

Research Article

The Association of Grit and Burnout among Gynecological Post-Graduate Residents: A Cross-Sectional Study

Salik Ahmed Cheema¹, Abida Sajid², Ahmad Hassan³

¹House Officer, Mayo Hospital, Lahore; ²Associate Professor of Obstetrics & Gynaecology, KEMU/ Lady Aitchison Hospital, Lahore; ³House Officer, Mayo Hospital, Lahore.

Abstract

Burnout is a syndrome comprising of personal exhaustion and poor work performance experienced by an individual. Burnout is widespread among medical professionals, particularly doctors in training, and is multi-factorial in origin. In Pakistan, multiple researches have been conducted studying extrinsic factors in relation to Burnout. Grit is an intrinsic personality trait, defined as perseverance and passion for long term goals. High levels of Grit have been linked with better academic grades and career success. Grit has the potential to influence the development of Burnout. High levels of Burnout are reported among Pakistani doctors but have not been studied with respect to intrinsic character traits. The study of Grit and Burnout offers a novel approach to curtailing Burnout among medical professionals.

Objective: To determine the co-relation between the Grit score and Burnout level among post-graduate residents of Gynaecology and Obstetrics.

Methodology: A cross-sectional survey-based study was carried out among the Post-graduate residents of Lady Aitchison Hospital, King Edward Medical University (KEMU) Lahore. Ethical approval for the study was taken from IRB (Institutional Review Board) of KEMU Lahore. Levels of Grit and Burnout were determined via the Short Grit Scale (SGS) and Oldenburg Burnout Inventory (OLBI) respectively.

Results: There were 49 participants having a mean age of 27.7 years. A mean Grit score of 3.25 and a mean Burnout score of 42.4 was calculated from the responses. Statistical analysis via Pearson's correlation gave a value of -0.511 which shows a moderate inverse relation.

Conclusion: Grit has a protective role in causing low levels of Burnout.

Corresponding Author | Dr. Salik Ahmed Cheema House Officer, Mayo Hospital, Lahore

Email: salik.wp@hotmail.com

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Introduction

Burn-out is defined in the 11th Revision of the International Classification of Diseases (ICD-11) as a "syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed" with the associated effects of exhaustion, cynicism and diminished job performance.¹ The prevalence of Burnout among physicians has

been reported to be between 0% to 80% in a 2018 systemic review by Rotentstein et al.²

Burnout is caused due to a variety of external stressors such as long working hours, sleep deprivation and difficult working conditions whereas satisfaction with workload, congenial relationship with colleagues and older age groups of medical practitioners have decidedly lower burnout rates.^{3,4} Burn-

out among physicians is linked with adverse effects on cost of healthcare which has wider implications for the effective delivery of medical services.⁵ The evaluation of Burnout is made via administration of validated questionnaires such as the Maslach Burnout Instrument or the Oldenburg Burnout Inventory.^{6,7}

In Pakistan, Burnout has been extensively evaluated in terms of social and demographic parameters. An example of such a parameter includes an inverse relationship between monthly income and degree of Burnout as reported by Washdev et al.⁸ Moreover, Zubairi et al reported dissatisfaction with workload, length of working hours, relationship with co-workers and lack of autonomy linked to significantly high levels of burnout in residents of Aga Khan University Karachi.⁹

An insight into personality traits which dictate the individual response to the aforementioned stressors and predilection to Burnout is found lacking in the local context. With this perspective in mind, the psychometric value and concept of 'Grit' assumes cardinal importance in relation to burnout. Grit is defined as perseverance and passion for long-term goals.¹⁰ The eminent psychologist Angela L. Duckworth is the pioneer in the scientific study of Grit who developed the Short Grit Scale (SGS) for psychometric assessment.¹¹ Grit has subsequently been shown to have better predictive validity of success over the well-known and recognized IQ (Intelligence Quotient) level.¹² In addition to academic achievement, Grit is found to be a strong predictor for work performance in a 2015 study by Suzuki et al.¹³

Considering the high prevalence of Burnout among post-graduate residents in Pakistan¹⁴, it is imperative that a holistic approach is adopted to tackle the issue. The resultant findings will dictate the need for further study into the use of personality traits in evaluating Burnout among medical professionals and guide recommendations for psychological counselling in residency programs.

A systemic search of the keywords 'Grit', 'Burnout' and 'Pakistan' was made on 3rd January 2019 (and repeated subsequently on 29th November 2019 for

article review) in the following databases: Pakmedinet, PubMed, Pubpsych and Ingentaconnect. No relevant researches were found pertaining to our research topic.

Methods

Ethical approval for the research was granted by the Institutional Review Board of King Edward Medical University Lahore (IRB KEMU) vide notice no. 382/RC/KEMU Dated 9/01/2019. The study was conducted in January 2019 at Lady Aitchison Hospital where the Gynecology and Obstetrics Department is divided into Unit 4 and Unit 5 having a total strength of 57 Post-Graduate Residents (29 in Unit 4 and 28 in Unit 5). The minimum group size to allow for statistical correlation was determined to be 48 via posthoc power analysis using GPower with power (1-beta) = 0.8 and alpha = 0.05.¹⁵

This cross-sectional study used non-probability based purposive sampling to recruit the participants who met the inclusion criteria, namely: Post-Graduate Residents of either MS (Master of Surgery), MCPS (Member of College of Physicians and Surgeons) or FCPS (Fellow of College of Physicians and Surgeons) Program working at Units 4 and 5 of Lady Aitchison Hospital. The exclusion criteria barred House Officers, Post-Graduate Residents on Rotation, Post-Graduate Residents of other Institutes and Consultants (Senior Registrar, Assistant Professor, Associate Professor, Professor) from participating in the study.

Participants were asked to complete a Performa consisting of an informed consent form, a bio-data section where the participant had to fill out the Name, Age, Unit of work, Program of Study (FCPS, MS, MCPS) and the Level of training (Basic: first 2 years of training versus Higher: Year 3 and 4 of training.) The Level of Training is based upon the resident passing the Intermediate Module (IMM) which is an examination taken approximately 2 years after a resident starts the training program. This was followed by two questionnaires: The SGS (Short Grit Scale) and the OLBI (Oldenburg Burnout Inventory).

The SGS consists of 12 items and measures the component of Grit which is a score derived from the participant responses on the questionnaire with a score range from a maximum of 5 (extremely gritty) to the lowest score on the scale being 1 (not at all gritty). The OLBI is a 16-item questionnaire from which the Burnout component is derived from the participant responses. OLBI was employed in preference to the widely used Maslach Burnout Inventory as it was free of charge and includes both positive and negatively worded questions items. Also, OLBI measures only the Exhaustion and Disengagement component of Burnout while excluding the measurement of Professional Competence which narrows down the variables for a more accurate correlation.

For statistical analysis, collected data was entered and analyzed in computer program SPSS version 20. Grit and Burnout scores was calculated from the participant's responses on the Performa manually and presented as mean and standard deviation. Independent Samples two-tailed Student's t test was used for statistical analysis between the two subgroups of Level of Training (Basic and Higher) and the association between Grit and Burnout (hypothesized to be inversely co-related) was derived by Pearson's test.

Results

There were 49 respondents from a total of 57 Post-Graduate Residents giving a response rate of 86%. All participants were female with the mean age being 27.7 years within a range from 26 to 30 and a standard deviation of 1.26 years. 30 residents were from the FCPS program, 18 from MS program and 1 participant from the MCPS program. Participants at the Basic Surgical Trainee level were 28 whereas 21 were at the Higher Surgical level.

From the administered questionnaires, the mean Grit score obtained was 3.25 (Minimum 1.00 and Maximum 4.33) and the mean Burnout score was 42.4 (Minimum 27 and Maximum 59). Pearson

Correlation gave a value of $r = -0.511$ ($p < 0.01$) which shows a moderately inverse relationship.

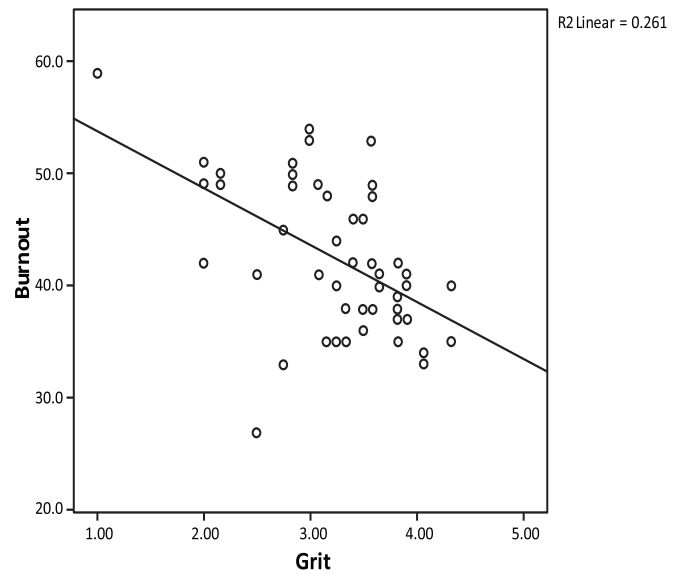


Figure 1: Graphical Representation of Correlation between Grit and Burnout Scores

The Post-graduate residents at the Basic Level had a mean Grit score of 3.36 whereas those at the Higher Level had a mean Grit score of 3.09. No significant difference between the groups was determined by Independent Samples Student's t-Test (p -value = 0.185; $p > 0.05$).

Table 1: Comparison of Mean Grit Scores between Basic and Higher Levels

Level	Number	Mean Grit Score	Std. Error Mean	Std. Deviation
Basic	28	3.360	.11088	.58672
Higher	21	3.0962	.17147	.78578

The Post-graduate residents at the Basic Level had a mean Burnout score of 41.32 whereas those at the Higher Level had a mean Burnout score of 43.85. No significant difference between the groups was determined by Independent Samples Student's t-Test (p -value = 0.197; $p > 0.05$).

Table 2: Comparison of Mean Burnout Scores between Basic and Higher Levels

Level	Number	Mean Burnout Score	Std. Error Mean	Std. Deviation
Basic	28	41.321	1.2334	6.5266
Higher	21	43.857	1.5202	6.9662

Discussion:

This research represents a preliminary step in the study of Grit and Burnout in Pakistan which has yielded 2 main findings. First, presence of an inverse relationship between Grit and Burnout showing that participants with higher scores of Grit had lower levels of Burnout and vice-versa. Second, no significant statistical difference of Grit and Burnout scores was observed between Basic and Higher levels of training.

The correlation of Grit and Burnout reported in our study is similar to that documented in literature. Salles et al surveyed 141 residents across 9 surgical specialties at the Stanford University associated teaching hospitals and showed higher levels of Grit to be co-related with lower levels of Burnout.¹⁶ The results identified Grit as a marker for psychological well-being of the surgical residents. Dam et al studied Grit, Burnout and Well-Being in 173 Emergency Medicine Residents and found Residents with high Grit were less likely to experience Burnout or to have low Well-Being.¹⁷ Kurbatov et al administered a composite survey to study the multi-variate underpinnings of Burnout to 55 residents of the Yale General Surgery program and found the highest risk group for Burnout had the lowest Grit score.¹⁸ The results of our study validate the findings of previous researches which have consistently shown positive impact of Grit in lowering Burnout.

A comparison of Grit and Burnout scores between Basic and Higher levels of training was also carried out but no significant statistical difference was

determined, perhaps as a consequence of the smaller sample size in each subgroup. Nevertheless, Cortez et al found higher levels of Burnout correlating with low scores of Grit in the initial years of a General Surgery residency whereas Chief Residents in their final year of training had high Grit and low Burnout scores.¹⁹ Such a difference has been validated in a study on 102 Ear, Nose and Throat (ENT) surgeons carried out by Walker et al that found higher levels of Grit and consequently lower Burnout scores in senior doctors compared to their junior counterparts.²⁰ Halliday et al studying the Grit-Burnout correlation among doctors in the United Kingdom also found Consultants having higher levels of Grit than Trainees.²¹

A cross-sectional design for sampling purposes was employed in our study as it would require less time for data collection. Cross-sectional study design has been used to study the correlation of Grit and Burnout in General Surgery, Emergency Medicine, Ear, Nose and Throat (ENT) and Neurosurgery, Residents.^{16,17-20-22} However, this did not allow us to examine whether an individual's level of Grit remain static or change as one becomes more proficient in handling the demands of training. Cortez et al did use a longitudinal study design where 55 General Surgery residents were administered Grit and Burnout questionnaires from 2015 to 2018 and their scores statistically compared with incoming intern level.¹⁹

An apparent limitation of our study is the absence of male participants due to the fact that our study focuses on the specialty of Gynaecology and Obstetrics which is predominantly female. Shakir et al studied Grit, Burnout and Resilience in U.S Neurosurgery residents and found lower resilience was associated with the female sex.²² Despite overlap, Grit and Resilience are not synonymous.²³ Conversely, Camp et al studying objective predictors of Grit among 455 U.S Orthopaedic Surgery residency applicants found females to have higher levels of Grit than male applicants.²⁴ A multispecialty research into the study of Grit will naturally allow for comparisons between genders and the applicability of our stated findings on the relation between

een Grit and Burnout across various medical fields in Pakistan.

Apart from detecting propensity towards developing Burnout, Grit has also been shown to predict career success and career engagement as studied by Lechner et al among 2246 participants. In fact, Olson et al found Grit to have a positive correlation in passing the qualifying examination among 385 Emergency Medicine residents.²⁵ These findings bode well for introducing psychometric testing of personality traits, particularly Grit, in the evaluation of medical residents. A holistic approach to the problem of physician Burnout will lead to effective management and long-term solutions.

Conclusion:

The results of our study highlight the protective role of Grit in preventing Burnout among the gynaecological post-graduate residents of Lady Aitchison Hospital Lahore.

Ethical Approval: Given

Conflict of Interest: The authors declare no conflict of interest

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