

Grit, Perceived Stress and Hope among Research Scholars

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Abstract: The current study investigates the interrelationships between grit, perceived stress and hope among research scholars of Aligarh Muslim University, Aligarh (India). The sample comprised of 131 research scholars enrolled in Ph.D. (Male = 48, Female =83) of two faculties (Arts and Science). The Grit Scale (Duckworth, 2007), Perceived Stress Scale (Cohen, 1994) and The Trait Hope Scale (Snyder et al., 1991) were used for measuring the level of grit, perceived stress and hope in the sample. The scores were compared across gender and faculty. T test, correlation and regression analysis were utilized for data analysis.

It was found that all the three variables were highly correlated with each other. Male and female sample did not differ significantly in their grit and perceived stress scores. However, male and female differed significantly in their hope scores. No significant difference was found across the research scholars belonging to science and arts faculty. Both grit and hope predicted stress in males while only hope emerged as a significant predictor of stress in the female sample.

IndexTerms - Grit, Perceived Stress, Hope.

1. INTRODUCTION

The Indian research scenario is a challenging one, wherein securing entry and producing a worth research output, both are a difficult affair. There is a lack of rigorous research effort at the college and the university level. The EAC- PM (2019) reports the public expenditure on research and development to be around 0.6% - 0.7% for the previous two decades, which is quite low as compared to other countries (USA- 2.8%, China – 2.1% and Korea- 4.2%).

As such, the research scholars (prospective researchers enrolled in Ph.D. course) ought to possess high levels of grit and hope, so that they do not fall an easy prey to stress. Reaching the research stage requires a consistent interest and aptitude towards academics, as the period required for reaching this stage is quite long. Also, an individual pursuing a number of courses and then enrolling in research is likely to hold some considerable level of hope regarding his progress in the academic field.

Stress is a major problem for students in general and research scholars in specific. It can lead to anxiety, depression and other serious health issues. The students who live a rather carefree life at master's degree often get struck by high levels of stress after entering the Ph.D. course. This can have serious repercussions as this may hamper researchers from utilizing their fullest potential. Workload, ambiguity about timeline, lack of proper guidance, high competition for publication in quality journals and the ever increasing gap between jobs and job seekers can be few of the reasons for stress. Thus, the interrelationships between the three variables become worth studying.

The present study aims at studying grit, perceived stress and hope levels of future researchers as well as how perceived stress is affected by grit and hope levels of the future researchers. Grit is the trait to pursue long term goals with continued interest and long term effort. (Duckworth et al., 2007). Snyder (2002) defines hope as the, "perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways." Philips (2013) describes perceived stress as an estimate of the individual about how much he/she is under stress at a given point of time.

1.1. Objectives

The study aims to achieve the following objectives:

- To determine the level of perceived stress in the sample.
- To compare the levels of grit, perceived stress and hope across gender and faculty.
- To study the interrelationship between grit, perceived stress and hope among research scholars.
- To determine if the level of stress is affected by grit and hope.

2. METHODOLOGY

2.1. Participants

The present study was conducted at Aligarh Muslim University (2020). The participants consisted of randomly selected research scholars of two faculties, namely, Science and Arts. A total of 100 female research scholars were approached to fill in the questionnaire, of which 83 filled it completely. While 80 male research scholars were approached to fill in the questionnaire, of which only 48 filled it completely. Thus, of the total 131participants, 83 (63.35%) were females and 48 (36.64%) were males.

2.2. Measures

2.2.1. Grit

The Grit Scale (Duckworth, 2009) was used to measure the grit levels of research scholars. It consists of twelve statements scored at a five point Likert scale. It is composed of two dimensions, namely Perseverance of Efforts (e.g. 'I am diligent') and Consistency of Interests (e.g. 'New ideas and Projects sometimes distract me from previous ones'). The scores obtained can thus range from 12 to 60. Higher the total score of twelve items, the higher the grit level of the respondent. The reliability and validity of the Grit Scale has been verified by the authors on a variety of samples.

2.2.2. Perceived Stress

Perceived Stress Scale (PSS) (Cohen, 1994) was utilized to measure the research scholars' own perception of stress. The scale possesses high reliability and validity (temporal validity of a month or two) for adult population. (Cohen, 1994). The Scale consists of ten items scored over a five point likert scale (Never to Very Often). The scores can range from 0 to 40.

2.2.3. Hope

The researcher employed the Trait Hope Scale (THS) (Snyder et al., 1991) in order to measure the level of hope for the respondents. The scale consists of twelve items, out of which four items are fillers. The scale is comprised of two dimensions, pathways and agency. A lower score on the THS indicates lower level of hope in the respondent and vice versa. The score can range from 8 to 64. The scale has high internal consistency and reliability for various samples as reported by Snyder et al. (1991) [Cronbach's alpha coefficient ranging from 0.74-0.84 and a reliability coefficient (test-retest) ranging from 0.73-0.85 over a period of three to ten weeks]

3. PROCEDURE

Sets of the data collection measures were distributed among 180 research scholars of the two faculties. The objective of the data collection and the research was explained to the respondents and enough time was given to fill in the scales. The respondents were assured that anonymity and confidentiality shall be maintained and responses shall be used only for research purpose. The researcher distributed 180 questionnaires, of which only 131 were found to be appropriately filled. Thus, a response rate of 72.77% was obtained for the study.

4. ANALYSIS

The data collected were then analyzed as per the objectives of the study.

4.1. Level of Perceived Stress

The level of perceived stress as scored on the PSS ranges from 0-40 where higher the score, higher the perceived stress. A score of 0-13 suggests low level of perceived stress, 14-26 suggests moderate level of perceived stress and 27-40 suggests high level of perceived stress. The frequency distribution showing the three stress levels in the present sample follows (Table 1):

Table 1- Frequency distribution for different stress level

Level of Perceived Stress (N=131)	<i>f</i>	Percentage
<i>Low</i>	16	12.21%
<i>Moderate</i>	91	69.46%
<i>High</i>	24	18.32%

It is evident from the table that only a small percentage of the sample is under low (12.21%) and high (18.32%) level of stress while a large percentage of the research scholars are under moderate stress level (69.46%).

4.2. Gender wise *t* analysis

The scores of grit, perceived stress and hope were compared for male and female samples using *t* test. Table 2 shows the obtained results.

Table 2 – Result for *t* test across Gender

Variables	Males			Females			<i>t</i> value
	Mean (\bar{x})	Standard Deviation (σ)	<i>n</i>	Mean (\bar{x})	Standard Deviation (σ)	<i>n</i>	
Grit	38.9	6.65	48	40.45	5.92	83	1.33
Perceived Stress	21.42	7.11	48	20.70	6.04	83	0.58

Hope	46.79	9.3	48	50.19	7.54	83	2.15*
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*Significant at 0.05 level

The male and female did not differ on grit and perceived stress scores. However, a significant difference was found between the hope scores for the male and female samples, where females (Mean=50.19) showed high levels of hope as compared to males (Mean=46.79).

4.3. Faculty wise t analysis

The scores were also compared for the two groups, Science faculty and Arts faculty using t test. The t values obtained are tabulated below (Table 2):

Table 3 – Result for t test across Faculty

Variable	Science Faculty			Arts and Humanities Faculty			t value
	Mean (\bar{x})	Standard Deviation (σ)	n	Mean (\bar{x})	Standard Deviation (σ)	n	
Grit	38.96	5.73	50	40.44	6.47	81	1.37
Perceived Stress	19.98	6.08	50	21.56	6.6	81	1.40
Hope	47.90	9.3	50	49.59	7.6	81	1.07

It is clear from the above table that the research scholars of the two faculties do not differ significantly in their grit, perceived stress and hope scores.

4.4. Correlational Analysis

The correlation between the three variables was computed using Karl Pearson's coefficient of correlation. The results obtained are tabulated below (Table 4):

Table 4 – Correlation among variables

Variable	Grit	Stress	Hope
Grit	1	-.412**	.398**
Stress		1	-.471**
Hope			1

**Significant at 0.01 level

It is evident from the table that there is a significant negative correlation of perceived stress with Grit and Hope (-.412 and -.471). However, there exists a significant positive correlation between hope and grit (0.398). All the correlations are significant at 0.01 level of significance.

4.5. Regression Analysis

A stepwise regression analysis was undertaken to determine the extent to which grit and hope determined the perceived stress level in the male as well as the female samples. Table 5 shows the obtained results.

Table 5 – Results of Regression Analysis

Sample	Predictors	df	R	R ²	Adjusted R ²	F
Total	Hope, Grit	130	0.531	0.282	0.271	25.13**
Male	Grit, Hope	47	0.602	0.362	0.334	12.766**
Female	Hope	82	0.456	0.208	0.198	21.209**

**Significant at 0.01 level

Table 5 clarifies that Hope and Grit predict significantly the level of stress in the male as well as the total sample. However, for the female sample, only hope emerged as a significant predictor of perceived stress.

5. FINDINGS, DISCUSSION AND IMPLICATIONS

5.1. Findings

The present study aimed at identifying the interrelationship between grit, perceived stress and hope and the extent to which grit and hope predict perceived stress among the research scholars of Aligarh Muslim University. As per the norms suggested by Cohen (1994), it was found that a very large percentage of research scholars is under moderate level of stress (69.46%) and a comparatively less (12.21%) are under low level of stress. Also, the findings indicate that male and female students do not differ significantly in their grit and perceived stress levels. However females possess a higher level of hope as compared to males. No statistically significant differences were observed across the faculties for all three variables. Significant correlation exists between the three variables, the highest between stress and hope (-.471) and then between grit and stress (-.412). A positive correlation was also found between hope and grit (0.398). The predictive capacity of grit and perceived stress for hope as the criterion variable differed for male and female samples. Hope emerged as the only significant predictor of perceived stress in female sample ($F= 21.209$) while both grit and hope predicted perceived stress in the male sample ($F=12.76$).

5.2. Discussion and Implications

Brough (2015) reported perceived stress to be negatively correlated with daily experience of pleasure, productivity and restoration. Feldman and Kubota (2015) reported academic specific hope to predict grade point average in college students. Similarly, Collins et al., (2009) noted students with lowest academic scores on a research methodology course to possess lowest level of hope in the group under study. Jahanara (2017) reported positive correlation between hope and psychological well-being of university students which is similar to the findings of the present study where higher hopes was found related to lower perceived stress.

Alexander and Onwuegbuzie (2007) noted hope to significantly predict academic procrastination in research course students. This could mean if research students maintained high levels of hope, they are less likely to procrastinate in their academic work, which would in turn may lead to lesser workload and lower stress levels. Here, the research guide has an important role to play. With his/her cooperation and guidance he/she can help a research scholar in maintaining a positive outlook towards research. The researcher is more likely to produce a better level of research output if he/she shares a good relationship with his/her guide. In the same way, a constrained relationship with supervisor can harm the output. A cooperative and understanding research guide can thus, help in lowering levels of stress and possessing good levels of hope.

A large percentage (87.79%) of the research scholars experience moderate and high level of stress which can be a possible threat to their psychological well-being and may affect their respective research output. Grit has been reported to be positively associated with higher self-control and mental wellbeing, resilience and growth mindset (Kannangara et al., 2018). In the current study, grit was found to predict perceived stress only for the male sample and not for the female sample. Perceived Stress levels may not be as much affected by Grit as they are affected by Hope. Christopoulou et al., (2018) in a Meta analytical study revealed weak to moderate correlation of grit with educational outcomes.

Snyder (2002) suggested individuals possessing high level of hope to conveniently produce path in the direction of the specific goal and also shift to alternate paths if the existing plan does not work as expected. Thus, research scholars with higher hopes are more likely to possess a more dynamic approach towards their research objective and less likely to be negatively affected by daily hassles and hurdles of research work.

Efficient and timely guidance can thus, play an important role in combating the risk of perceived stress and maintaining hope in research scholars. Intervention for developing higher levels of hope are thus a welcome step for improving the mental health of the research scholars and the respective research output in the future.

5.3. Limitations and Suggestions for Further Research

The study had several limitations. First, the study was conducted on research scholars of Aligarh Muslim University only. Research Scholars of other Universities were not included in the study. Second, Research Scholars of only two faculties, namely Arts and Science Faculty were included in the study. Research environment and procedures differ from one faculty to another as such the findings cannot be generalized to research scholars of other faculties.

Future Researches may focus on descriptive studies looking into the existing levels of grit, hope and perceived stress of research scholars, factors responsible for causing stress in the research scholars, comparative studies enquiring the grit, hope and stress levels of researchers of other faculties, and comparative studies enquiring the grit, hope and stress levels of research scholars across central and state universities.

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