



Association of Grit with Depression among Medical Students

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ABSTRACT

Background Depression is major risk factor for adverse mental health outcomes among medical undergraduate students. Grit, on the other hand, is linked to positive psychological outcomes and higher levels of meaning and satisfaction in life could be a protective factor against depression in medical graduates. **Objective:** The main aim of this study was to correlate grit levels with depression among medical students. **Study Design:** Cross-sectional study. **Settings:** Aziz Fatimah Medical and Dental College, Faisalabad Pakistan. **Duration:** December 2018 to May 2019. **Methodology:** Participants being undergraduate medical students were voluntary after taking informed consent. Students were asked to fill their demographic data along with validated questionnaires. Depression was determined through the Patient Health Questionnaire (PHQ-9) and grit was analyzed using Short Grit Scale (GRIT-S) consisting of 8 questions. To determine the association between grit and depression Linear Regression analysis was used. **Results:** Regression analysis showed significant negative association between grit and depression, beta coefficient of -3.5 is showing that 1 unit increase in grit score decreases the depression by 3.5 times p value of this test (0.001*). **Conclusion:** Enhancement in grit levels could reduce the level of depression in medical students and thus grit could be a very important intervention in preventing depression.

Keywords: Depression, Grit, Medical students.

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INTRODUCTION

Depression is a serious mental illness that negatively affects how you feel, the way you think and how you act can lead to a number of emotional and psychological problems and can decrease a person's performance at work and at home.¹

Depression affect over 350 million individuals across the globe and is a serious public health problem.² Studies have found out that 45.5% medical students in Pakistan suffer from depression.³ Such a large percentage of medical students having depression makes them a high risk vulnerable group. Further added factors in depression in Pakistan may be difficulties related to the educational and work condition, way of teaching and the limited opportunities, as Pakistan is a developing country. Studies have shown that medical undergraduates in Pakistan suffer from gender discrimination, which led to lack of opportunities, resentment, fear and anxiety in students leading. This may also contribute to the higher prevalence of anxiety and depression in medical students.⁴

As medical undergraduate program is considered to be the best and most decent education program in Pakistan and students dream of becoming doctor. Yet, studies have shown that (45.5%)³of medical undergraduates in Pakistan and (51.1%) medical undergraduates worldwide have depression.⁵

According to World Health Organization (WHO) prevalence of depression is very high as it is the ranked 4th in the global burden of disease. By 2020 it is projected to be ranked 2nd.⁶

Medical students have a lot of study burden, peer pressure, frequents tests, assignments, long study working hours to get through the professional examination, keep them away from friends and family making them vulnerable to depression.

Suicidal rates in medical students due to higher prevalence of depression is also high and alarming.⁷

Grit is defined by Angela Duckworth as positive non cognitive trait defined as perseverance and passion for long-term goals.⁸A gritty individual takes life and its goals as a marathon race and work for it day in and day out not just for the months but for years. Grittier students are hard-working and pursue their long terms goals with passion and perseverance and more likely to succeed.⁸ Students having high levels of grit might not go for shortcuts or backdoor channels as they stick to their dreams until they achieve it.⁸ High levels of grit is proven to linked with positive educational and work related outcomes.^{9,10}

Grit is interlinked with various indices of lifelike satisfaction, contentment, prosperity and having meaning in life.^{10,11}

Gritty people tackle obstacles and failures in a positive way and they are very resilient and hardworking and don't give up on their dreams that easily. It is found out that increased levels of grit were associated with higher level of health care management skills, positive mental and physical health.¹² It is also found that grit is associated with decreased involvement in unhealthy activities like alcohol abuse and use of marijuana,¹³ having all the above mentioned traits in Grittier students there is a less chance for them to detract from their path and goals and leading a life of depression and anxiety. So, there is strong plausibility that Grit could have negative association with depression.

METHODOLOGY

Study Design: Cross sectional study.

Settings: Aziz Fatimah Medical and Dental College, (AFMDC) Faisalabad Pakistan.

Duration: December 2018 to May 2019.

Sample Technique: Convenient sampling.

Sample Size: A total 183 medical undergraduate students 85 males and 95 females' students.

Inclusion Criteria: Medical students of Aziz Fatima Medical and Dental collage.

Exclusion Criteria: Any kind of known psychiatric illness students.

Methods: Students were enrolled in the study during their curriculum classes; they were fully informed and briefed about the study protocols. Confidentiality regarding the demographic data, Grit and depression scores of students was fully maintained. Students were asked to fill their demographic data along with validated self-administered Questionnaire with response rate 90%. Initially 200 questionnaire forms were distributed out of which 183 were filled properly and included in the study. Grit was measured using the 8-questioned Short Grit Scale (GRIT-S). The prevalence of depression in our study is based on the cutoff point of PHQ-9 Score ≥ 10 .¹⁵

Statistical Analysis: Statistical Package for Social Sciences (SPSS) version 23 was used for data analysis. The data was entered manually into the SPSS Statistics, version 23. Means were used for continuous variables, percentages for categorical variables. Linear Regression analysis was used to determine the association of Grit variable with depression. P value less than or equal to 0.05 was considered significant.

RESULTS

Table 1: Demographic characteristics of study population and bivariate analysis with PHQ-9 and grit score

		(%)	PHQ-9 Score (Mean)	GRIT Score (Mean)
Gender	Male	48	10.9	3.1
	female	52	9	3.2
Academic year	2nd year	25	9	3.1
	3rd year	42.6	10.6	3.1
	4th year	31.6	8.7	3.1
Repeated academic year	Not repeated	90	9.7	3.1
	Repeated	10	8.3	3.2
Level of studies	Pre-clinical	68.3	10	3.1
	Clinical	31.7	8.6	3.2

PHQ-9= patient health questionnaire -9

Total Study participants were 183 consisted of males 85 (48%) and females 95 (52%). The mean grit level scores in study population was 3.22 (SD = 0.49). Mean depression score was 9.6 with standard deviation of 4.7. The prevalence of depression in this study is based on the cutoff point of PHQ-9 Score ≥ 10 , 88 students out of 183(47%) were classified as having major depression. Demographic characteristics of participants are shown in Table 1.

The participants were classified into three categories on the basis of grit score. participants whose grit score was below 2.88 were included in category a having low grit score, those grit

score ranging between 2.88 to 3.50 were included in category b having average grit score and participants with grit score above 3.50 were included in category c having high grit score. Table 2 shows the Comparison of categories of Grit score with Mean Depression score.

Table 2: Comparison of percentile Grit score with mean depression score

Percentile Grit score	n	Mean depression score	Standard deviation
Low Grit score	59	11.6	4.9
Average Grit score	77	9.5	4.1
Higher Grit score	47	7.3	4.3

Linear regression analysis was showing significant negative association between grit and depression, beta coefficient of 3.5 is showing that 1 unit increase in grit score decreases the depression by 3.5 times p value (0.005*).

Table 3: Regression analysis shows negative correlation between grit and depression

Independent variable	Beta coefficient (β)	Standard error	P value
Grit	-3.5	0.66	0.005*

Dependent variable: Depression

*P value less than or equal to 0.05 was considered significant.

DISCUSSION

This is the first study done on depression and grit conducted in Punjab, Faisalabad, in Aziz Fatima Medical College. The prevalence of depression in our study is based on the cutoff point of PHQ-9 Score ≥ 10 , is 47% which is similar to other Only very few researches has done on the association between grit and depression. Study done by Musumari PM *et al*, in Chiang Mai, Thailand concluded that high levels of grit negatively correlated with depression, supporting our study results.

As medical students have a lot of study burden and their academic curriculums are tougher than other graduation programs, they are tending to be more prone to depression and studies have shown that grit is linked with academic productivity and life success.¹⁶⁻¹⁷ Grittier students realize the worth of life and its purpose, are less likely to be depressed.¹⁸

Grit is an important determinant in students to succeed academically.⁸ Those students who face their academic challenges positively and remain committed to them are less likely to have any trouble, anxiety or depression.

Another study showed that grit was negatively correlated with depression in high school students of Philippines.¹⁹ Personal achievements and Grit activates dorsomedial prefrontal cortex in the brain, the region also said to be responsible for concepts such as self-regulation, planning, goal-setting, and reflection of past experiences, So there is a biological plausibility that grit has positive psychological effects.¹⁹

CONCLUSION

Increasing grit levels is likely to be a promising intervention for the prevention of depression in medical undergraduate

students. Grit levels can be increased through Growth mindset approach introduced by Dr. Carol S. Dweck.

LIMITATIONS

This study is single institution based with limited sample size further analytical studies should be done with larger sample size.

SUGGESTIONS

Overall, this study demonstrates that grit is an independent predictor of depression among medical undergraduate students.





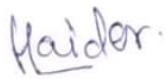
CONFLICT OF INTEREST

There is no conflict of interest involved.

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