Relationship Between Grit, Self-Control, General Strategies for Learning and Academic Achievement in Emerging Adults

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Declaration

Date: 15/4/21

This is to certify that I, **Sanchita Sobti** have carried out the research, embodied in the present Project for the full period prescribed by St. Francis College for Women, Department of Psychology.

I declare to the best of my knowledge that this Project is an original work and had not been submitted previously to this or any other Institution.

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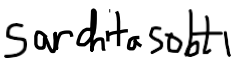
Finally, I would like to thank each participant who joined this research and gave their valuable time.



(Sanchita Sobti)

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Abstract

Grit is defined by passion and perseverance for long-term goals. (Duckworth, 2007) Self-Control is defined as the ability to delay immediate gratification of a smaller reward for a larger reward later in time (Kirby, et., al, 1995) A learning strategy is an individual's approach to complete a task. More specifically, a learning strategy is an individual's way of organizing and using a particular set of skills in order to learn content or accomplish other tasks more effectively and efficiently in school as well as in non-academic settings (Schumaker & Deshler, 1992). Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university (Crede, et., al, 2015). The sample comprises students pursuing their undergraduate and post-graduate education. The present study explores the relationship among Grit, Self-Control, Learning Strategies and Academic Achievement in students pursuing under-graduation and post-graduation who are generally in a quandary while planning and preparing for their future goals. Students belonging to the age range of 19-24 are usually in a position of decision making regarding their careers which requires discipline of thought to maintain a considerable grade point to succeed in their chosen career paths. Thereby grit, self-control, and learning strategies contribute to academic achievement ensuring success in the chosen career paths.

Keywords: Grit, Self-Control, Learning strategies, Academic achievement.

Introduction

Duckworth (2007) defines Grit as "passion and perseverance for long-term goals." It measures grit based on the two components 'passion' which refers to the consistency of interests and 'perseverance' which is the perseverance of efforts. Grit isn't merely working hard, or grinding out results, but something richer and more nuanced. It is a combination of perseverance, patience, and perspective. It encompasses the capacity to deal with situations not necessarily of one's choosing, and find ways to not just create success, but also meaning. As further defined by Duckworth and colleagues, "Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress." Grit is often associated with academic achievement as studied by Howard et., al, (2019) where grit was found to have a significant predictive relationship with academic success and another study by Lee (2017) examined the relationships among grit, aacademic performance, perceived academic failure, and stress levels. Grit was the most robust of the motivators in the study by Pasha-Zaidi (2018) exploring the relationships between grit, motivational beliefs and self-regulation. Grit was also found to have a significant positive correlation with life satisfaction according to the study conducted by Singh and Jha (2008) and may also be studied in relation to health outcomes and behaviours as researched by Peña et., al, (2019) where grit correlated with greater treatment adherence and better glycaemic and cholesterol control. While another study by Guerrero et., al, (2016) higher levels of grit showed a negative correlation with substance use in delinquent behaviours.

The most recent academics studies demonstrated that self-control and grit have become two of the most important variables that explain success in different aspects of people’s daily life as studied by Duckworth and Gross (2014). Grit was also observed to have strong associations with self-control according to the study conducted by Oriol et., al, (2017). The

tendency to choose a larger, more delayed reinforcer over a smaller, less delayed one has frequently been termed 'Self-Control.' Monikers for self-control vary widely and include delay of gratification, effortful control, willpower, executive control, time preference, self-discipline, self-regulation, and ego strength. Moffitt et., al, (2011) uses the term self-control synonymously with conscientiousness, a large class of personality traits that includes responsibility, industriousness, and orderliness. The common thread running through diverse conceptualizations of self-control is the idea of effortful regulation of the self by the self. Self-controlled individuals are more adept than their impulsive counterparts at regulating their behavioural, emotional, and attentional impulses to achieve long-term goals. Gottfredson and Hirschi's General Theory of Crime (1990) contends that low self-control interacts with the opportunity to produce criminal and analogous behaviours. A consequential development in victimization theory and research by Pratt et., al, (2014) indicates that selfcontrol is a modest yet consistent predictor of victimization. Mehroof and Griffiths (2010) found self-control to be negatively correlated with online games addiction. Correlation between self-control and the dark triad, both psychopathy and Machiavellianism were correlated with low self-control according to the study by Jonason and Tost (2010). Robust experimental evidence from the study conducted by Denson et., al, (2012) demonstrates that self-control failures frequently predict aggression and, conversely, that bolstering self-control decreases aggression. Self-control was found to be a serious predictor of academic performance according to the study by Honken et., al, (2016). Self-control highly correlated with a higher-grade point average, better adjustment, less binge eating and alcohol abuse, better relationships and interpersonal skills, secure attachment, and more optimal emotional responses as studied by Tangney et,. al, (2004). Self-control and learning strategies are essential for achieving academic success. By controlling oneself and optimizing learning strategies, the student would have more benefit in attaining academic demand (Islam et,. al, 2018). Gagne 2018, defined learning as "A change

in human disposition or capability that persists over a period of time and is not simply ascribable to processes of growth." Mayer (2018), defines Learning as "The relatively permanent change in a person's knowledge or behaviour due to experience. This definition has three components: 1) the duration of the change is long-term rather than short-term; 2) the locus of the change is the content and structure of knowledge in memory or the behaviour of the learner; 3) the cause of the change is the learner's experience in the environment rather than fatigue, motivation, drugs, physical condition or physiologic intervention."

A learning strategy is an individual's approach to complete a task. More specifically, a learning strategy is an individual's way of organizing and using a particular set of skills in order to learn content or accomplish other tasks more effectively and efficiently in school as well as in non-academic settings. (Schumaker & Deshler, 1992). Active learning strategies and academic self-efficacy relate to both attentional control and attitudes towards plagiarism (Rocher, 2018). Learning strategies also has strong relations with self-efficacy, goal orientations and examination grades (Diseth, 2009). Students with low attention levels and high general emotional levels use more learning strategies (Ingles, 2017). Effective learning strategies showed a significant correlation with intelligence level (Tomar & Jindal, 2014). Learning strategies like memory, metacognitive and social strategies were frequently used by students learning to speak a new language (Wael et., al, 2018). A significant relationship between learning strategies and motivational beliefs was found in a study by Gbollie and Keamu (2017). It was also found that self-esteem and learning strategies predicted the consistency of grit (Weisskirch, 2018). Using learning strategies by students improve their academic performance (Muelas & Navarro, 2015). Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school,

college, and university (Crede et., al, 2015). General cognitive ability, as well as the learning strategies, attention, and learning environment, were positively correlated with academic achievement (Ruffling et., al, 2015). Academic achievement was found to be multidetermined, with influence from different cognitive and socio-emotional variables (Costa & Fleith, 2019). It was also observed that self-regulating learning strategies and motivational strategies can predict the academic achievement of students (Nabizadeh et., al, 2019). A study by Lam and Zhou (2019) noted that grit level was positively associated with academic achievement. Academic motivation and grit were found to be among the chief factors of academic achievement as confirmed by two independent studies by Kumari and Qasim (2015); Reraki (2015). It was established that self-discipline predicted academic performance much better than IQ (Duckworth et., al, 2005). It was also concluded in a study by Duckworth et., al, (2019) that self-control predicts academic achievement at every level of schooling.

Research Questions:

1. Is there a relationship between:
    a) Grit and self-control in young men and women
    b) Self-control and general strategies for learning in young men and women.
    c) General strategies for learning and academic achievement in young men and women.
    d) Academic achievement and grit in young men and women.
    e) Grit and general strategies for learning in young men and women.
    f) Self-control and academic achievement in young men and women.
2. Is there a difference in the levels of:
    a) Grit between young men and women pursuing under graduation and postgraduation.

b) Self-control between young men and women pursuing graduation and postgraduation.

c) General strategies for learning between young men and women pursuing graduation and postgraduation

d) Academic achievement between young men and women pursuing graduation and postgraduation.

Objectives:

1. To determine if there is a relationship between:
   a) Grit and self-control in young men and women,
   b) Self-control and general strategies for learning in young men and women.
   c) General strategies for learning and academic achievement in young men and women.
   d) Academic achievement and grit in young men and women.
   e) Grit and general strategies for learning in young men and women.
   f) Self-control and academic achievement in young men and women.
2. To determine if there is a difference in the levels of:
   a) Grit between young men and women pursuing under graduation and postgraduation
   b) Self-control between young men and women pursuing under graduation and postgraduation.
   c) General strategies for learning between young men and women pursuing under graduation and postgraduation.
   d) Academic achievement between young men and women pursuing under graduation and postgraduation.

Hypotheses:

1. There is a relationship between the following:

   H1a: Grit and self-control between young men and women pursuing under graduation and postgraduation.

   H1b: Self-control and general strategies for learning between young men and women pursuing under graduation and postgraduation**.**

   H1c: General strategies for learning and academic achievement between young men and women pursuing under graduation and postgraduation.

   H1d: Academic achievement and grit between young men and women pursuing under graduation and postgraduation**.**

   H1e: Grit and general strategies for learning between young men and women pursuing under graduation and postgraduation**.**

   H1f: Self-control and academic achievement between young men and women pursuing under graduation and postgraduation

2. There will be a difference in the levels of:

   H2a: Grit between young men and women pursuing under graduation and postgraduation.

   H2b: Self-control between young men and women pursuing under graduation and postgraduation.

   H2c: General strategies for learning between young men and women pursuing under graduation and postgraduation.

H2d: Academic achievement between young men and women pursuing under graduation and postgraduation**.**

Method

Research design

The present study is performed using a quantitative methodology in which the relationship between grit, self-control, general strategies of learning and academic achievement is determined. This study adopts a correlational design to determine if there is any correlation between these variables. A between-group design is used to understand the difference between the 4 variables and the gender differences.

Sample

The sample consisted of 283 participants, with 143 women and 137 men. The sample group consisted of students falling between the ages of 17-40 years.

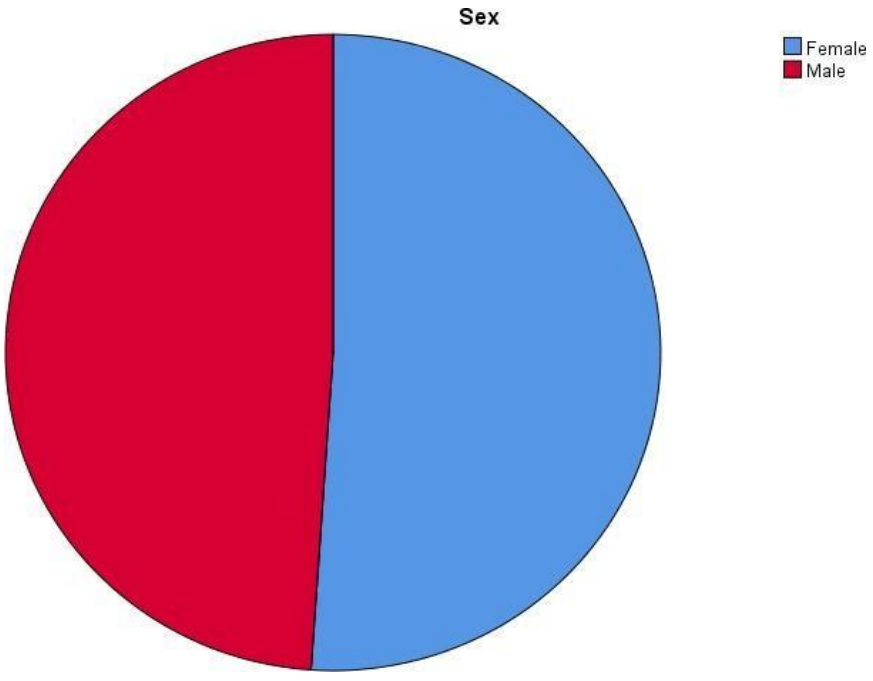

Figure 1.0 showing the percentage of sample distribution based on gender

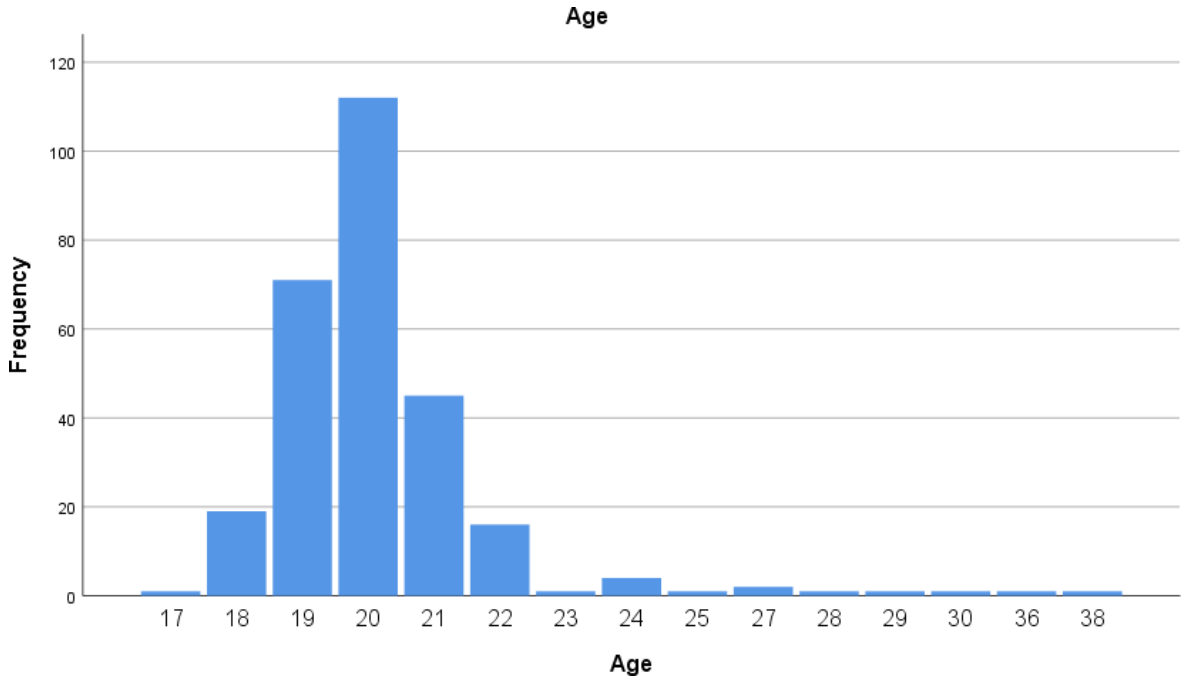

Figure 2.0 showing the frequency of sample distribution based on age

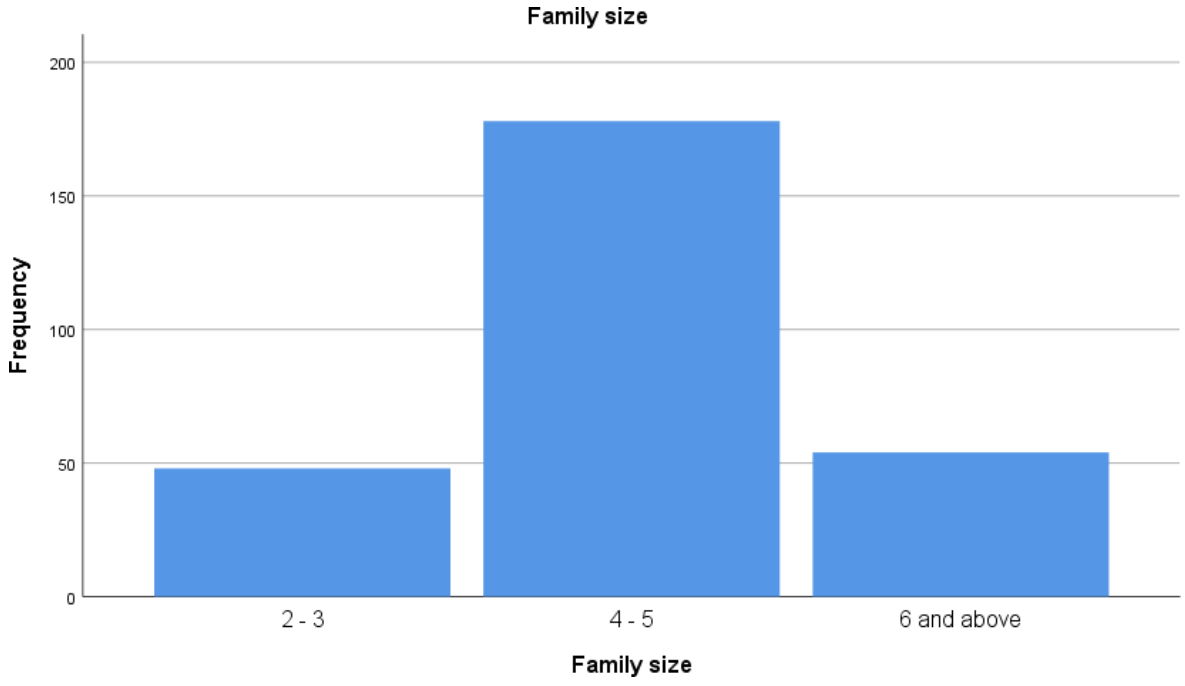

Figure 3.0 showing the frequency of sample distribution based on family size

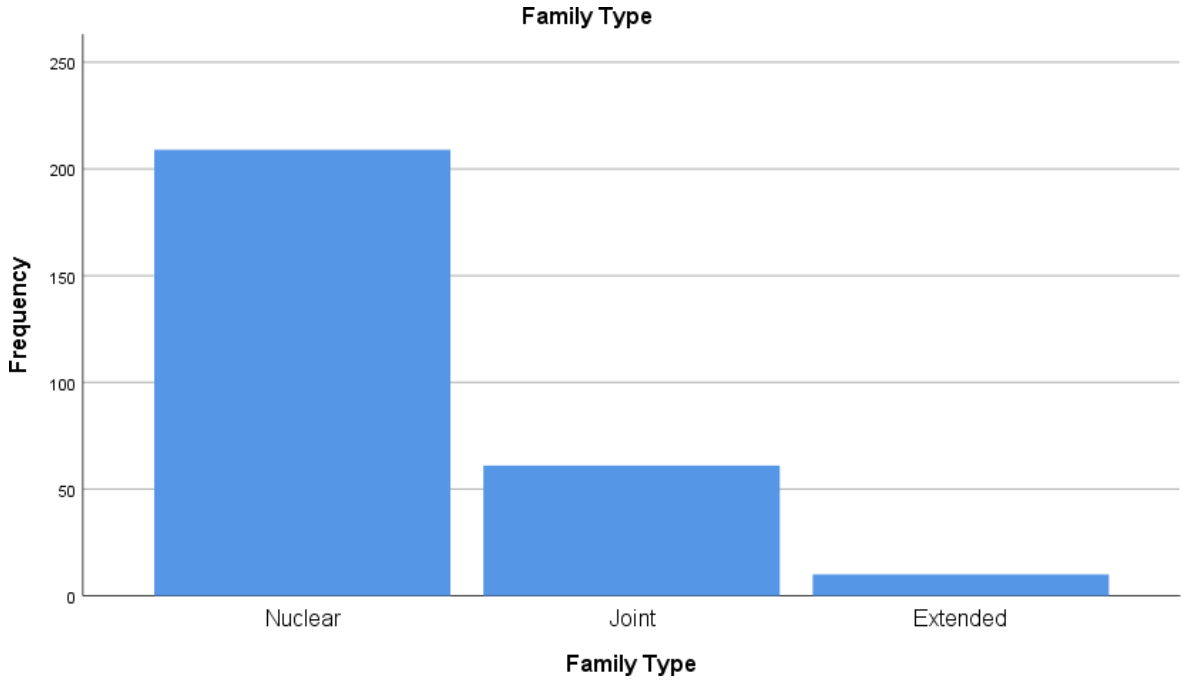

Figure 4.0 showing the frequency of the sample distribution based on family type

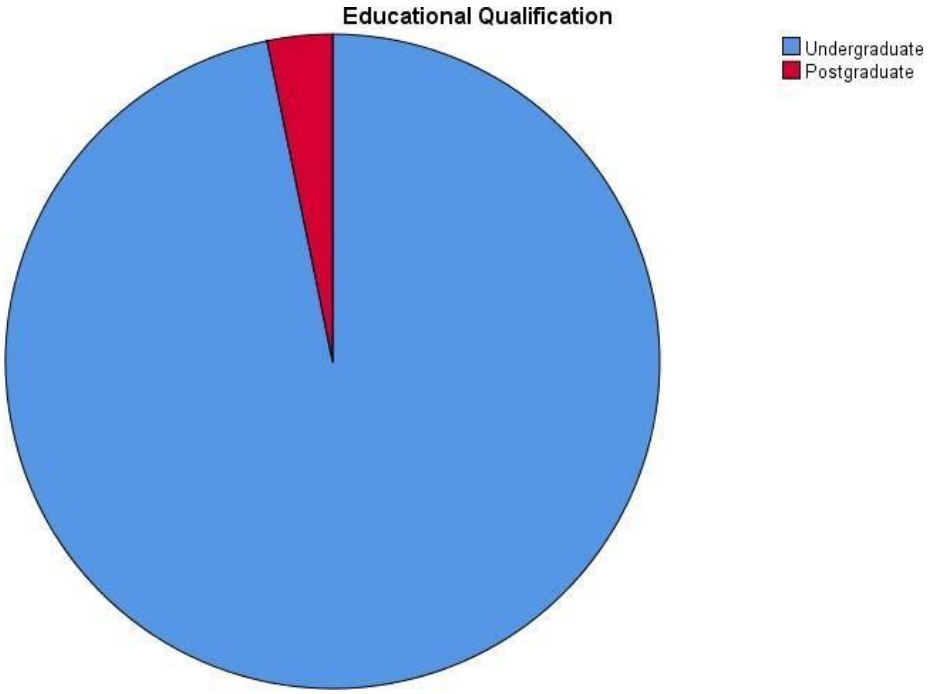

Figure 5.0 showing the percentage of sample distribution based on educational qualification.

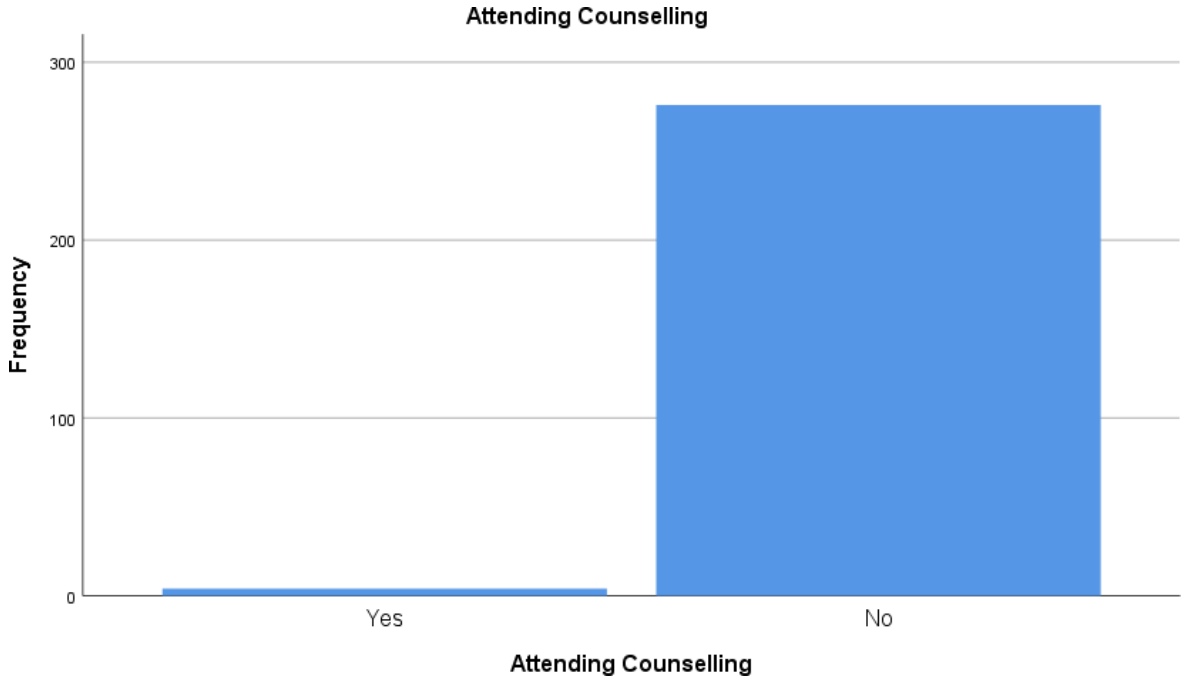

Figure 6.0 showing the frequency of sample distribution based on mental health status

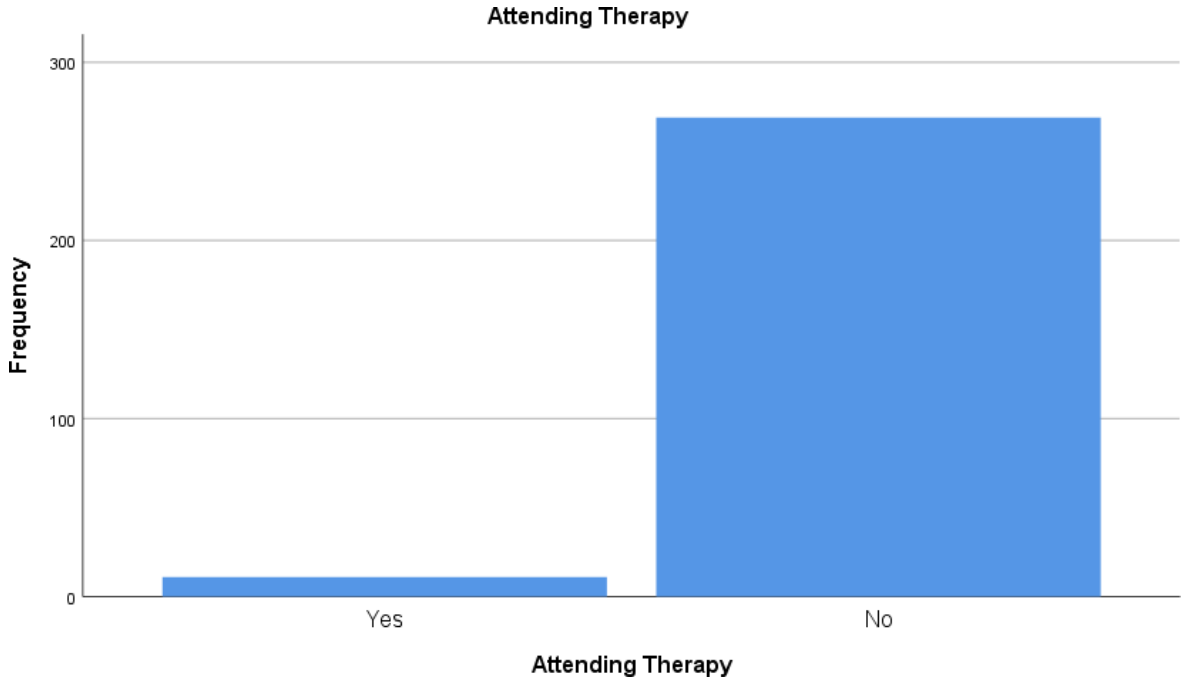

Figure 7.0 showing the frequency of sample distribution based on mental health status

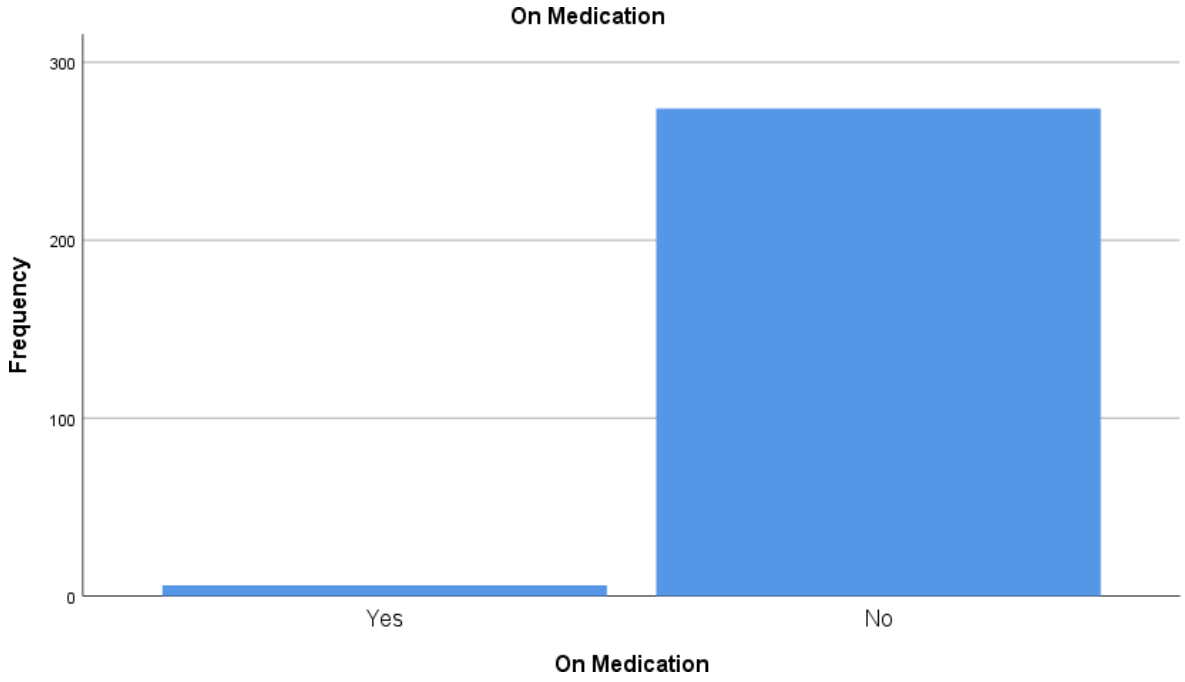

Figure 8.0 showing the frequency of sample distribution based on mental health status

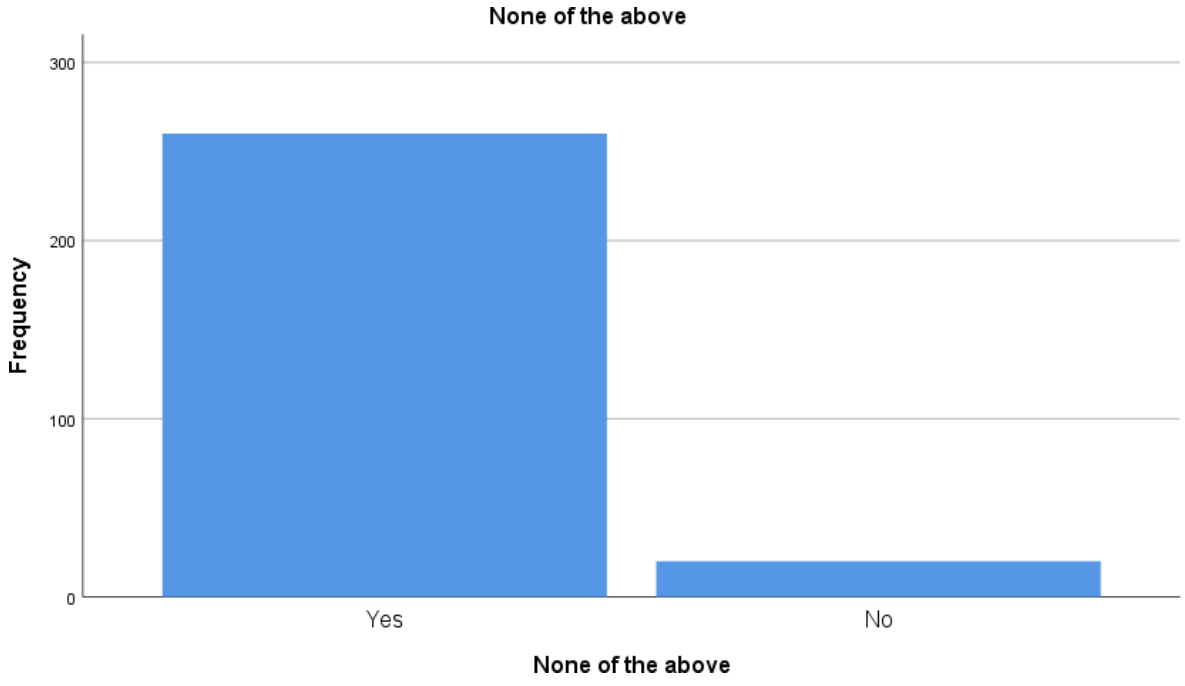

Figure 9.0 showing the frequency of sample distribution based on mental health status.

Inclusion criteria

1. Students between the ages 19-24.

2. Adults who are either pursuing their under graduation or postgraduation.

Exclusion criteria

1. Individuals who do not know how to read and write English.

2. Individuals who do not have proper access to the internet.

3. Individuals who are technologically challenged.

Instruments

1. Informed consent form

Participants were given an informed consent form that briefed them about the study. It was made sure to take each participant's consent before they were given the questionnaires to fill the form including the researcher's contact details in case the participant had any questions after he or she had submitted the questionnaires.

2. Demographic data sheet (information schedule)

Participants were asked to respond to items inquiring about their age, gender, nationality, family type, family size, physical health status, academic score of the previously passed exam, educational qualification, mental health status and if they faced any unfortunate circumstances.

The data analysis in this study was collected using three questionnaires. The researcher chose these questionnaires because they were designed specifically to accomplish the objectives of this study.

1. The Grit scale (short) was developed and published by Dr. Angela Duckworth and Patrick. D. Quinn in 2009. It measures trait level passion and perseverance

for long-term goals which indicate the extent to which individuals are able to maintain focus and interest, and persevere in obtaining long-term goals. The Short Grit Scale (Grit–S) retains the 2-factor structure of the original Grit Scale (Duckworth, Peterson, Matthews, & Kelly, 2007) with 4 fewer items and improved psychometric properties. The scale has 2 subscales, 'perseverance of efforts' which measures an individual's perseverance and 'Consistency of interests' which measures the passion dimension of Grit. The scoring for the perseverance of efforts sub-scale is done on a Likert scale of 5 (Very much like me) to 1 (not like me at all). The scoring for the consistency of efforts subscale is done in reverse, on a Likert scale of 1 (Very much like me) to 5 (not like me at all). The resulting points are all added up and divided by 8. The maximum score on this scale is 5 which indicates that the individual is extremely gritty, and the lowest score on this scale is 1 which indicates that the individual is not at all gritty. Internal consistency was estimated separately across the four samples (mean Cronbach's alpha=0.78, min=0.73, max=0.83) (Duckworth & Quinn, 2009). The validity evidence was based on the development of Items based on existing theoretical and empirical literature on grit and persistence and informed by expert review (Duckworth et al, 2007). Exploratory and Confirmatory Factor Analysis techniques were used to substantiate a second-order factor model with two specific factors (consistency of interests and perseverance of effort) and a general grit factor (Duckworth et al., 2007; Duckworth & Quinn, 2009).

2. The self-control scale was developed by Tangney, J.P., Baumeister, R. F., & Boone, A. L in 2004. It has two versions- the brief self-control scale (BSCS)

and the full self-control scale (SCS). The brief self-control scale has been used in this study. The Brief Self-Control Scale (BSCS) is a measure of individual differences in self-control. This scale includes no sub-scales. The scale's scoring is done on a five-point Likert type scale of 1 (Very much like me) to 5 (not like me at all) and the measure is self-scored by adding all the points achieved and dividing them by 10. The maximum score on this scale is 5 (extremely self-controlled) and the lowest score on this scale is 1 (not at all self- controlled). The Internal consistency estimates (alpha) were 0.83 and 0.85 in the two study samples. Test-retest reliability (three-week interval) estimate was 0.87 (Tangney et al., 2004). The validity evidence is based on a comprehensive literature review (Tangney et al 2004).

3. The 44 item MSLQ scale was developed by Q. Pintrich and DeGroot in 1990. The authors divided the questionnaire into two sections: motivational beliefs and self-regulated learning strategies (Pintrich & DeGroot, 1990; Pintrich, Roeser, & DeGroot, 1994). The first section consisted of 22 items and comprised three subscales: self-efficacy (nine items: 2, 6, 8, 9, 11, 13, 16, 18, and 19; $\alpha = .89$), intrinsic value (nine items: 1, 4, 5, 7, 10, 14, 15, 17, and 21; $\alpha = .87$), and test anxiety (four items: 3, 12, 20, and 22; $\alpha = .75$). Self-regulated learning strategies consisted of 22 items and comprised two subscales assessing cognitive strategy use (12 items: 23, 24, 28, 29, 30, 31, 34, 35, 39, 41, 42, and 44; $\alpha = .83$) and self-regulation (10 items: 25, 26, 27, 32, 33, 36, 37, 38, 40, and 43; $\alpha = .74$). The scoring is done on a 7 -point Likert scale ranging from 1 (not at all true for me) to 7 (very true for me). Negatively worded item ratings must be reversed before an individual score is computed (Items 26, 27, 37, and 38).

The Internal consistency estimates (Cronbach's alpha) are reported for the five subscales and range from 0.74 to 0.87. Items were adapted from previously validated questionnaires (Eccles, 1983; Harter, 1981; Weinstein, Schulte & Palmer, 1987) pertaining to the validity evidence. Factor analysis was also used to substantiate the five subscales (Pintrich & De Groot, 1990).

Procedure

After selecting the suitable measures, arrangements were made accordingly for data collection. The questionnaire was prepared and organized. The study was initiated after permission was sought. The participants were given a brief explanation of the purpose of this study and informed consent was taken from the participants after which the questionnaire was administered. On average, the time taken to complete the questionnaire was 15 minutes. After its completion, the participant's responses were collected for data evaluation.

Statistics used

The researcher used descriptive statistics to describe the data and had used correlation and t-test to make inferences.

Results

Table 1.0 showing the correlation between Self-Control, Academic Achievement and dimensions of Grit and dimensions of Learning Strategies.

Variables	Self-Control	Academic Achievement
Consistency of Interest	**0.298****	**0.118***
Perseverance of Effort	**0.144***	**0.134***
Grit	**0.264****	**0.140***
Self-Efficacy	0.091	**0.235****
Intrinsic Value	0.041	**0.183****
Test Anxiety	-0.032	-0.079
Cognitive Strategy	-0.021	**0.132***
Self-Regulation	**0.126***	0.111
Total MSLQ	0.050	**0.182****

Note: *Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed).

The results of Table 1.0 show that there is positive correlation between Consistency of Interest and Self-Control ($r=0.298$, $p<0.01$), between Consistency of Interest and Academic Achievement ($r=0.118$, $p<0.05$), between Perseverance of Effort and Self-Control ($r=0.144$, $p<0.05$), between Perseverance of Effort and Academic Achievement ($r=0.134$, $p<0.05$), between Grit and Self-Control ($r=0.264$, $p<0.01$), between Grit and Academic Achievement ($r=0.140$,$p<0.05$), between Self-Efficacy and Academic Achievement ($r=0.235$,$p<0.01$), between Intrinsic Value and Academic Achievement ($r=0.183$,$p<0.01$), between Cognitive Strategy and Academic Achievement ($r=0.132$,$p<0.05$), between Total MSLQ and Academic Achievement ($r=0.182$,$p<0.01$). These results imply that an increase or decrease in one of the correlated variables lead to an increase or decrease in the variable it is correlated with.

The results of Table 1.0 also show that there is no significant correlation between Self-Efficacy and Self-Control ($r=0.091$), between Intrinsic Value and Self-Control ($r=0.041$), between Test Anxiety and Self-Control ($r=-0.032$), between Test Anxiety and Academic Achievement ($r=-0.079$), between Cognitive strategy and Self-Control ($r=-0.021$),

between Self-Regulation and Academic Achievement (r=0.111), and between Total MSLQ and Self-Control(r=0.050).

Table 2 showing the correlation between dimensions of General Strategies of Learning and Grit.

Variables	Consistency of interest	Perseverance of effort
Intrinsic value	**0.159****	**0.399****
Test anxiety	-0.112	0.000
Cognitive strategy	0.035	**0.309****
Self-regulation	**0.349****	**0.426****
Self-efficacy	**0.123***	**0.435****

Note: *Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

The results of Table 2.0 show that there is a significant positive correlation between Intrinsic Value and Consistency of Interest (r=0.159, p<0.01), between Intrinsic Value and Perseverance of effort (r=0.399, p<0.01), between Cognitive Strategy and Perseverance of Effort (r=0.309, p<0.01), between Self-Regulation and Consistency of Interest (r=0.349, p<0.01), Self-Regulation and Perseverance of Effort (r=0.426, p<0.01), between Self-Efficacy and Consistency of Interest (r=0.123, p<0.05) and between Self-Efficacy and Perseverance of Effort (r=0.435, p<0.01). These results imply that an increase or decrease in one of the correlated variables lead to an increase or decrease in the variable it is correlated with. The results of Table 2.0 also show that there is no significant correlation between Test Anxiety and Consistency of Interest (r=-0.112), between Test Anxiety and Perseverance of Effort (r=0.000), and between Cognitive Strategy and Consistency of Interest (r=0.035) in Males and Females.

Table 3.0 showing Mean, Standard Deviation and T-test ratios of Self-Control, Grit and its two dimensions Consistency of interest and Perseverance of effort, Learning Strategies and its five dimensions Self-Efficacy, Intrinsic Value, Test Anxiety, Cognitive Strategies, Self-Regulation and Academic achievement.

	Female	**Male**	**t-ratio**
Self-control	3.0238 (0.54047)	3.0993 (0.55750)	-1.151
Consistency of interest	11.42 (3.487)	11.40 (3.474)	0.044
Perseverance of effort	14.06 (2.893)	14.23 (2.745)	-0.506
Self-efficacy	44.61 (29.665)	43.84 (11.122)	0.618
Intrinsic value	46.92 (10.035)	43.70 (11.296)	2.520*
Test anxiety	18.02 (4.941)	16.96 (5.182)	1.760
Cognitive strategy	63.92 (12.744)	59.40 (12.951)	2.940**
Self-regulation	34.72 (6.926)	31.58 (6.053)	4.028***
Academic score	20.0586 (31.57312)	20.1036 (79.85548)	0.374

Note: *Correlation is significant at the 0.05 level. (*p<0.05)
Correlation is significant at the 0.01 level. (p<0.01)
Correlation is significant at the 0.001 level. (p<0.001)

The results in Table 3.0 shows that there is a significant difference in the levels of Intrinsic Value, levels of Cognitive Strategy, and levels of Self-Regulation in Males and Females. Females have higher levels of Intrinsic Value, Cognitive Strategy, and Self-regulation. However, the results also show that there is no significant difference between the

levels of Self-Control, Consistency of Interest, levels of Perseverance of Effort, levels of Self-Efficiency, levels of Test Anxiety and Academic Achievement in Male and Female participants of the study.

Discussion

The purpose of this study is to examine the relationship between Grit, Self-Control, General strategies for Learning and Academic Achievement. And to analyse the difference in the levels of the same in a sample of emerging adults pursuing their undergraduate and postgraduate education. In support of the first hypothesis (H1), an attempt was made to establish that there will be a relationship between Grit, Self-Control, General Strategies for Learning and Academic Achievement.

Hypothesis 1a (H1a) states that there will be a relationship between the levels of Grit and Self Control. The results of the study show that there is a positive correlation between the dimensions of Grit and Self-Control, wherein a stronger correlation exists between the consistency of interest dimension than the perseverance of efforts dimension in relation to self-control. It can hence be figured that consistencies in interest make one familiar and well aware of their habits and routines which corroborate to one having a tighter grasp over his/her self-control as the individual is better acquainted with his niche. Similar findings were sought in a study conducted by (Hwang et al,. 2018) on female students at Korean university. It was found that Conscientiousness and self-control were positively correlated with grit factors. Additionally, previous research has indicated that grit is strongly correlated with self-control (Duckworth and Gross, 2014). Similar findings were sought in a study conducted by (Oriol et al., 2017) where Grit and Self-Control were observed to have strong associations in the academic success of primary and secondary school children. Thereby indicating that both

constructs are strongly interrelated. The studies discussed in the literature review also show similar findings in support of the obtained results. Therefore, H1a has been accepted.

Hypothesis 1b (H1b) states that there will be a relationship between self-control and general strategies for learning. The results of the study show that there was no significant correlation between the dimensions of self-control and general strategies for learning except for the dimension of Self-regulation which showed a significant positive correlation with self-control. Similar results were found in a study conducted by (Muraven et al,. 1999) on college students where it was found that participants who performed the self-control exercises showed significant improvement in self-regulatory capacity. Self-regulation and self-control are important indicators for an individual's overall adjustment in various life domains, especially in his/her workplace. To be organized one needs to be self-controlled and self-regulated. Further research (Ramzi et al., 2019) also points out how self-control and self-regulation are important determinants of predicting procrastination. This again reflects on the organizational capacities of self-control and self-regulation. Therefore, Hypothesis 1b has been partially accepted.

Hypothesis 1c (H1c) states that there will be a relationship between General Strategies for Learning and Academic Achievement. The results of the study show that there is a significant correlation between certain dimensions of General Strategies for Learning and Academic Achievement. Self-efficacy, Intrinsic Value and Cognitive strategies were significantly correlated with Academic Achievement. However, the dimensions of test anxiety and Self-Regulation were not significantly correlating with Academic Achievement. Similar findings were reflected in a study conducted by (Pintrich, P. R., & de Groot, E. V, 1990) where it was found that Self-efficacy and intrinsic value were positively related to cognitive engagement and performance. Pintrich and Degroot have also demonstrated that self-efficacy

and intrinsic value are positively related to learning strategy and performance. The findings hence posit that students' internal beliefs about their competencies, their beliefs pertaining to the values of the task as well as their mental manipulations contribute to their performances. Test anxiety and self-regulation dimensions on the other hand do not relate to academic achievement. Similar effects were found in a study conducted by (Rana, 2010) on 414 undergraduate students in Pakistan which concluded that test anxiety is one of the factors which are responsible for students' underachievement and low performance. Therefore, Hypothesis 1c has been partially accepted.

Hypothesis 1d (H1d) states that there is a relationship between Academic Achievement and Grit. The results show that there exists a significant correlation between the dimensions of grit (Consistency of Interest and Perseverance of Efforts) and Academic Achievement. Similar results were obtained in a study where overall grit level and its two facets (consistency of interest and perseverance of effort) were positively associated with academic achievement. (Lam & Zhou, 2019). A similar study conducted by (Mason,2018) among South African university students states that Students who scored high on the Grit Scale also obtained higher academic marks compared to participants who scored low on the same instrument. Grittiness is hence a well-established measure that relates to academic achievement, its use in the arena of positive psychology adds to its wealthiness of being used as a means to strengthen one's performance. Grit has associations with other personal outcomes such as higher life-course accomplishment (Abuhassàn & Bates, 2015) and increased goal attainment (Sheldon et al., 2015) as well. Hence, given the results and the relevant findings, Hypothesis 1d has been accepted.

Hypothesis 1e (H1e) states that there is a relationship between grit and general strategies for learning. The results of the study show that there exists a significant correlation

between the dimensions of general strategies for learning namely- self efficacy, intrinsic value, self-regulation and grit. However, there was no correlation between the dimension cognitive strategy as well as test anxiety under general strategies for learning and grit. However, Grit as whole significantly correlates with general strategies for learning. A similar study by Kim (2019) showed that the learning strategy levels moderated the relationship between academic grit and career development competence. The applicative value of grit in accordance to learning strategies greatly adds to one's career development is grave. Therefore, H1e has been partially accepted.

Hypothesis 1f (H1f) states that there is a relationship between Self-control and academic achievement. The results of the study show that there is no significant correlation between self-control and academic achievement. Findings from similar studies conducted by (M., & Baumeister, R. F., 2000) have suggested that exerting self-control may consume self-control strength, reducing the amount of strength available for subsequent self-control efforts. Coping with stress, regulating negative affect, and resisting temptations require self-control, and after such self-control efforts, subsequent attempts at self-control are more likely to fail. This hence posits self-control as a depletive resource pointing as to why there is no relation between self-control and academic achievement. Thereby, H1f is rejected.

In support of the second hypothesis (H2), an attempt was made to establish that there will be a difference in the levels of Grit, Self-Control, General Strategies for Learning and Academic Achievement between males and females pursuing undergraduate and postgraduate education. Hypothesis 2a states that there will be a difference in levels of grit between males and females pursuing their undergraduate and postgraduate education. However, contrary to many studies the results of the study show that there is no difference in the levels of grit between males and females pursuing undergraduate and postgraduate education. A huge data

of literature exists pointing out the demographic difference between males and females' grit scores. (Jaeger et al., 2010; Christensen & Knezek, 2014). The results of this study did not posit any significant difference between grit scores of males and females. Some findings however corroborate with the obtained results and state that no significant difference can be observed between the grit scores of males and females (Duckworth et al., 2007, Duckworth & Quinn, 2009; Ali and Rahaman, 2012). Thereby, Hypothesis 2a has been rejected.

Hypothesis 2b states that there will be a difference in levels of self-control between males and females pursuing undergraduate and postgraduate education. The results of the study indicate that there is no difference in the levels of self-control between males and females for the same. Although a plethora of studies show contrary evidence where males were observed to have lower levels of self-control than women (Turner et al., 2002; Steketee et al., 2013; Shekarkhar et al., 2011) the obtained results portray that no difference exists. Some studies like that of Burton et al., 1998, suggest that difference in levels of self-control is non-significant when analysed in relation to crime and that self-control is related differently to the criminal involvement of males and females. Therefore, H2b has been rejected.

Hypothesis 2c states that there will be a difference in levels of general strategies for learning between males and females pursuing undergraduate and postgraduate education. The results of the study indicate that there exists a significant difference in levels of the dimensions of general strategies of learning. Wherein intrinsic value, cognitive strategy and self-regulation showed a significant difference whereas self-efficacy and test anxiety did not show a significant difference between males and females pursuing under graduation and postgraduation. The results indicate that females made a greater use of learning strategies which is in accordance with previous research where it was inferred that greater use of learning strategies was made by women than men. More specifically, a study by Green, J., & Oxford, R. (1995) indicates a

similar complex pattern of use as, only some items showed significant variation, much like the results obtained in this study. Therefore, Hypothesis 2c has been partially accepted.

Hypothesis 2d states that there will be a difference in levels of academic achievement between females and males pursuing their undergraduate and postgraduate education. The results of the study show that there was no significant difference in the levels of academic achievement between males and females pursuing their under graduation and post-graduation. There has always existed a significant difference in the academic achievement of males and females as indicated by an array of research up to the past few decades (Avery & Waler 1993; Lupart et al., 2004). However, a steady change can be observed in recent times where females are given a better chance at education than they were before, thereby empowering them to stay competent. The shift can be observed in the study by Fortin et al,. (2015), where female academic achievement has overtaken male academic achievement gradually between the 1980s and 2000s. Although the obtained results don't show a significant difference in the academic achievement of males and females, indicating that both males and females are equally competent in terms of academic achievement. Thereby, H2d has been rejected.

Conclusion

Upon evaluating the variables grit, self-control, general strategies for learning and academic achievement it was found that there existed a significant correlation between grit, general strategies for learning and academic achievement. Significant correlations were also found between dimensions of general strategies for learning and grit. Further, it was also sought that significant correlations existed between the dimensions of general strategies for learning and self-control. The dimensions of the grit variable also correlated remarkably with self-control.

Limitations

There was a major setback in data collection being restricted to the online medium because of the covid-19 pandemic. This constricted the responses to a certain demographic. Incorporation of a greater sample with greater variances across sex, age and other demographic differences could've been worked upon more diligently.

Application

Studying the variables grit, self-control, general strategies for learning and academic achievement can be used as a helpful tool in applying its findings to the domains of work culture and work ethic. The knowledge about these variables can also lead to the understanding of how one ought to compose himself/herself to achieve his/ her goals. A good balance between all of these domains has contributed to the well-functioning of an individual as reflected in our study findings. Hence, its application can be produced indefinitely to various life domains such as self-management, work management and goal achievement.

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Appendices

Appendix A

Informed Consent Form

Please read the following information and give your consent to be a part of the study.

The Researcher

We, Aisha Mustafa, Blessy Suzanna, Keerthana Evelyn and Sanchita Sobti are B.A. final year students, Dept. of Psychology, St. Francis College for Women, Hyderabad, India. We are conducting a research study as a part of our research project. You are requested to participate in the study because you come under the category of the required participant group.

The Study

The purpose of this study is to gain insights into your likes, dislikes, attitudes, interests and how you feel about certain situations. There is no right or wrong answer because everyone has a right to their own views. All you have to do is answer what is true for you.

The Process

Your participation in the study will involve the filling of a questionnaire, which may or may not have a time limit. It will take approximately 10 – 15 minutes for you to complete this questionnaire. The responses in the questionnaire will be used to analyse the results. Please note that findings from this study may be published and used in journals or article collections.

Risk

This study poses little to no risk to its participants. Confidentiality is maintained by not citing your actual name within the actual study. Your participation in the study is voluntary and you may choose to leave the study at any time. You may also request that any data collected from you not be used in the study. Your participation will help the research since your views are important.

By signing below, you agree that you have read and understood the above information, and would be interested in participating in this study.

Name:

Date:

Signature:

Thank you for agreeing to participate in this study

Appendix B

1. Age
2. Gender
    - Female
    - Male
    - Other
3. Religion
    - Hindu
    - Muslim
    - Christian
    - Sikh
    - Buddhist
    - Other
4. Nationality
    - Indian
    - Other
5. Family type
    - Nuclear
    - Joint
    - Extended
6. Family Size
    - 2-3
    - 4-5
    - 6 and above

7. Physical Health Status
    - Healthy
    - Suffering from chronic disease
    - Congenital conditions
    - Physical disability
    - Suffering from a life-threatening disease
8. Academic score of previously passes exams (in GPA):
9. Educational Qualification
    - Undergraduate
    - Postgraduate
10. Mental health status
    - Attending counselling
    - Attending therapy
    - On medication
    - None of the above
11. Check all that apply to you (if you've experienced any of these)
    - Home loss / significant damage
    - Financial loss
    - Employment loss/employment change
    - Physical injury
    - Life was threatened
    - Death of significant other
    - Death in close family
    - Prolonged separation from family
    - Any other

Appendix C

Short Grit Scale

	Very much like me	Mostly like me	Somewhat like me	Not much like me	Not like me at all
1. New ideas and projects sometimes distract me from previous ones.					
2. Setbacks don't discourage me.					
3. I have been obsessed with a certain idea or project for a short time but later lost interest.					
4. I am a hard worker.					
5. I often set a goal but later choose to pursue a different one.					
6. I have difficulty maintaining my focus on projects that take more than a few months to complete.					
7. I finish whatever I begin.					
8. I am diligent.					

Appendix C

10-item Self-Scoring Self-Control Scale.

	Very much like me **1**	**2**	**3**	**4**	Not at all like me **5**
1. I have a hard time breaking a bad habit.					
2. I get distracted easily.					
3. I say inappropriate things.					
4. I refuse things that are bad for me, even if they are fun.					
5. I'm good at resisting temptation.					
6. People would say that I have very strong self-discipline.					
7. Pleasure and fun sometimes keep me from getting work done.					
8. I do things that feel good in the moment but regret later on.					
9. Sometimes I can't stop myself from doing something, even if I know it is wrong.					
10. I often act without thinking through all the alternatives.					

Appendix E

Motivated Strategies of Learning Questionnaire.

	Not at all true for me **1**	**2**	**3**	**4**	**5**	**6**	Very true for me **7**
1. I prefer classwork that is challenging so I can learn new things.							
2. Compared to other students in this class, I expect to do well.							
3. I am nervous during the test that I cannot remember the facts I learned about.							
4. It is important for me to learn what is being taught in the class.							
5. I like what I am learning in the class.							
6. I am certain that I can understand the ideas taught in this class.							
7. I think I will be able to use what I learn in this class in other classes.							

8. I expect to do very well in this class.							
9. Compared to others in this class, I think I am a good student.							
10. I often choose paper topics I will learn something from, even if they require more work.							
11. I am sure I can do an excellent job on the problems and tasks assigned in the class.							
12. I have an uneasy upset feeling when I take a rest.							
13. I think I will receive a good grade in my class.							
14. Even when I do poorly in a test, I try to learn from my mistakes.							
15. I think that what I am learning in this class is useful for me to know.							
16. My study skills are excellent when compared with others in this class.							

17. I think what we are learning in this class is interesting.							
18. Compared with other students in this class, I think I know a great deal about the subject.							
19. I know that I will be able to learn the material for this class.							
20. I worry a great deal about tests.							
21. Understanding the subject is important to me.							
22. When I take a test, I think about how poorly I am doing.							
23. When I study for a test, I put together the information from the class and the book.							
24. When I do my homework, I try to remember what the teacher said in the class so that I can answer the questions correctly.							

25. I ask myself questions to make sure I know the material I've been studying.							
26. It is hard for me to decide what the main ideas are in what I read.							
27. When work is hard, I either give up or study only the easy parts.							
28. When I study, I put important ideas into my own words.							
29. I always try to understand what the teacher is saying, even if it doesn't make sense.							
30. When I study for a test, I try to remember as many facts as I can.							
31. When I study, I copy my notes over to remember the material.							
32. I work on practice exercises and answer the end of the							

chapter questions, even when I don't have to.							
33. Even when study materials are dull and uninteresting, I keep working until I finish.							
34. When I study for a test, I practice saying important facts over and over to myself.							
35. Before I begin studying, I think about the things I will need to do to learn.							
36. I use what I have learnt from old homework assignments and the textbooks to do new assignments.							
37. I often find that I have been reading for class but don't know what it is all about.							
38. I find that when the teacher is talking, I think of other things and don't really listen to what is being said.							

39. When I am studying a topic, I try to make everything fit together.							
40. When I'm reading, I stop once in a while to go over what I've read.							
41. When I read materials for the class, I say words over and over to myself to help me remember.							
42. I outline the chapters in my book to help me study.							
43. I work hard to get a good grade even when I don't like a class.							
44. When reading, I try to connect the things I am reading to the ones I know.							