduates (objective 2) and (c) Overall Discussion (objective 3).

Results and Discussions: (a) Under-graduates

Communality is the sum of the squared loadings on a factor matrix for a particular item indicates the proportion of variance for that given item that is explained by the factors. The higher the communality value, the more the extracted factors explain the variance of the item. The communality in case of under-graduates is shown in **Table 1**. The table of total variance accounted for in the initial factor solution for 20 variables (items) is shown in **Table 2**. Only first five factors with an eigenvalue of 10.27, 1.86, 1.62, 1.07 and 1.00 successively match the criterion value of 1.00. As the Eigenvalue criteria was not sufficient enough, shown in **Table 3**, (as 11 out of 20 communalities are less than .7) to assure the factor determination, further criterion, Total Variance and Scree Plot were taken into account.

Table 1: Communalities based on a principal components analysis with varimax rotation for 20 items from Interpersonal Emotional Regulation Questionnaire (IERQ)

	Initial	Extraction
I have repeated, disturbing and unwanted memories of stressful experiences.	.81	.55
I have repeated, disturbing and unwanted dreams of stressful experiences.	.80	.63
I have a sudden feeling that the stressful experience is happening.	.93	.78
I feel very upset when something reminds me of stressful experiences.	.81	.65
I have strong physical reactions when something reminds me of stressful experiences.	.81	.75
I try to avoid memories, thoughts or feelings related to stressful experiences.	.77	.51
I try to avoid external reminders of stressful experiences.	.89	.64
I have trouble remembering important parts of stressful experiences.	.75	.50
I have strong negative thoughts about myself, other people or the world in general.	.92	.76
I blame myself or someone else for stressful experiences or what happened after them.	.91	.75
I have strong negative like-fear, anger, guilt or shame.	.85	.76
I have lost interest in activities I once enjoyed doing	.79	.61
I feel distant or cut off from other people.	.93	.75
I have trouble experiencing positive feelings.	.97	.89
I display irritated behavior, have angry outbursts or act aggressively.	.73	.42
I undertake too many risky activities or do things that might cause me harm.	.89	.72
I am 'super alert' or watchful or on guard.	.74	.45
I feel jumpy or easily startled.	.76	.26
I have difficulty concentrating.	.96	.63
I have trouble falling or staying asleep.	.85	.72

Table 2: Total Variance Explained

Sl.no	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Variance (%)	Cumulative%	Total	% Variance	Cumulative%	Total	% Variance	Cumulative%
1	10.27	51.4%	51.4%	9.94	49.7%	49.7%	5.21	26.1%	26.1%
2	1.86	9.3%	60.7%	1.56	7.8%	57.5%	4.93	24.7%	50.7%
3	1.62	8.1%	68.8%	1.22	6.1%	63.6%	2.57	12.9%	63.6%
4	1.07	5.4%	74.2%						
5	1.00	5.0%	79.1%						
6	.94	4.7%	83.9%						
7	.61	3.0%	86.9%						
8	.58	2.9%	89.8%						
9	.39	1.9%	91.7%						
10	.34	1.7%	93.4%						
11	.28	1.4%	94.8%						
12	.23	1.1%	96.0%						
13	.19	1.0%	96.9%						
14	.16	.8%	97.7%						
15	.13	.7%	98.4%						
16	.10	.5%	98.9%						
17	.10	.5%	99.4%						
18	.06	.3%	99.7%						
19	.05	.2%	99.9%						
20	.01	.1%	100.0						

Table 3: Eigenvalue Criteria Testing

	Initial	Extraction
I have repeated, disturbing and unwanted memories of stressful experiences.	.81	.55
I have repeated, disturbing and unwanted dreams of stressful experiences.	.80	.63
I have a sudden feeling that the stressful experience is happening.	.93	.78
I feel very upset when something reminds me of stressful experiences.	.81	.65
I have strong physical reactions when something reminds me of stressful	.81	.75
I try to avoid memories, thoughts or feelings related to stressful experiences.	.77	.51
I try to avoid external reminders of stressful experiences.	.89	.64
I have trouble remembering important parts of stressful experiences.	.75	.50
I have strong negative thoughts about myself, other people or the world in	.92	.76
I blame myself or someone else for stressful experiences or what happened	.91	.75
I have strong negative like-fear, anger, guilt or shame.	.85	.76
I have lost interest in activities I once enjoyed doing	.79	.61
I feel distant or cut off from other people.	.93	.75
I have trouble experiencing positive feelings.	.97	.89
I display irritated behavior, have angry outbursts or act aggressively.	.73	.42
I undertake too many risky activities or do things that might cause me harm.	.89	.72
I am 'super alert' or watchful or on guard.	.74	.45
I feel jumpy or easily startled.	.76	.26
I have difficulty concentrating.	.96	.63
I have trouble falling or staying asleep.	.85	.72

Eigenvalue criteria is questionable since 11 out of 20 communalities are less than .7

In respect to variability, based on initial eigenvalues, only the first three factors explained 51%, 9% and 8% of the variance respectively. The “levelling off” of the eigenvalues on the scree plot after three factors was also the reason to constrict on first three factors for further consideration. The name allocated to each factor should reflect the relative size and direction (positive/negative) of the loadings. Furthermore, by grouping together the related

variables which have bearing on the factor, the names of underpinned factors were drawn. The item wise loadings on factors are exhibited in **Table 4**. F1 was named as *Emotional dependency*. *Observance* was the term that suited while grouping the variables (reflecting stressful experiences) loaded on F2. Third factor involves the ‘perspective taking’ dimension of the instrument used for data collection; so named as, *Inquisitiveness*.

Table 4: Factor Loadings

Components	Loadings
F1: Emotional Dependency	
I have a strong negative thought about myself, other people or the world in general.	.77
I blame myself or someone else for stressful experiences or what happened after them.	.74
I have a strong negative like-fear, anger guilt or shame.	.74
I have lost interest in activities I once enjoyed doing.	.72
I feel distant or cut off from other people.	.81
I have trouble experiencing positive feelings.	.90
F2: Observance	
I have a sudden feeling that the stressful experience is happening.	.81
I have a strong physical reaction when something reminds me of stressful experiences.	.79
I undertake too many risky activities or do things that might cause me harm.	.79
I have trouble falling or staying asleep.	.74
F3: Inquisitiveness	
I try to avoid external reminders of stressful experiences.	.73
I have trouble remembering important parts of stressful experiences.	.70

‘Emotional Dependency’ (F1) was revealed as the major factor that underlie emotion regulation in under-graduate students. It indicates somehow the immaturity prevailing in them. On the other side, another factors, ‘Observance’ (F2) and ‘Inquisitiveness’ (F3) assure the presence of positive skills and approaches implied in emotion regulation by under-graduates.

Result and Discussion (b) Post Graduation

Alike the analysis done in first part, with the data of undergraduates, following the same trend, based on the Communalities (Table 5) Eigenvalues (Table 6), Variance explained and the Scree Plot, factors were retained and interpreted. The table of Total Variance accounted for in the initial factor solution for 20 variables (items) is shown in Table 6. Only the first four factors with an eigenvalue of 8.25, 2.03, 1.81 and 1.46 successively match the criterion value of 1.00. The criteria of Total Variance suggest four factors to be drawn which were reduced to three following the Scree Plot. Table 7, showing eigenvalue criterion testing, made clear the need of forming Scree Plot. In this case, the Scree Plot elbowed at the third factor, suggesting to draw three factors. The three factors selected to were termed as; F1= Observance, F2= Emotional Inclusion, F3= Solace-seeking. Interpreting the first factor (F1), ‘Observance’ it could be stated that post-graduate students were armed with positive traits such as observing, processing and learning to smoothly regulate the flow of emotions. The second factor (F2), ‘Emotional Inclusion’ indicates post- graduate students are openminded and tends to include the outside world in emotion regulation. They have moderate level of emotional intelligence to get benefited by the knowledge and skills of others. The third factor (F3), ‘Solace-seeking’ paint the picture of timidness in context of emotion regulation. Two of the factors, F1 and F2 assure the presence of positive traits and maturity in post-graduates.

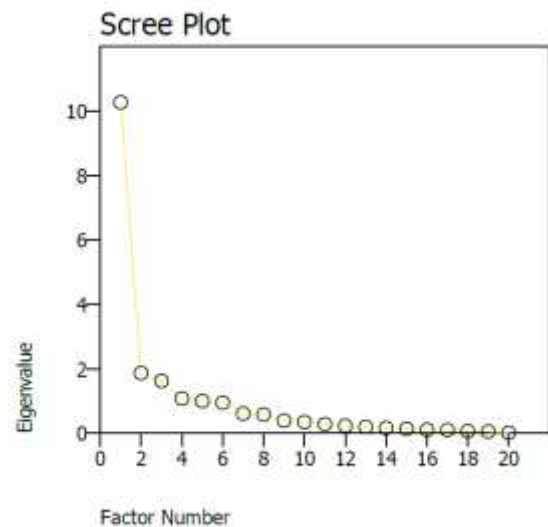


Table 5: Communalities based on a principal components analysis with varimax rotation for 20 items from Interpersonal Emotional Regulation Questionnaire (IERQ)

	Initial	Extraction
I have repeated, disturbing and unwanted memories of stressful experiences.	.89	.60
I have repeated, disturbing and unwanted dreams of stressful experiences.	.88	.57
I have a sudden feeling that the stressful experience is happening.	.75	.36
I feel very upset when something reminds me of stressful experiences.	.77	.73
I have strong physical reactions when something reminds me of stressful experiences.	.83	.47
I try to avoid memories, thoughts or feelings related to stressful experiences.	.82	.72
I try to avoid external reminders of stressful experiences.	.80	.49
I have trouble remembering important parts of stressful experiences.	.64	.40
I have strong negative thoughts about myself, other people or the world in general.	.80	.75
I blame myself or someone else for stressful experiences or what happened after them.	.79	.58
I have strong negative like-fear, anger, guilt or shame.	.78	.60
I have lost interest in activities I once enjoyed doing	.79	.70
I feel distant or cut off from other people.	.75	.52
I have trouble experiencing positive feelings.	.83	.78
I display irritated behavior, have angry outbursts or act aggressively.	.76	.63
I undertake too many risky activities or do things that might cause me harm.	.79	.61
I am 'super alert' or watchful or on guard.	.58	.34
I feel jumpy or easily startled.	.77	.32
I have difficulty concentrating.	.71	.26
I have trouble falling or staying asleep.	.50	.40

Table 6: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.25	41.3%	41.3%	7.83	39.2%	39.2%	3.81	19.0%	19.0%
2	2.03	10.1%	51.4%	1.62	8.1%	47.3%	3.25	16.2%	35.3%
3	1.81	9.1%	60.5%	1.36	6.8%	54.1%	3.75	18.8%	54.1%
4	1.46	7.3%	67.8%						
5	.99	4.9%	72.7%						
6	.89	4.4%	77.1%						
7	.71	3.6%	80.7%						
8	.63	3.2%	83.8%						
9	.58	2.9%	86.8%						
10	.54	2.7%	89.5%						
11	.46	2.3%	91.8%						
12	.35	1.8%	93.5%						
13	.30	1.5%	95.0%						
14	.25	1.2%	96.3%						
15	.23	1.1%	97.4%						
16	.19	1.0%	98.4%						
17	.13	.7%	99.0%						
18	.11	.5%	99.6%						
19	.05	.3%	99.8%						
20	.04	.2%	100.0%						

Table 7: Eigenvalue Criteria Testing

	Initial	Extraction
I have repeated, disturbing and unwanted memories of stressful experiences.	.89	.60
I have repeated, disturbing and unwanted dreams of stressful experiences.	.88	.57
I have a sudden feeling that the stressful experience is happening.	.75	.36
I feel very upset when something reminds me of stressful experiences.	.77	.73
I have strong physical reactions when something reminds me of stressful	.83	.47
I try to avoid memories, thoughts or feelings related to stressful experiences.	.82	.72
I try to avoid external reminders of stressful experiences.	.80	.49
I have trouble remembering important parts of stressful experiences.	.64	.40
I have strong negative thoughts about myself, other people or the world in	.80	.75
I blame myself or someone else for stressful experiences or what happened after	.79	.58
I have strong negative like-fear, anger, guilt or shame.	.78	.60
I have lost interest in activities I once enjoyed doing	.79	.70
I feel distant or cut off from other people.	.75	.52
I have trouble experiencing positive feelings.	.83	.78
I display irritated behavior, have angry outbursts or act aggressively.	.76	.63
I undertake too many risky activities or do things that might cause me harm.	.79	.61
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I feel jumpy or easily startled.	.77	.32
I have difficulty concentrating.	.71	.26
I have trouble falling or staying asleep.	.50	.40

Eigenvalue criteria is questionable since 15 out of 20 communalities are less than .7

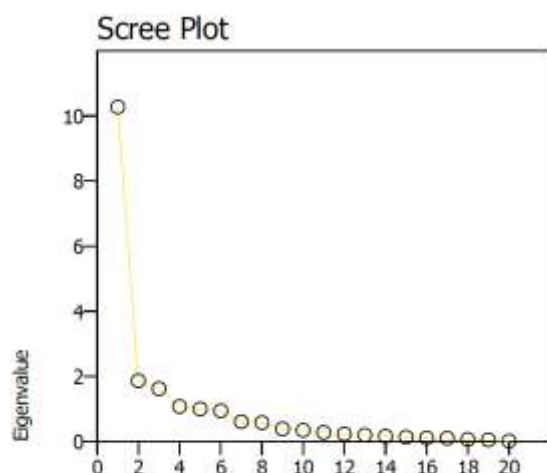


Table 8 is showing the status of factor loading. It was found that first factor F1, is loaded with 2 variables, in terms of serial of items in IERQ, 9th with load .83, 16th. Load is .73. Second factor F2 is loaded with again, 2 variables, 4th with load .77 and 6th item with load .80, in IERQ while third factor F3 is loaded on only 14th item, with load .77. Owing to the nature of variables on which the factor is loaded and counting on the size and direction of load, F1 was named as *Observance*. In a similar fashion F2 was named, *Emotional Inclusion*, F3 as *Solace-seeking*.

Table 8: Factor Loading

Components	Loadings
F1: Observance	
I have strong negative thoughts about myself, other people and the world in.	.83
I undertake too many risky activities or do things that might cause me harm.	.73
F2: Emotional Inclusion	
I feel very upset when something reminds me of stressful experiences.	.77
I try to avoid memories thoughts of feelings related to stressful experiences.	.80
F3: Solace seeking	
I have trouble experiencing positive feelings.	.77

Overall Discussion and Conclusion

People regulate their emotions in countless ways,

including turning to others for help, say inter-personal emotional regulation. In this study, we examine trends of inter-personal emotional regulation, on daily basis, among healthy adults, focusing on instances when people shared negative emotional experiences. The present findings provide important insight into the basic elements of inter-personal emotional regulation, in daily life. Interpersonal proceedings matter a lot in the same, including turning to others for emotional uplift. The current findings highlight recognizable variance in emotion regulation strategies in reference to different academic strata in higher education (Under-graduation and post-graduation). Among under-graduates, emotion regulation was governed by Emotional Dependency, Observance and Inquisitiveness. Emotional Dependency is the strongest factor (F1) that influences the emotion regulation among under-graduates. Observance, being the second factor (F2) to some extent, affected the strategies of emotional regulation. The subjects were least affected by Inquisitiveness (F3). While, in case of, post-graduates, Inquisitiveness (F1) was the strongest factor underlying emotional regulation. The other factors that were found to be effective in IER are Emotional Inclusion (F2) and Solace-seeking (F3). The intensity of Emotional Inclusion was higher to that of Solace-seeking. Moreover, another fact that was revealed in this study was, that the factors chalked out in case of under-graduate, Emotional Dependency, Observance and Inquisitiveness had strong grip on emotion regulation which is apparent from the factor loading on the items of the instrument used, IERO. While the factors found for post-graduation were comparatively less effective on emotion regulation in case of post-graduates, as per factor loading aspect. This fact underpins the probability of presence of various other factors underlying emotion regulation among post-graduates. Under-graduates turned to others in shaping their affective life.

Rounding off the conclusion it will not be exaggerated to figure out that post-graduate students relied on 'Inquisitiveness' for emotion regulation depicting traits of maturity, openness and mindfulness. Although clear-cut reason cannot be pinned for the result under-graduates showed; emotionally dependent on others; less prone to positive traits like inquisitiveness and observance. In nutshell, the findings indicate the presence of higher level of interpersonal emotion regulation techniques in post-graduate students. The most productive part of this study is that it revealed the predictive indicators of students' emotional health that plays pivotal role in overall wellbeing.

Limitations of this Research Work

On the note of conclusion, this is to clarify that this research work has got some limitations. The major one is that the results cannot be generalized owing to the reason, the sample was not representative in sense of

pervasiveness. The subjects were selected from the university located in Jharkhand, India. Secondly, although the independent variables such as demographic factors like personality, age, gender, family background, culture and socioeconomic status which has strong bearing upon the dependent variable (Emotional Regulation) have been tried to keep under control, say normally distributed among the population, despite may be some degree of skewness may creep into. Besides, the complete project is single-hand endeavor which may make space for creeping of personal biases. To counter the effects of limitations, the outcome of this research work is needed to be re-verified through longitudinal and comparative researches to be upheld in future, of course. Furthermore, the re-confirmation of the outcome is due through Confirmatory Factor Analysis, to check the model fit.

Despite limitations the study succeeded in naturistically identifying the factors regulating emotion regulation in the students of higher education. The results highlighted the similarities and dissimilarities in factors underlying two different strata of higher education- under- graduation and post-graduation.

Recommendations

The longitudinal study is recommended for the under-graduate respondents afterwards stepping in post-graduation and of post-graduates while entering in real life situations. The validity of the outcome could be re-assured on conducting the same research (with controlled and similar demographic variables) on a large sample, dispersedly located in different parts of the world.

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