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UNDERSTANDING HOW GRIT AND EGO-RESILIENCE INFLUENCE STRESS IN UNIVERSITY STUDENTS

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Abstract

In recent times, stress, happiness, grit, and resilience have been identified as key concepts related to the well-being of college students, and they have been a concern among psychologists and experts in related fields. Grit is believed to be a stable characteristic or disposition that an individual possesses, similar to other traits like personality traits, which influence their attitudes and behaviours. Highly gritty individuals are expected to display a far greater persistence in pursuing their set goals irrespective of the number of setbacks, obstacles, distractions or any other hurdles than their less gritty counterparts. In the context of an educational setup, grit is showcased as the potentially significant factor in determining outcomes of several factors such as engagement of students in the class/course, level of achievement, retention and their probability to graduate from college/school (Wolters & Hussain, 2014).

Conceptual Framework

The concept of grit

Grit can be defined as an individual's perseverance and passion for achieving long-term goals (Wolters & Hussain, 2014). Angela Duckworth defined 'grit' as "sticking with things over a very long time until you master them". Her work on grit is focused on 'non-cognitive skills', the traits and skills other than intelligence that contribute to an individual's achievements and success. Duckworth in her studies also found that smarter individuals were less gritty than their peers who scored less on intelligence tests (Hanford, 2014). The research currently examining grit indicates that grit can be measured reliably. Duckworth and colleagues (2007) developed a self-reporting scale to measure grit and provided evidence that it differs from other personality traits. Grit can be seen as a character strength of perseverance described in Positive Psychology. According to Doskoch & Flora, 2005, grit, in essence, can be referred "to the determination to accomplish an ambitious, long-term goal despite the inevitable obstacles. Singh and Jha (2008) found a significant correlation between grit and happiness and grit and life satisfaction (Hanford, 2014).

Grit in an academic context

Strayhorn (2013) found grit to be a stronger predictor of college GPA or any standardised college entrance exam among African American male students in a university with a predominantly white population. Grit thus appears to represent a compound personal characteristic that is related to the tendency of a student to be successful within the context of achievement (Wolters & Hussain, 2014). A study by Hodge et al. (2016) suggested an increased level of grit in first-generation university students. They found a positive relationship between grit and academic outcomes. They also found grit to be directly proportional to engagement, which in turn is also directly proportional to productivity. Thus, a highly gritty person might also be highly productive. (Hodge et al., 2016).

Not only are first-generation students at a disadvantage because of a lack of family support, but they also tend to face more obstacles in comparison to students coming from higher-income, well-educated families. These students must work after school hours and/or be in the house and tend to family obligations of taking care of a sibling, paying bills, or helping ailing grandparents. Researchers have shown that these factors make attending college harder and accelerate the chances of dropping out. However, grit can be a positive trait when it comes to dealing with and resolving challenging experiences (Hanford, 2014).

Ego-resilience as a concept

The concept of ego-resilience was formulated by Block and Kremen in the 1950s. For an infant to become attuned to his/her surrounding psychosocial environment, his capacity to regulate his impulses must be developed as well. The construction of ego-resilience encompasses the observable phenomenon of motivational control as a structural aspect of personality.

Ego-resilience as a concept refers to the "dynamic capacity of an individual" to modify, preserve or enhance system equilibration." It implies the individual capacity to change from and return to their character level of ego-control after the stress-influencing conditions are no longer present. Resilience is seen as a character-level quality and not as a specific one-time behavior (Block & Kremen, 1996).

Stress and its Link to ego-resilience

Psychological stresses have often been connected to unsatisfactory academic performance, sleep disturbance, and a high rate of attrition. Studies have pointed out that highly ego-resilient students have a significantly low level of psychological and emotional distress and a high level of mindfulness, whereas the ones with a lower level of resilience through sleep disturbances did not show any significant relationships (Pidgeon & McGillivray, 2015).

In a study by Block and Kremen (1996), ego resilience correlated with social poise, assertiveness, the absence of self-concern, rumination, and fearfulness. The ego-resilient people displayed gregariousness, cheerfulness, playfulness, a sense of meaningful life, emotionality, and the ability to adapt under stress. They are comfortable with themselves and accept others as they are. They recover quickly from stressful experiences and are generous and accepting of themselves and others. Individuals with low ego-resilience were not sure of themselves, questioned their self-adequacy, felt chronically vulnerable and had difficulty in collaborating and trusting others, were extra-punitive and hostile to others, irritable, and had fluctuating moods (Block & Kremen, 1996).

Stress and Student Life

The academic experiences of students related to success, goals, academic adaptation, etc. are emotional experiences for them. Anxiety and stress can harm the academic performance of the person and may result in mental health issues. University students everywhere are in a socio-demographic age span where stress disorders are very common, leading to a negative impact on health, physical and physiological health, and social life (Riberio et al., 2017).

Students with a high level of ego-resilience have projected a lower level of psychological stress, indicating an inverse relationship between the two. Resilience can be an important factor in reducing psychological and academic stress among university students (Pidgeon & McGillivray, 2015). Some of the common types of stressors can be categorized as physical, social, emotional, social, behavioural, and examination. Many of these factors are short-term influences. Long-term stress can lead to fatigue, depression, irritability, loss of appetite, low morale, and illness.

Present study objectives

- To examine the relationship between Grit, Ego Resilience, and Stress among participating students from various universities in India.
- To examine if specific stressors are everyday among those scoring low on the grit scale.
- To examine the profile of students concerning specific stress components.

Methods and Materials

Operational definitions and tools

"Girt" will be defined as a "self-discipline wedded to a dedicated pursuit of long-term goals" as given by Angela Duckworth (2007). Participants completed the eight-item Grit Short Scale given by Angela Duckworth. The eight-item Grit Scale (Grit-S) included two subscales measuring 'persistence of effort' and 'consistency of effort'. The 'consistency of effort' sub-scale grit represents a self-reported tendency by the students to stick with goals over a long duration of time. 'Perseverance of effort' represented the self-reported tendency to have both time and energy required to accomplish long-term goals by students. For the study, the term "stress" will be defined as "the total effect of the biological reactions to any adverse stimulus, physical, mental or emotional, internal or external, that tends to disturb a person's normal state of well-being may be termed as stress" as given by M. Balamurugan, & D. Kumaran, (University of Madras). The Student's Stress Scale (SSRS) by Balamurugan and Kumaran is a seven-pointer Likert scale with 35 items. The items are divided into five categories of stress namely: physiological stress (11 items), social stress (7 items), emotional stress (7 items), behavioural stress (4 items) and examination stress (6 items). According to Blocks (2002) "Ego Resiliency" is the "ability to adapt one's level of control temporarily up or down as circumstances dictate." The study used the latest version of the Ego-Resiliency Scale (ER89) by Block and Kremen. It is a Likert scale with 14 items, each responded on a 4-point scale. Ten participants were interviewed to get a deeper understanding of students' lives in an academic context. The students were chosen by purposive sampling. The interviews were conducted either in person or via telephone as per the convenience of the participants.

Participants and ethics

Purposive and snowball sampling techniques were used to locate the sample. Students were sent the 3 scales via email. To get an in-depth understanding of stressors and stress resolution, 10 students were interviewed. Students had access to a short description message about the study and its purpose, which was to satisfy the eligibility requirements for participating in the research. Those who elected to volunteer for the present study clicked on a link that first took them to a consent form/document and, if approved by them, then they were directed to a page that asked them to fill in personal details, namely age, sex, college/university name and then were finally directed to the actual survey. The 100 participants for this study came from a few large and diverse public and private universities. The students were primarily female (n=100, 84%), and the rest were males (n=100, 16%) (See Figure 1). University students 18-24 years of age participated from various universities, including distance learning & regular colleges, studying any course. The participants were required to understand the English language because the scales are available in the same language.

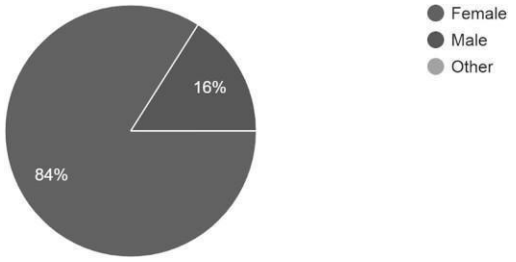

Figure1. Distribution of the participants by sex

The age reported by the participants was 18 (n=100, 4%), 19 (n=100, 6%), 20 (n=100, 12%), 21 (n=100, 22%), 22 (n=100, 29%), 23 (n=100, 19%), 24 (n=100, 8%) (See Figure: 2).

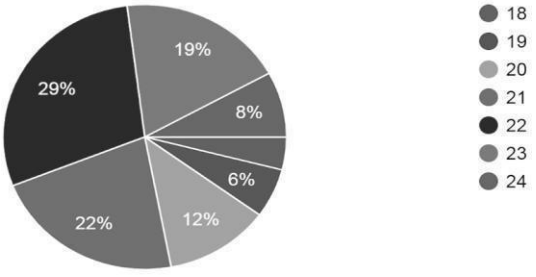

Figure 2. Age distribution of the participants

Sample Size: For the study, the researcher sent scales to the students, and the first 100 scales returned completed for the study were taken into account. More scales were sent out than the study required because the researcher assumed that some of the scales might be incomplete, late in responding, or not responded to by the study participants. Subsets of 10 students were interviewed to get an in-depth understanding of the phenomena.
Measures: Unlike many previous studies with somewhat idiosyncratic samples, in my study, participants comprised a diverse pool of students studying various major universities in India. The primary Instrument was an online self-report survey with a total of 57 items. Other than the personal details section, all items used Likert-style items with a response scale from 1 to 5 and 1 to 7. The participants will be sent the following tools: Contact Questionnaire, Grit Scale, Ego Resilience Scale, Stress Scale, and Unstructured Interview Guide (conducted on 10 students as a telephonic interview or in-person at the convenience of the students)
Analytical method: Pearson correlation and multiple regression were conducted using SPSS version 64 to analyze the data generated in this study. The confidence level of 95% was used to determine statistical significance to understand the relationships among grit, stress, and ego-resilience. Each participant's grit score, Stress score, age, and ego-resilience score were analyzed. A correlation between the Stress score, grit score, and ego-resilience score of each participant's grit was examined. A Pearson correlation analysis was conducted using grit and course grade, mindset and course grade, and then age and course grade. To determine what combination of factors best predicts students' success in finishing college, the researcher used each score on each scale, and then multiple regression analysis was used to predict the same. Content analysis was done to decode themes in the interviews.

Results
Descriptive and correlations: The means and standard deviations for grit, resilience and stress are presented in the table. The mean for perseverance of effort appeared somewhat higher (M=3.8) when compared to the mean of consistency of interest (M=2.8). Consistent with previous studies, all the means of stress variables fell near the middle of the response scale (see Table 1). The bivariate correlation among grit, resilience and stress measures is also presented in the table. Most noteworthy among these results is the low correlation between the two aspects of grit as well as the distinctive pattern of relations each had with resilience and stress measures. Perseverance of effort is positively correlated to both resilience and physiological stress, compared to consistency of effort, which is positively correlated only to resilience. Both aspects of grit were found to be negatively correlated to emotional stress, social stress, exam stress and behavioural stress (see Table 1)

Multiple regressions: Predicting students' resilience
The relation of perseverance of effort and consistency in interest was examined to students' resilience in a multiple regression. Results from analysis indicated about 4.5% of variance in resilience, R^2 = .05F (2, 97) =2.28, p>.05. Both perseverance of effort and consistency of interest failed to emerge as significant individual predictors of resilience, β= .11, t (99) =1.09, p= .275, 95% CI [-.96, 3.31], β= .18, t (99) =1.81, p>.05, 95% CI [-.16, 3.18] (see Table 2).
Predicting students' grit: The relationship of resilience and five indicators of stress as potential predictors of students' grit in two separate multiple regressions. The model accounted for about 6% of the variance in perseverance if effort, $R^{2=}$ .06, F (6, 93) =.98, p>.05 and about 17% of the variance in consistency of interest, R^2 = .17, F (6, 93) =3.06, p<.01. Emotional stress was a significant individual indicator of consistency of effort, β= -.37, t (99) = -1.99, p=.05 (see Table 4), and none of the factors were found to be a significant indicator of perseverance of effort (see Table 3). Together these findings show that students who experienced more emotional stress had lower consistency of interest (see Table 4). In contrast, none of the stressors emerged as a significant indicator for the perseverance aspect of grit (see Table 3).
Predicting students' stress: The researcher conducted a set of five multiple regressions in which two aspects of grit, resilience and four stressors were used to predict the five categories of stress experienced by students according to students' stress scale. These regressions were completed in two steps; the two grit variables along with resilience were entered together in the first block, followed by the remaining stress variables in the second block. The set of variables entered in the first block as presented in Table 5, indicated a significant amount of variance in physiological stress, R^2= .21, F(3,96)= 8.19,p<.001; emotional stress, R^2= .15, F(3,96)= 5.33,p>.005; social stress, R^2= .16, F(3,96)= 5.99,p=.001; and examination stress, R^2= .11, F(3,96)= 3.69,p<.05. The behavioural stress did not explain a significant amount of variance in first block R^2= .03, F (3, 96) = .99, p=.401.In the first block, both consistency of interest and resilience were found to be significant predictors of physiological stress, β=-.28, t (99) = -3.02, p<.005, 95% CI [-.59, -.12], β=-.31, t (99) = -3.02, p<.005, 95% CI [-.59, -.12], and also for social stress as well, β=-.20, t (99) = -2.13,p>.05, 95% CI [-.62, -.02], β=-.30, t (99) = -3.13,p<.005, 95% CI [-.08, -.02].
Only consistency of interest emerged as a significant predictor for emotional stress, β=-.34, t (99) = -3.45, p=.001, 95% CI [-.76, -.20] and exam stress β=-.24, t (99) = -2.39, p<.05, 95% CI [-.79, -.07]. Consistency of interest, perseverance of effort and resilience were not significant predictors of behavioural stress, β=-.07, t (99) = -.73, p= .467, 95% CI [-.43, .20], β=-.06, t (99) =.64, p= .527, 95% CI [-.53, .27], β=-.13, t (99) = -1.19, p= .002375, 95% CI [-.06, .02]. On adding the stress variables in the second step a significant amount of increase in variance is explained for physiological stress, ΔR^2=.42, p<.001, emotional stress Δ R^2=.60, F (7, 92) = 37.67, p<.001, social stress, ΔR^2= .51, F (7, 92) =26.09, p<.001, examination stress ΔR^2=.55, F (7, 92) = 25.10, p<.001 and behavioural stress ΔR^2= .36, F (7, 92) =8.27, p<.001.
In step two, resilience continues to be a significant indicator of physiological stress β = -.18, t (99) = -2.55, p<.05, 95%CI [-.05, -.01] and social stress β = .16, t (99) = -2.47, p<.05, 95% CI [-.06, -.01], whereas it became a significant positive predictor of emotional stress on adding other stressors, β = .12, t (99) = 2.07, p<.05, 95% CI [.01, .04].

When taking into account other stressors, the pattern of the relationship between the two components of grit changed. Consistency of interest was no longer a significant predictor for physiological stress, β = -.09, t (99) =-1.23, p>.05, 95% CI [-.28, .07]; emotional stress, β = -.11, t (99) = -1.96, p>.05, 95% CI [-.33, .01]; social stress, β = .02, t (99) = .31, p= .759, 95% CI [-.17, .24]; examination stress β = .03, t (99) = .41, p= .683, 95% CI [-.19, .29]

Emotional stress emerged as significant positive predictors of physiological stress β = .29, t (99) = 2.40, p<.05, 95% CI [.05, .47]; social stress β = .41, t (99) = 3.71, p<.001, 95% CI [.21, .69]; examination stress, β = .22, t (99) = 2.09, p<.05, 95% CI [.01, .30].

Examination stress emerged as a significant positive predictor of physiological stress, β = .22, t (99) = 2.09, p<.05, 95% CI [.01, .30]; emotional stress β = .55, t (99) = 5.18, p<.001, 95% CI [.43, .97]. Physiological stress emerged as a significant indicator of examination stress, β = .20, t (99) = 2.09, p<.05, 95% CI [.14, .36]. Social stress was a positive significant predictor of emotional stress, β = .32, t (99) = 3.71, p<.001, 95% CI [.14, .45] as well as behavioural stress, β = .41, t (99) = 3.02, p<.005, 95% CI [.14, .67]. Behavioural stress emerged as a positive predictor of social stress, β = .22, t (99) = 3.2, p<.005, 95% CI [.08, .38] (see Table 5).

Thematic analysis: Ten students were interviewed to better understand external factors like stress. The following section will discuss some of the major themes that emerged during the study.

Course work: Many interviewees pointed out academic work as one of the major causes of stress. Most of the population reported that “there is too much to do in much less time at hand.” Students also reported that too many assignments are given together, and they are often “in a hurry to complete them” and are not able to “enjoy the process.”

Jobs, Interviews and Competition: Most students use the term “so much competition” when referring to scoring marks, especially in employment. Many stated that it would be beneficial if colleges introduced “upskilling courses” to meet the requirements so that they are “job-ready”. Some students reported that they are not sure where they can get jobs and indicated the need to have some special classes where they get to "sharpen their soft skills” and overcome their " fear of public speaking". One of the participants reported having excellent grades but failed to make an impression in the group discussion and interviews because of a "lack of skills in handling such situations”. All this culminated in a “feeling of uncertainty about the future”.

Pressure to perform better from parents, comparison with siblings

Surprisingly, most of the population said their parents did not force or pressure them into their field of education. However, few reported feeling pressure to perform well academically because their sibling(s) were studying in a prestigious institute or were employees in an MNC.

Becoming a part of them: Many participants reported having experienced, as one participant put it, a 'mini cultural shock' when they entered college. This ‘culture shock’ manifested itself in many forms, right from the environment of the campus to the fellow students of the college. Some said that they were the best in school, but in college, they realised the 'best of every school' is studying with them. Many interviewees said that at times, even though they can talk comfortably in English, they feel suddenly uncomfortable in situations where a lot is at stake (jobs, impressing others, especially when they are new to a specific setting).

Life beyond classes, safety, homesickness, and hostels

Some students with families in different states reported feeling homesick during specific festival periods. Hostels were described as a “fun place to be” if “you have great friends in there; otherwise, it is not so much fun. Some participants reported that hostels have made them more cooperative and responsible. Some participants reported that hostel life has made them appreciative of the work they got done by others at home. Some participants reported that hostel infrastructure was “outdated, cramped and uncomfortable”. Some also said that despite having adequate hostel facilities on campus, they still avoid using them as they often feel “harassed and discriminated.

Examination

A recurring theme of stress among students was examination. Most participants reported a surge in anxiety, backaches, and irregular menstrual cycles. Some participants said that since they were awake long after their regular bedtime, they faced difficulty sleeping even when they were really tired. Some reported that they ended up eating either too much or too little, and there were fluctuations in weight after that. A few participants also reported that they got acne and stomachaches during exams.

Discussion and Conclusion

The present study aimed to assess the role of grit within the educational setting by determining whether grit is related to ego-resilience and stress. It is argued that more gritty students are more likely to persevere and maintain their pursuit of long-term goals even when things do not go well for them. The findings of this study contribute by providing initial evidence of external factors like stress and resilience that might be affecting grit.

The current study addresses the lacunae in prior research by providing preliminary evidence that grit is an important indicator of student academic performance at the tertiary level. Consistency of interest and perseverance of effort were not strong predictors of resilience, which is commonly associated with the ability to adjust and adapt in a challenging situation and the stress experienced by students in their academic lives. To the researchers' knowledge, this might be the first study to explore the empirical links of indicators of grit to ego resilience.

It was further found that grit could be used to explain five types of stress emblematic of students' academic life in an academic setup. Even when accounting for the presence of other stressors, students who perceived themselves as more generous and curious and who enjoy being in unfamiliar situations also tend to experience less amount of physiological

stress. This finding is consistent with previous studies indicating a negative relationship between resilience and physiological stress experienced by university students (Riberio et al., 2017). Students who reported greater consistency of interest in pursuit of their set long-term goals also tend to experience diminished physiological stress. Students who reported greater consistency of interest in pursuing their long-term goals also tend to experience diminished physiological stress. The interviews conducted by the researcher indicated that students often reported symptoms of physical stress like feeling tired all day, over or under-eating, stomach aches, PCOS, dark circles, hair fall, headaches, backaches, muscle pull, and burning sensation in eyes.

The findings also indicated that students who have consistency in pursuing goals have lower levels of emotional stress. When other stressors, namely, social stress, emotional stress, examination stress, behavioural stress as well and physiological stress are taken into account, then, resilience becomes a significant predictor of emotional stress. The findings have also indicated that those who experience physiological, social and examination stress more frequently are more likely to experience emotional stress regularly as well. Social stress is experienced more frequently by those experiencing behavioural stress. Students who reported experiencing headaches, body aches, and irregular menstrual, were also found to frequently state experiencing a feeling of frustration, unexplained sadness or crying, anger, irritability, anxiety, as well as difficulty in concentrating on the task at hand. The inability to sleep even when feeling tired, either due to workload or stress and anxiety, was also frequently reported by students.

Examinations were reported most frequently as a major source of stress by the students. These findings resonate with studies indicating that unsatisfactory academic performance causes sleep disturbances resulting in emotional and psychological stress, especially among those with low levels of resilience (Pidgeon & McGillivray, 2015). Students who had consistency in their long-term goals were predicted to experience examination stress less frequently. When seen in consideration of the presence of other stressors, this was no longer the case. It was found that increasing the frequency of experiencing examination stress increased physiological and emotional stress. Studies have found that a huge chasm in existing knowledge and requisite knowledge and skills of the students is an important reason for stress for students. Limited, and more than often outdated resources, along with the momentous tasks completing a large amount of content in a short time (Misra & Castillo, 2004). The present study's findings indicated a significant relationship between consistency of interest, resilience and social stress. Even when accounting for other stressors, resilience was an important predictor of social stress experienced by students.

The findings also indicated more frequent experiences of emotional and behavioural stress in those experiencing social stress. While interviewing participants, students who moved to other states for higher education reported feeling additional pressure of 'fitting in' and adapting to the place's culture, food, and norms. Many, especially girls, reported feeling discriminated against because of the discrepancy in curfew timings in hostels for boys and girls. They also reported purposefully choosing PG (paying guest) accommodations to bargain for their independence to move around freely by choice. They also report that if hostel rules are more relaxed, they might prefer living there as it is cheaper and safer.

The hectic college life often leaves students with little opportunities to spend time with family and friends. Students who have moved to other cities and states often reported feeling homesick, especially during festivals. They, at times, feel envious of those who can spend more time at home with their friends and family. At times, it was reported that they could not go back home even during holidays due to extra classes, internships or project work, leaving them feeling guilty about avoiding their family.

Implications for Practice

Considering the conceptual understanding of grit, resilience, and stress, our findings provide a few implications for educators interested in improving university students' academic performance. Even though the consistency of interest was a strong positive predictor of the frequency of stress experienced by students, it may not be a reasonable target for instructional interventions. Conceptual understandings portray grit more broadly in terms of stable trait-like qualities that reflect individuals' development over extended periods (Duckworth et al., 2007). As with other immutable dispositions, it may be impractical for educators to focus on making students "grittier" within a particular course.

In contrast to grit, resilience and stress are viewed as much more malleable and responsive to interventions. There is ample evidence that grit and resilience, adaptive beliefs improve the stress status of students. Specific techniques to achieve these goals can include coursework intended for students experiencing stress very regularly to the extent of interfering with their day-to-day activities and pushing them toward mental health issues. In light of this existing work, efforts to promote and address issues faced by college students may be more productive if they focus on reducing stress frequency and levels of different stressors and providing resilience training rather than directly focusing on increasing students' grit. Of course, more research needs to be performed in this area before starting intervention practices at many levels to see the outcomes.

One of the drawbacks of the conceptual models of grit is that the model provides little insight into which long-term goals students will prioritize and will work consistently whole-heartedly to attain the set goal. Building resilience and using positive psychology to promote coping strategies among students is of paramount importance if academic success and achievement are important goals a student sets. It is important to understand that even students with high levels of grit are likely to give more attention to particular goals that differ from their long-term goals according to the moment's needs. The grit models also fail to explain the conversion of general long-term goals, majoring in a subject, to specific accomplishments like graduating from a particular university with a degree of choice. It will, therefore, be important to refine the model of grit further to have a more holistic understanding of its impact on individuals' choices and the effort they put in and to continue the pursuit of their goals.

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