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ORIGINAL RESEARCH

Correlation between Adjustment Disorder and Resilience amongst Postgraduate Medical Residents at Government Medical College in Maharashtra

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ABSTRACT

Background: This study aims to uncover the relationship between adjustment disorder and resilience, a critical factor in understanding residents' ability to cope with stress. This study fills a gap in data regarding the prevalence of adjustment disorder in this population. Objective: This cross-sectional observational study explores the correlation between adjustment disorder and resilience among postgraduate medical residents in Maharashtra, India. Additionally, it investigates factors associated with adjustment disorder. **Methods:** This study involved 106 subjects (44 females and 62 males). Screening for adjustment disorder utilized the adjustment disorder-New Module scale, while resilience was assessed with the Connor Davidson Resilience Scale. **Results:** The study revealed a significant negative correlation between adjustment disorder and resilience parameters, including flexibility, self-efficacy, regulate emotion, optimism, and cognitive focus under stress (P-value<0.05). These findings highlight the intricate relationship between mental health challenges and resilience among postgraduate medical residents in Marathwada, Maharashtra. **Conclusion:** The high prevalence of adjustment disorder underscores the urgency of mental well-being interventions. The identified correlation emphasizes the potential benefits of tailored resilience-building programs for medical residents.

Keywords: Medical Students, Stress, Post-graduation, Adjustment Disorder, Residency, Suicide

INTRODUCTION

Medical residency is frequently linked to elevated stress levels and psychological distress, attributed to the demanding and rigorous nature of the training environment.[1,2] Adjustment disorder, marked by the emergence of emotional or behavioral symptoms within three months of exposure to an identifiable stressor, is a common concern in this context[3]. On the other hand, resilience refers to The capacity to withstand stress and adversity while sustaining regular psychological and physical functioning [4]. This study seeks to explore the relationship between adjustment disorder and resilience, aiming to shed light on the often-neglected challenges experienced by resident doctors. Understanding this correlation is vital for addressing the well-being of medical residents, influencing their treatments and shaping the future of medicine.

MATERIAL AND METHODS

Conducted in the Marathwada region of Maharashtra, this cross-sectional observational study focused on medical students. We utilized an online structured questionnaire, and participant consent was inferred when they commenced filling out the form. The study commenced on June 1, 2023, and concluded on September 1, 2023. The questionnaire link was distributed through social networking applications. Upon clicking the link, participants were automatically directed to a brief overview of the study before proceeding to provide sociodemographic data in the first section of the questionnaire.

Instruments**:** The survey comprised three sections:

1. Sociodemographic Data
2. Adjustment Disorder New Module Questionnaire 20 (ADNM-20)
3. Connor-Davidson Resilience Scale (CD-RISC) 10

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A self-report measure, the ADNM-20 consists of two components: a stressor list and an item list. The list of stressors encompasses a wide array of both short-term and prolonged life events that have occurred over the last two years, while the item list assesses symptoms in response to the most distressing event(s)[5].

The Connor-Davidson Resilience Scale (CD-RISC)-10 consists of 10 items, each rated on a 5-point scale (0-4), with higher scores indicating greater resilience[6]. Permission and payment for the use of this scale were obtained before its application in the study.

During the pilot study, encompassing both offline and online questionnaire administration, it was determined that completing the questionnaire took approximately 8-10 minutes. Data collection emphasized complete confidentiality and anonymity. It was explicitly stated that the interpretation of study findings would be solely for research purposes and not disclosed for commercial use. A total of 105 responses were recorded, and collected data were rigorously checked for completeness and consistency

Statistical Data Analysis

Data on categorical variables is reported as n (% of respondents), and data on continuous variables is presented as mean and standard deviation (SD). Descriptive statistical measures, including mean, SD, min, and max, are employed to illustrate the distribution of various study variables. Statistical comparison of the distribution of categorical variables between groups is assessed through the Chi-Square test. If more than 20% of cells exhibit an expected frequency of less than 5, Fisher's exact probability test is employed. Correlation analysis is performed using Spearman's method. The assumption of underlying normality is tested before subjecting the study variables to Spearman's correlation analysis. All results are shown in tabular as well as graphical format to visualize statistically significant differences more clearly. In the entire study, p-values less than 0.05 are considered to be statistically significant. The entire data is statistically analyzed using Statistical Package for Social Sciences (SPSS ver 24.0, IBM Corporation, USA) for MS Windows.

RESULTS

In this study, a total of 105 respondents who met the inclusion criteria were enrolled. Table 1 provides a comprehensive overview of the sociodemographic characteristics of the postgraduate medical students. The majority of the participants were male, constituting 59% of the sample, and a significant proportion fell within the 25-27 age group, accounting for 62.9% of the respondents. Among the medical specialties represented, Surgery (13.3%) and Orthopaedic (12.4%) were the most prevalent. Notably, 7.6% of the participants reported a family history of psychiatric illness, and 30.5% indicated the presence of other medical or surgical comorbidities. On univariate statistical analysis, none of the factors such as age, sex, co-morbidity, substance abuse, family history of psychiatric illness, and being a single child were the statistically significant determinants of adjustment disorder among the study participants (P-value>0.05 for all.

When examining the most recent stressors experienced, 34.3% of students cited too little/too much work as their primary stressor, followed closely by conflicts in their working lives (29.5%) and the pressure to meet deadlines or time constraints (25.7%) ,other recent stressors and its distribution is shown in Graph 1.

As per the mean scores,shown in Table2(descriptive statistics), the most affected adjustment disorder is Avoidance (mean score 1.47), followed by Anxiety (mean score 1.39), Impulse disturbance (mean score 1.33), Depressed mood (mean score 1.24), Preoccupations with the stressor (mean score 1.21) and Failure to adapt (mean score 1.03).

Assessment of resilience was done with Connor-Davidsons Resilience Scale. Assessment of resilience was done with examination of compounds and its score, where higher the score more the resilience, the findings of which is denoted in Table 3.The study further explored the correlation between adjustment disorder and resilience, with the CDRISC scale being used to assess resilience. The descriptive statistics of mean scores indicated that the highest level of resilience among the participants was observed in the domain of 'Flexibility' (mean score 2.61), followed by 'Self-efficacy' (mean score 2.56), 'Regulate emotion' (mean score 2.49), 'Optimism' (mean score 2.49), and 'Cognitive focus/maintaining attention under stress' (mean score 2.13). Notably, all these domains had a maximum attainable score of 4.

The study revealed statistically significant negative correlations between all components of adjustment disorder and resilience parameters, including, Optimism, Self-efficacy, Flexibility, regulate emotion, , and Cognitive focus/maintaining attention under stress (P-value<0.05 for all). Specifically, lower levels of resilience across all components were associated with higher levels of adjustment disorder, and vice versa. The findings are denoted in the Table 4.

In conclusion, based on the statistical analysis conducted, it is evident that higher levels of adjustment disorder are linked to lower levels of resilience among postgraduate medical students in the Marathwada region of Maharashtra, India.

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Graph 1: Distribution of stressful events happened in the past, self reported by the subjects participated in the study.

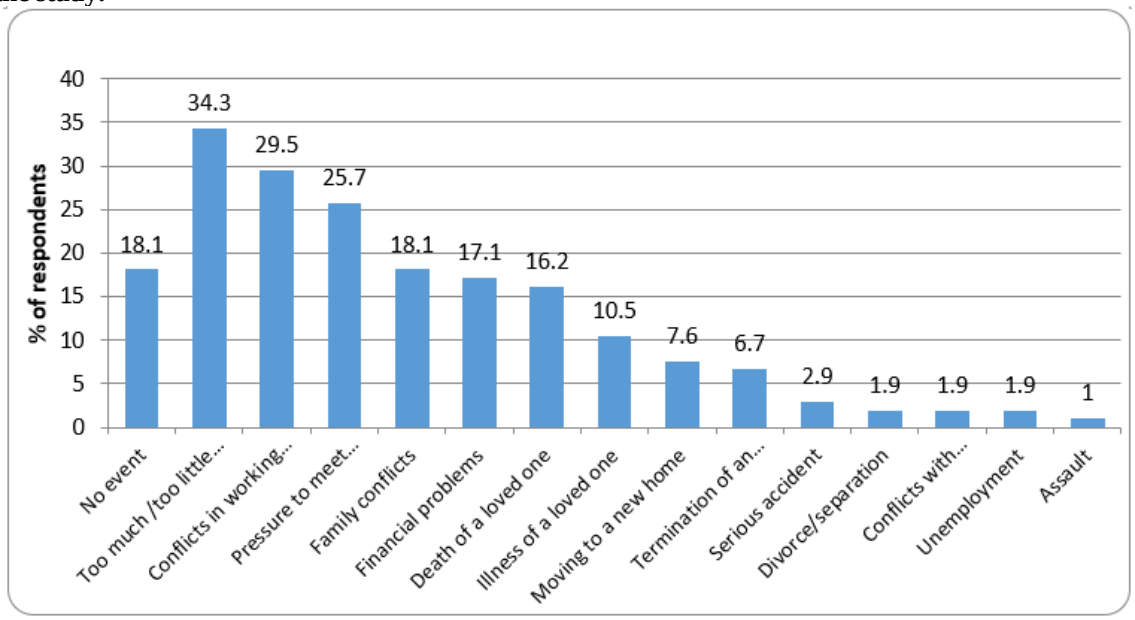

Table 1: Univariate statistical analysis showing statistical association between sociodemographic and other factors, and the adjustment disorder among the subjects participated in the study

		Adjustment Disorder Status				
		Absent (n=6)		Present (n=99)		
Factors		**n**	**%**	**n**	**%**	**P-value**
Age group (years)	<30	5	83.3	89	89.9	0.494^{NS}
	≥30	1	16.7	10	10.1	
Sex	Male	5	83.3	57	57.6	0.397^{NS}
	Female	1	16.7	42	42.4	
Co-morbidity	Yes	2	33.3	30	30.3	0.960^{NS}
	No	4	66.7	69	69.7	
Family history	Yes	0	0.0	6	8.1	0.999^{NS}
	No	6	100.0	91	91.9	
Substance abuse	Yes	2	33.3	35	35.4	0.999^{NS}
	No	4	66.7	64	64.6	
Single child	Yes	1	16.7	8	8.1	0.424^{NS}
	No	5	83.3	91	91.9	
P-value by Chi-Square test. P-value<0.05 is considered to be statistically significant. NS – Statistically non-significant.						

Table 2: Distribution of level of different components of adjustment disorder among the subjects participated in the study

	Adjustment disorder score (level)			
Adjustment disorder component	**Mean**	**SD**	**Minimum**	**Maximum**
Preoccupations with the stressor	1.21	0.83	0.00	3.00
Failure to adapt	1.03	0.87	0.00	3.00
Avoidance	1.47	0.86	0.00	3.00
Depressed mood	1.24	0.79	0.00	3.00
Anxiety	1.39	1.00	0.00	3.00
Impulse disturbance	1.33	0.94	0.00	3.00
Higher the mean score, higher the level of the disorder and vice-versa.				

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Table 3: Distribution of level of different components of Resilience among the subjects participated in the study.

	Resilience score (level)			
Resilience component	**Mean**	**SD**	**Minimum**	**Maximum**
Flexibility	2.61	0.89	0.00	4.00
Self-efficacy	2.56	0.94	0.00	4.00
Regulate emotion	2.49	1.10	0.00	4.00
Optimism	2.49	0.93	0.00	4.00
Cognitive focus/maintaining attn under stress	2.13	1.15	0.00	4.00
Higher the mean score, higher the level of the resilience and vice-versa.				

Table 4: Correlation analysis between adjustment disorder and Resilience among the subjects participated in the study

	Components of Resilience									
	Flexibility		**Self-efficacy**		**Regulate emotion**		**Optimism**		**Cognitive focus/maintaining attention under stress**	
Components of Adjustment disorder	**r-value**	**P-value**	**r-value**	**P-value**	**r-value**	**P-value**	**r-value**	**P-value**	**r-value**	**P-value**
Preoccupations with the stressor	-0.246	0.012*	-0.454	0.001***	-0.346	0.001***	-0.280	0.001***	-0.406	0.001***
Failure to adapt	-0.297	0.002**	-0.457	0.001***	-0.352	0.001***	-0.369	0.001***	-0.400	0.001***
Avoidance	-0.184	0.046*	-0.330	0.001***	-0.233	0.017*	-0.207	0.034*	-0.280	0.004**
Depressed mood	-0.257	0.008**	-0.470	0.001***	-0.407	0.001***	-0.307	0.001***	-0.350	0.001***
Anxiety	-0.187	0.045*	-0.388	0.001***	-0.320	0.001***	-0.256	0.008**	-0.267	0.006**
Impulse disturbance	-0.330	0.001***	-0.525	0.001***	-0.376	0.001***	-0.372	0.001***	-0.374	0.001***
Correlation analysis by Spearman's method. P-value<0.05 is considered to be statistically significant correlation. *P-value<0.05, **P-value<0.01, ***P-value<0.001.										

DISCUSSION

In the context of this cross-sectional study, the primary objective was to evaluate the prevalence of adjustment disorder among post-graduate medical students in the Marathwada region and examine its potential correlation with resilience. The study employed the ADNM-20 scale to assess adjustment disorder. The general prevalence of adjustment disorder among the participants was notably high, with a reported rate of 94%. This prevalence appears to be significantly greater when compared to studies conducted in other regions, such as Saudi Arabia, where only 21.3% of first-year medical students were found to be at high risk for adjustment disorder.

The available body of research on adjustment disorder among medical professionals remains limited. However, other studies focusing on students have reported relatively high rates of adjustment problems, at an Ethiopian University and at Jimma University in Ethiopia[7]. In study conducted at the Bahrain's Gulf University,medical students exhibited adjustment disorders, with the highest prevalence observed among early semester medical students[8]. These findings highlight the need for further exploration and understanding of adjustment disorders in medical education.

The stressors identified in this study were consistent with previous research[7,8], with the most common stressors being related to workload, time pressures, and difficulties in adhering to timeline. Core symptom frequently communicated by the participants was a preoccupation with the stressor, aligning with previous studies. Moreover, avoidance was identified as the most commonly reported accessory symptom, which may be a significant factor in assessing adjustment disorder. Additionally, the study indicated a high chances of anxiety and depression amongst medical students, suggesting a potential need for mental health support and intervention within this population.

In light of the literature review and the study's findings, it was found that factors such as age,sex and family issues might be determining items for adjustment disorder. However, no statistically significant correlations were observed regarding sex, age, comorbidities, substance abuse, or a family

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history of psychiatric illness in this study. These results underscore the complexity of adjustment disorder and the call for more research to better understand the contributing factors and potential interventions.

CONCLUSION

The carried-out investigation conducted among postgraduate medical residents in Maharashtra, India, reveals a high prevalence of adjustment disorder, primarily triggered by stressors related to workload and time pressures. The research highlights a strong negative correlation between adjustment disorder and resilience, emphasizing the importance of building resilience to cope with the demanding nature of medical residency. Sociodemographic factors like age, sex, family history of psychiatric illness, and substance abuse did not show significant correlations with adjustment disorder. Overall, the study underscores the need for tailored resilience-building programs and mental health support to address the mental well-being of postgraduate medical residents and ensure their long-term the quality of patient care and well-being.

Clinical Significance

This study holds clinical significance by uncovering a substantial prevalence of adjustment disorder among postgraduate medical residents in Maharashtra, India, underscoring the pressing need for targeted mental well-being interventions. Given the well-established link between adjustment disorders and an increased risk of mental health issues, including suicide, among healthcare professionals, these findings emphasize the critical role of resilience-building programs in mitigating such risks. The study's insights are particularly pertinent in addressing the broader mental health challenges faced by resident doctors and promoting proactive strategies to enhance their psychological resilience, ultimately contributing to improved overall well-being and potentially preventing severe outcomes such as suicide.

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Conflict of Interest: Nil.

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