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Original Research Article

A Comparative Study of Burnout and Resilience in Clinical and Non-Clinical Postgraduates

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Abstract:

Background: Burnout is a pervasive and debilitating state that results from an unsustainable period of overwhelming stress. Burnout in doctors can lead to reduced care of patients, increased medical errors, and poor health. Resilience refers to the capacity of psychophysiological systems to recover from challenging conditions and allow the organism to efficiently return to its health maintenance equilibrium

Aim: To assess the resilience and burnout and to compare the resilience and burnout between clinical and non-clinical postgraduates.

Methodology: It is a cross sectional comparative study done in 142 medical postgraduates, between 25 and 35 years of age. 99 clinical postgraduates and 43 nonclinical postgraduates participated in the study. They were given the printed hard copies of the resilience (Connor Davidson resilience scale) and burnout (Copenhagen burnout inventory) scale. The mean scores of personal, work and client related burnout and total resilience score was compared between clinical and nonclinical postgraduates.

Results: Among the 99 clinical postgraduates, the mean scores of personal, work and client related burnout are 49.28, 47.99 and 42.17 respectively. Among the 43 non clinical postgraduates, the mean scores of personal, work and client related burnout are 43.99, 35.66 and 26.66 respectively. The mean values of work and client related burnout are statistically significant while the mean values of personal burnout are not statistically significant. The mean value of resilience in clinical and non-clinical postgraduates are 61.43 and 60.74 respectively which are not statistically significant. There is a weak positive correlation between working hours and burnout. There is a weak negative correlation between sleeping hours and burnout.

Conclusion: Our study showed that there was a higher prevalence of work and client related burnout in clinical postgraduates compared to nonclinical postgraduates, while there is no significant difference in prevalence of personal burnout. Also, there is no significant difference in resilience between the two groups. Furthermore, prospective, controlled studies are needed to investigate the risk factors for burnout and other mental health disorders among clinical doctors, as well as the effects of treatment.

Keywords: Burnout, resilience, Copenhagen, Connor Davidson, clinical, non-clinical, postgraduates.

Introduction

Burnout has been defined as a pervasive and debilitating state resulting from a period of overwhelming stress. It has been classically defined as an experience of physical, emotional, and mental exhaustion. In addition to exhaustion, burnout also has other components of depersonalization and feeling an absent sense of personal accomplishment.

Emotional exhaustion is the feeling of being emotionally overextended by one's work and its effect on functioning. Depersonalization includes unfeeling unempathetic impersonal response.[1] Burnout among medical professionals is not a new phenomenon, the term was coined by the psychologist Herbert Freudenberger in 1974. Burnout in doctors can lead to reduced care of patients, increased medical errors, and poor health. On the other hand, doctors in preclinical department have a lack of interaction with patients, with not much nonclinical professional work to boot, find the profession less gratifying which perhaps increase their stress level [2]

Resilience refers to the capacity of psychophysiological systems to recover from challenging conditions and allow the organism to efficiently return to its health maintenance equilibrium. Psychological resilience is mediated by factors such as early expe-

riences, genetics, coping mechanisms, optimism, social support, and learning. Physiological resilience may be mediated by genetics, neuroendocrine reactivity, sleep, environment, nutrition, etc. Psychological resilience mechanisms are crucial in humans because they can limit the duration and magnitude of chronic stress response [8] Improving resilience, therefore, can be expected to decrease the development and negative sequel of burnout [7]

Aim: To assess the resilience and burnout among the medical postgraduates in a tertiary care hospital.

Objectives:

- To assess the prevalence of burnout in medical postgraduates
- To measure the resilience in medical postgraduates
- To compare the resilience and burnout between clinical and non-clinical medical postgraduates

Methodology:

Participants and procedure: The current study is a cross sectional study done in postgraduate medical students of Andhra Medical College. Permission was taken from the college authorities for conducting the present study. Institutional Ethics committee of Andhra Medical College approved the study. Data was collected from a total of 142 postgraduate medical students of age group 25 to 35 years, doing post-graduation in Andhra Medical College, Visakhapatnam.

Postgraduates of first and second years were taken into the study. Final year postgraduates were not taken into the study as they were giving their university exam during the time of study and for the reason that they were not accessible. Both males and females were included in the study after explaining the purpose of the study and a written and valid informed consent was taken from them. Doctors who have already completed their postgraduation in Andhra Medical College are excluded from the study. Doctors who are not willing to give consent for the study are also excluded from the study. The study was conducted in the year 2023 for a period of 3 months from May 2023 to July 2023.

99 postgraduates of clinical department and 43 postgraduates of non-clinical department fulfilled the criteria and were enrolled in the study as two groups. The socio demographic details including name, age, gender, marital status, department, the year of their course, daily average working hours and sleeping hours were taken with the help of a structured proforma. Then the postgraduates were asked to fill the self - reported questionnaires, which include

I) Copenhagen burnout inventory (CBI scale): This is a valid and reliable self-assessment questionnaire used widely for the assessment of burnout. CBI consists of three scales measuring personal burnout, work-related burnout, and client-related burnout, for use in different domains. All three scales were found to have very high internal reliability. This has 19 questions in total - 6 questions for personal burnout, 7 questions for work related burnout and 6 questions for client related burnout. The individual score for each question ranges from 0 to 100 and the mean score of each scale of burnout also ranges from 0 to 100. The Cronbach's alpha for internal reliability are very high (0.85 – 0.87)

II) **Connor-Davidson resilience scale (CD RISC 25):** This is a 25 item self-report measure scale for the assessment of resilience. Each item ranges in score from 0 to 4. The total score is obtained by adding up all the 25 items, which gives a score that can range from 0 to 100. Lower scores indicate less resilience and higher scores indicate greater resilience. Although the CD-RISC is not intended to be a diagnostic instrument, we have found that low scores can also accompany clinical depression, anxiety and posttraumatic stress disorder. Although the general population score reflects a representative sample, in certain groups the mean score may be different, reflecting selection factors. The CD-RISC-25 consists of statements describing different aspects of resilience.

The scale incorporates items which measure hardiness (i.e. commitment/challenge/control) (items 5, 10, 11, 12, 22, 23, 24), coping (2, 7, 13, 15, 18), adaptability/flexibility (items 1, 4, 8), meaningfulness/purpose (items 3, 9, 20, 21), optimism (items 6, 16) regulation of emotion and cognition (items 14, 19), and self-efficacy (items 17, 25). In some cases, the items overlap more than one of these constructs. Connor and Davidson showed acceptable test-retest reliability for the full CD-RISC (r=0.87). The CD-RISC has demonstrated good reliability (α =0.88 and 0.89), test-retest reliability (0.87), and convergent and divergent validity in the development of the scale.

Once the postgraduates filled all the questionnaires, mean scores for each scale were taken from both the groups and comparison between the two groups of postgraduates was done. Burnout and resilience was analysed in both the groups individually and a comparative analysis between both the groups was done.

Statistical Analysis: Statistical analysis was done using Statistical Package for Social Sciences (SPSS) software version 21.0. Data was expressed as mean (standard deviation) for continuous variables and frequency (percentage) for categorical variables. Chi square test and

correlation analysis were done.

Results:

Demographic Profile: In the current study, 142 medical postgraduates of the age group 25-35 years were included. Of them, 99 postgraduates were from Clinical department with 45.5% males and 54.5% females (Table 1) with mean age of 27.03 and a standard deviation of 2.95 (Table 2). 43 postgraduates were from Non-clinical department with 34.9% males and 65.1% females (Table 1) with mean age of 28.19 and a standard deviation of 2.29 (Table 2).

There were 60 (42.3%) males and 82 (57.7%) females in total. Among them 27 (19.0%) were married and 115 (81.0%) were unmarried. Among the married, 9 postgraduates have 1 child and 4 postgraduates have 2 children and 14 postgraduates have no children. 76 postgraduates were in the first year (53.5%) and 66 (46.5%) were in the second year. 8 postgraduates were on regular medication (5.6%) while 134 (94.4%) were not on any medication (Table 3). In clinical group, 12 (12.1%) were married, while 87 (87.9%) were unmarried. 52(52.5%) are in the first year while 47 (47.5%) are in the second year. 4 (4.0%) are under regular medication while 95 (96.0%) are not under any medication (Table 4). In non-clinical group, 15 (34.9%) are married while 28 (65.1%) are unmarried. 24 (55.8%) are in the first year while 19 (44.2%) are in the second year. 4 (9.3%) are under regular medication while 39 (90.7%) are not under any medication. (Table 4).

Table 1: summarizes the gender distribution between both the groups.

Gender	Males	Females	Total
Clinical Department	45(45.5%)	54(54.5%)	99(100%)
Non Clinical Department	15(34.9%)	28(65.1%)	43(100%)

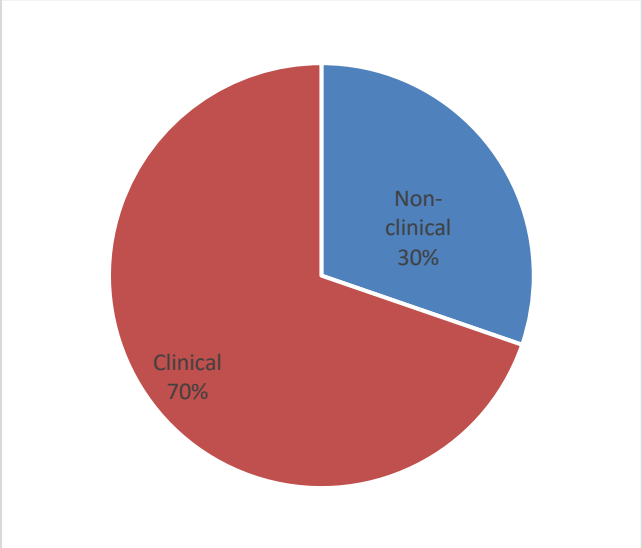

Figure 1: shows the percentage of postgraduates in clinical and non-clinical groups

Table 2: summarizes the mean age and standard deviation in both groups

	Department				P value
	Non-clinical		Clinical		
	Mean	Standard Deviation	Mean	Standard Deviation	
AGE	28.19	2.29	27.03	2.95	0.024

Table 3: shows the clinical and non-clinical departments taken into the study

Clinical	Non Clinical
Anaesthesia	Anatomy
Dermatology	Biochemistry
General medicine	Forensic medicine
General surgery	Microbiology
Obstetrics and gynaecology	Pathology
Ophthalmology	Pharmacology
Orthopaedics	Physiology
Otorhinolaryngology	Social and Preventive medicine

Paediatrics	
Psychiatry	
Pulmonary medicine	
Radiology	

Table 4: shows the number of postgraduates in each speciality

Specialty	Number of postgraduates
Anaesthesia	16
Dermatology	5
General medicine	11
General surgery	15
Obstetrics and gynaecology	8
Ophthalmology	8
Orthopaedics	4
Otorhinolaryngology	7
Paediatrics	7
Psychiatry	10
Pulmonary medicine	5
Radiology	3
Anatomy	3
Biochemistry	5
Forensic medicine	4
Microbiology	6
Pathology	7
Pharmacology	7
Physiology	6
Social and Preventive medicine	5
Total	142

Table 5: summarizes all the demographic variables

		Count	Column N %
Department	Non-Clinical	43	30.3%
	Clinical	99	69.7%
Sex	Male	60	42.3%
	Female	82	57.7%
Marital	Married	27	19.0%
	Unmarried	115	81.0%
Children	0	129	90.8%
	1	9	6.3%
	2	4	2.8%
Year	1	76	53.5%
	2	66	46.5%
Medication	No	134	94.4%
	Yes	8	5.6%

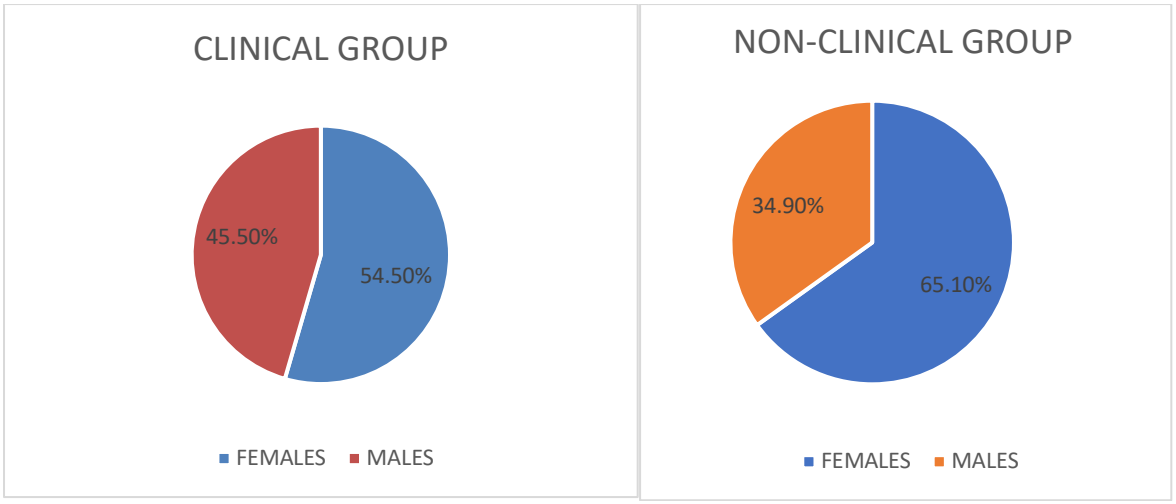

Figure 2: shows the percentage of males and females in both the study groups

Table 6: summarizes the demographic variables in both groups

		Department				P value
		Non-clinical		Clinical		
		Count	Column N %	Count	Column N %	
Sex	Female	28	65.1%	54	54.5%	0.241
	MALE	15	34.9%	45	45.5%	
Marital	Married	15	34.9%	12	12.1%	0.001
	Unmarried	28	65.1%	87	87.9%	
Children	0	36	83.7%	93	93.9%	0.049
	1	6	14.0%	3	3.0%	
	2	1	2.3%	3	3.0%	
Year	1	24	55.8%	52	52.5%	0.718
	2	19	44.2%	47	47.5%	
Medication	No	39	90.7%	95	96.0%	0.211
	YES	4	9.3%	4	4.0%	

Assessment and Comparison of Burnout:

For the assessment of burnout, a self-assessment questionnaire called the Copenhagen burnout inventory was used. This Questionnaire has 19 questions in total, 6 questions for personal burnout, 7 questions for work related burnout and 6 questions for client related burnout.

The burnout is assessed under three domains namely personal, work and client related burnout. The mean scores of all the three domains of burnout were calculated for each individual in both clinical and non-clinical groups. Then the mean values of burnout of all 3 domains are calculated separately for clinical and non-clinical groups. In clinical group, the personal burnout has a mean value of 49.28 with standard deviation of 19.06. The work-related burnout has a mean value of 47.99 with standard deviation of 18.52. The client-related burnout has a mean value of 42.17 with standard deviation of 20.04.

In non-clinical group, the personal burnout has a mean value of 43.99 with standard deviation of 18.80. The work-related burnout has a mean value of 35.66 with standard deviation of 20.09. The client-related burnout has a mean value of 26.66 with standard deviation of 15.55

On comparing the burnout between clinical and non-clinical groups, there is no statistically significant difference between two groups in terms of personal burnout (p value is 0.219). But client and work related burnout is more in the clinical group compared to non-clinical group and the difference is statistically significant (p value <0.0001) (Table 7).

Table 7: shows the comparison of burnout between clinical and non-clinical groups

	Non Clinical		**Clinical**		**P Value**
	Mean	**SD**	**Mean**	**SD**	
Personal	43.99	18.80	49.28	19.06	0.219
Work	35.66	20.09	47.99	18.52	<0.0001
Client	26.66	15.55	42.17	20.04	<0.0001

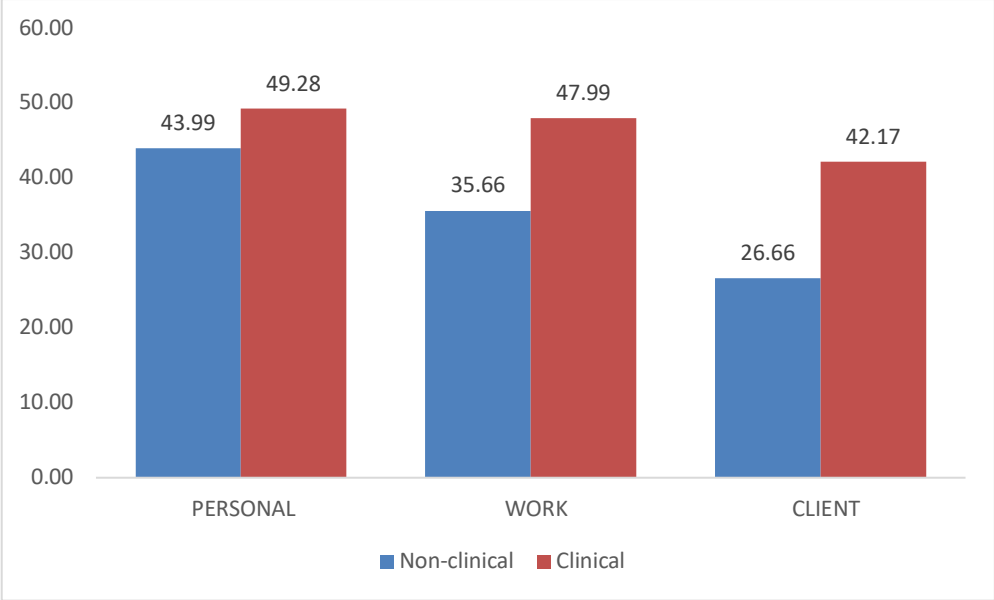

Figure 3: shows the comparison of burnout between clinical and non-clinical groups in the domains of personal (p value – 0.219), work (p value <0.0001) and client (<0.0001) related burnout

Assessment and Comparison of Resilience:

For the assessment of resilience, a self-assessment questionnaire called Connor Davidson resilience scale was used. It consists of 25 questions and each question has a score from 0 to 4.

The total score ranges from 0 to 100. In our study, the total resilience score was calculated for all individuals in both the groups. Then the mean resilience score was calculated for both the groups separately. In clinical group, the mean resilience score was 60.74 with standard deviation of 15.03 where as in the non-clinical group, the mean resilience score was 61.43 with a standard deviation of 12.65. But the results were not statistically significant (p value – 0.912). (Table 8).

Table 8: shows the comparison of resilience between clinical and non-clinical groups.

	Non Clinical		Clinical		P Value
	Mean	SD	Mean	SD	
Resilience	60.74	15.03	61.43	12.65	0.912

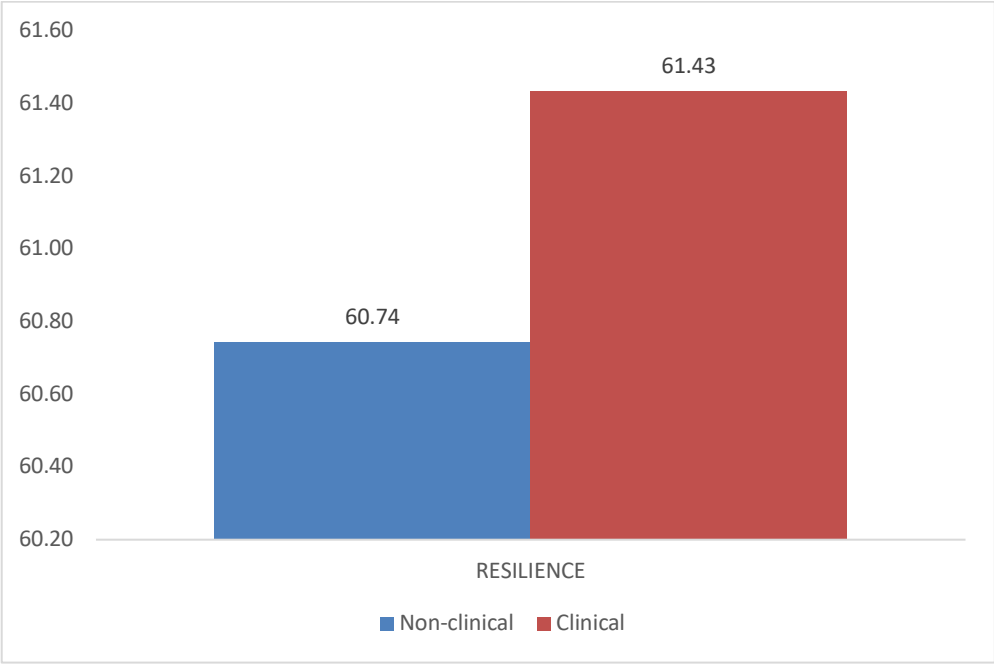

Figure 4: shows the comparison of resilience in clinical and non-clinical groups (p value – 0.912)

Table 9: shows the mean scores of resilience in terms of socio demographic variables.

		Resilience		P value
		Mean	Standard Deviation	
Sex	Female	59.09	13.27	0.025
	Male	64.15	13.04	
Marital	Married	61.78	16.72	0.812
	Unmarried	61.10	12.53	
Children	0	61.09	12.86	0.681
	1	60.67	20.77	
	2	67.00	11.55	
Year	1	59.88	13.10	0.2
	2	62.77	13.60	
Medication	No	61.36	13.68	0.629
	Yes	59.00	5.95	

In terms of socio-demographic variables, the mean score of resilience in males is 64.15 with standard deviation of 13.27 while the mean score of resilience in females is 59.09 with standard deviation of 13.27 and the difference is statistically significant (p value – 0.025). The mean score of resilience in married postgraduates is 61.78 with SD of 16.72, while in unmarried postgraduates is 61.10 with SD of 12.53 (p value- 0.812). The first year postgraduates have a mean resilience score of 59.88 with SD of 13.10 while the second year postgraduates have a mean resilience score of 67 with SD of 13.60. The mean resilience score of postgraduates who are on regular medication is 37.78 with SD of 20.20 while it is 32.36 with SD of 17.93 in those who are not on any regular medication. (Table 9)

Correlation of Working and Sleeping Hours with Burnout: In the non-clinical group, the mean number of working hours is 8.33 with SD of 0.75 and the mean number of sleeping hours is 7.26 with SD of 0.88. In the clinical group, the mean number of working hours is 8.62 with SD of 1.20 and the mean number of sleeping hours is 7.04 with SD of 0.92. There is no statistical difference in number of working hours between clinical and non-clinical groups (p value - 0.194). Also, there is no statistical difference in number of sleeping hours between clinical and non-clinical groups (p value - 0.148). (Table 10)Spearman's correlation was used to find out the correlation between working hours and burnout and also between sleeping hours and burn out. As per the results, there was a statistically significant weak positive correlation between working hours and burnout in all the 3 domains. And there was a statistically significant weak negative correlation between sleeping hours and burnout in all the 3 domains. The correlation coefficient of working hours and personal, work and client related burnout are 0.272, 0.363 and 0.296 respectively. The correlation coefficient of sleeping hours and personal, work and client related burnout are -0.366, -0.342 and -0.366 respectively. (Table 11).

Table 10: shows the mean number of working hours and sleeping hours in clinical and nonclinical postgraduates

Correlations					
			Work	Personal	Client
Spearman's rho	Working Hours	Correlation Coefficient	.363**	.272**	.296**
		P value	<0.0001	0.001	<0.0001
	Sleeping Hours	Correlation Coefficient	-.342**	-.366**	-.224**
		P value	<0.0001	<0.0001	0.007

Table 11: shows the correlation between working and sleeping hours and burnout

	Department				P Value
	Non-Clinical		Clinical		
	Mean	Standard Deviation	Mean	Standard Deviation	
Working Hours	8.33	0.75	8.62	1.20	0.194
Sleeping Hours	7.26	0.88	7.04	0.92	0.148

Discussion

The purpose of this study is to compare the burnout and resilience between clinical and non-clinical postgraduates.

In this cross sectional study, ninety nine clinical and forty three non-clinical postgraduates were first analysed for their burnout scores in three domains and then they were compared between the groups. Similarly resilience score was calculated for each

group separately and then the scores were compared between the two groups. The study results showed that the work and client related burnout is more among clinical postgraduates compared to nonclinical postgraduates which is consistent with previous studies done on doctors in Pune, Maharashtra by Pooja V, Khan A, Patil J et al, 2021[2] The higher burnout rates are due to factors like depersonalization, lack of personal accomplishment and emotional exhaustion. The other factors like academic, clinical, social and family stressors also play a greater role in causing burnout. In a study by Chandan et al, the results showed that 92.11% of postgraduate students from clinical departments had stress and 39.47% had burnout [3]

In a study by Nastaran Maghbouli et al, the results showed that 66.3% of residents in surgical department and 71.8% of residents in medical department had burnout where as 58.6% of residents in para clinical department had burnout which is consistent with our study [4]

In an Indian study by Khasne RW et al, it was shown that the female health care workers experience more personal and work related burnout compared to males. In our study there was no significant gender difference [5]

The resilience scores showed no difference between the two groups which is not consistent with the study done by Pooja V et al[2] Also the mean resilience score in both groups is on the higher side (>50). This may be due to the presence of protective factors like easy temperament style, intellectual and cognitive skills, self-awareness, optimism, productivity with dedication and commitment.

A study on resilience conducted in UK among doctors by R Scott McCain et al showed that despite the doctors had higher resilience, they also had higher levels of burnout, which is in line with our study [6]

Conclusion:

The conclusion of this study is that there is higher prevalence of burnout in clinical doctors and also, they have higher rates of work and client related burnout compared to non-clinical doctors. The increasing trend of burnout causes negative impact on both doctors and patients. Therapy sessions should be included for doctors for reducing the prevalence of burnout. This includes coping skills, personal coping strategies, managing expectations, seeking help, team building, and managing conflicts. Among the personal coping strategies, adaptive responses like exercise, sleep, music, talking with friends/family should be encouraged, while maladaptive responses like isolation, over eating or poor diet, alcohol abuse should be discouraged. Teaching mindfulness technique is also essential in preventing burnout. One of the important strategies for overcoming burnout is to build resilience which is already on the higher side in both clinical and non-clinical doctors.

Limitations:

1. This study was done using subjective self-reported questionnaires, which may be susceptible to information bias and so our results may not be able to be generalized. However, self-report questionnaire remains the most widely used assessment tool in large-scale surveys.
2. Another drawback is the cross sectional design of the study which fail to determine the temporal relationship between burnout and work related stresses.
3. The limited sample size and also from a single tertiary care hospital could add to the bias.
4. The final year postgraduates were not taken into the study which may also play a role in bias of results.

Future Recommendations:

The present study found out that burnout and work-related stress are common in young doctors. The findings from this study will help to plan therapeutic programs and research on possible ways to reduce stress and burnout in the workplace for resident doctors. Also, more prospective, controlled studies were needed to investigate the risk factors for burnout and other mental health disorders among doctors. Easily accessible and effective mental health services could be established to provide psychological support to the doctors who are in need.

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