ORIGINAL ARTICLE

Prevalence of Anxiety and Factors Associated with Anxiety among Resident Doctors in a Tertiary Care Teaching Hospital in South Eastern Rajasthan

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Abstract:

Medical residency has been recognized as a period during which residents in training face a series of extreme emotional situations, such as long working hours, sleep deprivation, lack of autonomy and constant contact with human sufferings leading to anxiety. Anxiety in residents is an important problem because of the potential risk it imposes on individual health and medical care. The aim of this study is to estimate the prevalence of anxiety and identify the associated risk factors associated with anxiety among resident doctors. A cross-sectional study was conducted in a tertiary care teaching hospital. 200 resident doctors who fulfilled the inclusion criteria for the study were included in the study. Data was analysed by using SPSS version 21 software. Statistical analysis included chi-square-test, correlation, multivariate analysis, unpaired t test.

Overall prevalence of anxiety in resident doctors was 25.5 %, out of them 21.5% were suffering from mild anxiety and 4% were suffering from moderate anxiety. Mean anxiety score was more in female residents, General Medicine resident doctors, clinical speciality, surgical speciality, first year resident doctors and resident doctors who reported less sleeping hours and more working hours. This study throws light on the psychological problem like anxiety among resident doctors. The factors associated with anxiety were female gender, younger age, unmarried marital status, living single, sleep deprivation, prolonged working hours and first year of residency.

Keywords: Anxiety; Resident doctors; Tertiary care hospital.

Introduction:

Anxiety is a 'normal' phenomenon, which is characterized by a state of apprehension or unease arising out of anticipation of danger. Normal anxiety becomes pathological when its severity is out of proportion to the threat of danger and when it causes significant subjective distress and/or impairment in functioning of an individual. Anxiety is the commonest psychiatric symptom in clinical practice and anxiety disorders are the most prevalent psychiatric syndrome, nearly one-fifth (17 percent) of adults report a lifetime history of one of the major anxiety disorders, and 1 in 10 suffer from a current anxiety disorder. Its course is variable but tends to be fluctuating and chronic. Anxiety is associated with somatic and autonomic component. The feeling of dread and apprehension are accompanied by restlessness, worrying thoughts, irritability. The psychological or autonomic symptoms must be primarily the manifestations of anxiety. Symptoms of anxiety includes feelings of nervousness, trembling, muscular tension, sweating, light headedness, palpitations, dizziness, epigastric discomfort, worries about future misfortunes, feeling "on edge", trembling, inability to relax, and autonomic hyperactivity. GAD is characterized by an uncontrollable lasting greater than 6 months, and causing significant impairment. The worry must be associated with at least three of the following six symptoms: restlessness or feeling keyed up or on edge; being easily fatigued; difficulty concentrating or mind going blank; irritability; muscle tension; or sleep disturbance. Anxiety disorder is common in resident doctors which is usually associated with stressful working conditions, particularly at work places. An Indian study conducted by Dave S. et al. (2018)[1] revealed that prevalence of anxiety was 36.58% in resident doctors. Various factors contributing to anxiety among resident doctors are time pressure to complete their assignments and others works; preparations for examinations; difficult patients; work/home conflicts. Raised level of anxiety among residents can lead to physical and emotional ailments, poor performance, absenteeism and negativity in terms of attitudes and behaviours.[2]

Therefore, it becomes extremely important to study the magnitude of this problem among resident doctors, so that timely and appropriate intervention can be done in this regard. A healthy resident delivers healthy health services. So, any intervention to improve mental health of residents will further improve the work capacity and will further strengthen the health system. So, this study is aimed to assess the prevalence of anxiety and it's associated factors among the resident doctors in a tertiary care teaching hospital in south eastern part of Rajasthan so that steps can be taken towards solving this issue in our setup.

Aims and Objectives : 1.To study Prevalence of anxiety among resident doctors.

2. To study factors associated with anxiety among resident doctors.

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Materials and methods:

Study design: Cross-sectional study.

Study participants: The study participants consisted of consenting 200 resident doctors.

The present study was conducted in department of Psychiatry of tertiary care teaching hospital. Before starting the study, permission & approval from institutional ethical committee was taken.

Inclusion criteria: Resident doctors who were doing 3 year post-graduate course in clinical, non-clinical and surgical departments in tertiary care teaching hospital and who gave consent for study.

Exclusion criteria: Resident doctors who were suffering from any major medical, surgical and psychiatric illness; resident doctors who are working on urgent temporary basis and resident doctors who are doing super-specialization and diploma.

All the resident doctors were evaluated on especially designed proforma that includes identification data, socio demographic details, factors associated with anxiety and clinical profile of the participants (including history of psychiatric, medical, surgical illness etc). Severity of anxiety was assessed using Depression Anxiety Stress Scale (DASS).

Statistical analysis: Statistical analysis was done using SPSS version 21. Data are expressed in term of proportion or percentage, mean (+ Standard Deviation). Comparison of variables was tested using Chi square test. Pearson correlation test was used to examine the relation between different continuous variables. P value <0.05 was considered significant.

Results & Discussion:

The age of resident doctors was between 24 years to 42 years and majority (55.5 %) of residents were below 30 years of age. The mean age of resident doctors was 30.40 $\pm$ 3.04 years. Among them 72.5% respondents were male and 27.5% were female. Majority of residents (59.5% were married. Likewise majority of resident doctors i.e. 68% were living single. Majority of residents were from hindu community. It was found that majority of resident doctors (77.0%) belonged to urban area and only 23 % belonged to rural area (Table 1).

A similar kind of study carried by Dave S. et al.[1] among resident doctors included 462 resident doctors. 91 % were aged below 30 years, 54.3 % were men and 36.1 % were either married or committed.

In the present study, when resident doctors were evaluated on Depression Anxiety Stress Scale (DASS), it was found that prevalence of anxiety in resident doctors was 25.5%. If we further classify, it was found that 21.5% resident doctors were suffering from mild anxiety & 4% were suffering from moderate anxiety and none of the resident doctors were found to be suffering from severe anxiety and extreme severe anxiety, (Table 2 & Figure 1).

A study conducted by Kelly L. et al. (2005)[3] had shown 12% prevalence of generalized anxiety among resident doctors. Similarly, a study by Nisar K. et al. (2012)[4] revealed that the prevalence of generalized anxiety in resident doctors was 26%;

Table 1. Distribution of residents according to sociodemographic profile and factors associated with anxiety.

Variable		N	%
Age	≤ 30	111	55.5
	>30	89	44.5
Sex	Male	145	72.5
	Female	55	27.5
Domicile	Urban	154	77.0
	Rural	46	23.0
Marital status	Married	119	59.5
	Unmarried	81	40.5
Religion	Hindu	190	95.0
	Muslim	9	4.5
	Other	1	0.5
Living with family	N=64 i.e. 32%		32
	NO	136	68
Sleeping hours	< 6	54	27
	6 – 8	112	56
	> 8	34	17
Branch	Clinical	180	90.0
	Non-clinical	20	10.0
Speciality	Medical	136	68.0
	Surgical	64	32.0
Working hours	< 8	36	18.0
	8 – 12	106	53.0
	> 12	58	29.0
Year of residency	1st yr.	80	40.0
	2nd yr.	58	29.0
	3rd yr.	62	31.0

Table 2. Distribution of resident doctors according to severity of anxiety (Depression anxiety stress scale).

Severity	N=200	%
Normal anxiety (0-7)	149	74.5
Mild anxiety (8-9)	43	21.5
Moderate anxiety (10-14)	8	4.0
Severe anxiety (15-19)	0	0
Extreme severe anxiety (>20)	0	0

out of them, 18% had mild anxiety and 8% had moderate anxiety. Atif K. et al. (2016)[5] conducted a study among resident doctors using Hospital Anxiety Depression Score Inventory (HADS) and revealed that 34% doctors had mild to moderate anxiety while 7.2% had severe anxiety. Similar finding was also reported by Dave S. et al. (2018)[1] who conducted a study using similar Depression Anxiety Stress Scale (DASS) which revealed that prevalence of anxiety was 36.58% in resident doctors ,out of which 8.66 % had mild anxiety, 12.12 % had moderate anxiety, 8.66 % had severe anxiety and 7.14% had extreme severe anxiety.

If we correlate the anxiety with age, it was found that anxiety was negatively correlated with age that means as age increases, score of anxiety decreases (r=-0.121). It was found that resident doctors of age group ≤ 30 years were having more anxiety score than the resident doctors of age group > 30 year (7.07 vs 6.88) and this was statistically significant (Table 3a). Likewise the prevalence of anxiety was higher (27.02%) among age group ≤ 30 years than age group >30 years (23.60%) but this difference was not statistically significant (p> 0.05) (Table 3b). This finding can be explained by the fact that older resident doctors have better tolerance due to better emotional maturity, better coping

Table 3a. Correlation between various factors with anxiety.

Factors		N=200	%	Mean anxiety ± SD	Correlation
Age	≤ 30	111	55.50	7.07 ± 1.38	-0.121*
	> 30	89	45.50	6.88 ± 1.58	
Sex	Male	145	72.50	6.88±1.40	0.118**
	Female	55	27.50	7.27±1.63	
Marital status	Married	119	59.50	6.88 ± 1.48	0.069
	Unmarried	81	40.50	7.16 ± 1.45	
With family	YES	64	32.00	6.89 ± 1.61	0.046
	NO	136	68.00	7.04 ± 1.40	
Branches	Clinical	180	90.0	7.05 ± 1.42	0.122*
	Non-clinical	20	10.0	6.45 ± 1.85	
Specialist	Medical	136	68.0	6.97 ± 1.66	0.030
	Surgical	64	32.0	7.03 ± 0.94	
Alcohol Intake	YES	53	26.5	7.00 ± 1.81	0.004
	NO	147	73.5	6.98 ± 1.33	
Smoking Habit	YES	21	10.5	7.09 ± 1.34	0.025
	NO	179	89.5	6.97 ± 1.49	
Sleeping hours	< 6	54	27.0	7.17 ± 1.28	-0.172**
	6 – 8	112	56.0	6.98 ± 1.62	
	> 8	34	17.0	6.74 ± 1.21	
Working Hours	< 8	36	18.0	6.11 ± 1.55	0.090
	8 – 12	106	53.0	7.09 ± 1.43	
	> 12	58	29.0	7.34 ± 1.29	
Year or residency	1st yr.	80	40.0	7.16 ± 1.49	0.074
	2nd yr.	58	29.0	6.83 ± 0.976	
	3rd yr.	62	31.0	6.91 ± 1.79	

Table 3b. Distribution of anxious resident doctors according to various factors.

|			Anxious		Non-anxious		
		N=200	N	%	N	%	
Age	≤ 30	111	30	27.02	81	62.98	X2 = 0.306 P > 0.05
	> 30	89	21	23.60	68	76.40	
Sex	Male	145	31	21.37	114	79.63	X2 = 4.713 P < 0.05
	Female	55	20	36.36	35	63.36	
Marital status.	Married	119	26	21.84	93	79.16	X2 = 2.062 p>0.05
	Unmarried	81	25	30.86	56	59.14	
With family	YES	64	15	23.44	49	76.56	X2 = 0.211 P > 0.05
	NO	136	36	26.47	100	73.53	
Speciality	clinical	180	46	25.55	134	74.45	X2 = 0.003 P > 0.05
	Non-clinical	20	5	20.0	15	80.00	
speciality	Medical	136	34	25.00	102	75.00	X2 = 0.056 P >0.05
	Surgical	64	17	26.56	47	64.44	
Alcohol intake	YES	53	16	30.18	37	69.81	X2 = 0.834 P > 0.05
	NO	147	35	23.80	112	76.20	
Smoking Habit	YES	21	7	17.39	14	82.61	X2 = 0.899 P > 0.05
	NO	179	44	27.89	135	72.11	
Sleeping hours	< 6	54	15	27.78	39	72.22	X2 = 3.196 p > 0.05
	6 – 8	112	29	25.89	83	74.11	
	> 8	34	7	20.58	27	79.42	
Working hours	< 8	36	3	8.33	33	91.67	X2 = 4.846 p= >0.05
	8 – 12	106	29	27.36	75	72.64	
	> 12	58	19	32.76	39	67.24	
Year or residency	1st yr.	80	26	32.50	54	67.75	X2 =2.374 p= >0.05
	2nd yr.	58	9	15.51	49	84.49	
	3rd yr.	62	16	25.80	46	74.20	
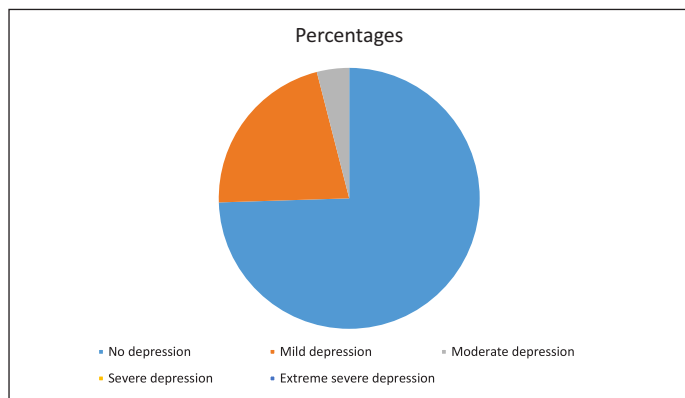
Figure 1. Distribution of resident doctors according to severity of anxiety (Depression anxiety stress scale).

mechanisms and more work experience. Dave S. et al.[1] revealed that prevalence of anxiety was found to be higher in >30 years old residents.

Among male and female residents, female residents reported more mean anxiety score than male residents (7.27 vs 6.88) (Table 3a). Similarly the prevalence of anxiety was higher in female residents (36.36%) than males (21.37%) and this difference was statistically significant (Tables 3b). Results similar to our study were reported by Monsef N. A et al.[6] (2015) where prevalence of anxiety was found to be statistically non significant higher in female resident doctors (58.6% vs 50.6%). Similarly, Atif K. et al. (2016)[5] revealed significantly higher prevalence of mild to moderate anxiety in female residents

(53.33%) as compared to male residents (17.31%).

The higher prevalence of anxiety in female residents may be due to additional responsibilities of family, child care, and societal norms apart from hospital work.

In this study, 10% residents were from non clinical speciality and rest 90% residents belonged to clinical speciality. When we compared mean anxiety score and prevalence of anxiety , it was higher in clinical branches than non-clinical branches (Table 3a & 3b). This could probably be due to the fact that clinical residents have to directly deal with patients, patient's life and their caretakers. The moral responsibility also increases as they are directly linked with treatment of patient. Dave S. et al. (2018)[1] also revealed that prevalence of anxiety was higher among clinical specialties (clinical: 29.8%; nonclinical: 20.4%).

If we correlate the anxiety with sleeping hour, it was found that anxiety was negatively correlated with sleeping hour that means as sleeping hours increase score of anxiety also decreases and this correlation was statistically significant (Table 3a). On comparing mean anxiety score with sleeping hours, it was found that it is maximum in those who reported sleeping hour <6 hr./day (7.17) followed by 6 to 8hr./day (6.98) and least in those with sleeping > 8 hr./day (6.74). (Table 3a). Similarly prevalence of anxiety was highest in those who reported sleeping hour < 6 hr. (27.78%) followed by 6 to 8hr./day (25.89%) and least in those with sleeping > 8 hr./day (20.58%) (Table 3b). This maybe because those having lesser time for sleep are not able to relax and rest properly and adequately leading to high anxiety.

When we compare mean anxiety score of resident doctors, according to year of residency, it was maximum (7.16) in 1st year

Table 4. Comparison of mean anxiety score according to speciality.

Branch	N=200	%	Mean anxiety
Anesthesia	28	14.0	7.18
Biochemistry	3	1.5	3.66
General –Medicine	33	16.5	7.60
General – Surgery	18	9	6.99
Microbiology	5	2.5	5.80
Obs. & gyanecology	11	5.5	7.54
Opthalmology	6	3	7.33
Orthopaedic	22	11	6.57
Otorino-Laringology	7	3.5	7.04
Paediatrics	10	5	7.50
Pathology	12	6	7.50
Psychiatry	12	6	6.17
Radiology	12	6.0	6.42
Respiratory Medicine	11	5.5	6.90
Skin & VD	10	5	6.40

followed by 3rd year (6.91) resident then 2nd year (6.83) (Table 3a). Prevalence of anxiety was seen maximum in 1st year (32.50%) followed by 3rd year (25.80%) and 2nd year resident doctors (15.51%) respectively. Higher prevalence of anxiety in first year residents may be due to the fact that they have to work in completely unfamiliar system with totally different routine and lifestyle. When mean anxiety score of 1st year and 2nd year resident doctors was compared, this difference was not statistically significant. Likewise the difference between mean anxiety of 3rd year and 2nd year resident doctors was also not statistically significant. Also the comparison of mean anxiety score among 1st year and 3rd year resident doctors was not statistically significant.

In this study majority (68%) of resident doctors were from medical speciality and 32% of all residents were from surgical speciality. Surgical specialities had more score than medical specialities (Surgical: 7.03 Medicine:6.97) and this difference was not statistically significant (Table 3a). Similarly the prevalence of anxiety was higher among surgical specialities (26.56%) than medical specialities (25.00%) but this difference was not statistically significant (Table 3b). This could be because surgical residents have to do many operative procedures, postoperative emergencies and dealing with complications during surgery.

Likewise in present study no significant difference was found in prevalence and mean score of anxiety on the basis of marital status, living with family, alcohol intake, smoking habit and working hours.

As per the available literature, anxiety level varies in resident doctors according to various specialties. In our study maximum mean anxiety was present in General-Medicine (7.60), followed by Obstetrics-Gynecology (7.54) & Pediatrics (7.50) respectively. Minimum mean anxiety scores was present in biochemistry (3.66). (Table 4). Monsef N. A et al. (2015)[6] reported that prevalence of anxiety was more in General Surgery resident doctors. A study by Kashif N. et al. (2017)[4] revealed that average anxiety score was (8.05). The anxiety score was maximum (15.7) in ENT, 12.0 in Pathology, 8.5 in Medicine, 7 in Basic Medical Sciences, 5.7 in Ophthalmology, 3.61 in Surgery, 3.3 in Radiology.

Conclusion:

In this study we tried to assess prevalence and factors related to anxiety in medicos undergoing their postgraduate training. The dual responsibility of training themselves and treating patients is reflected by the high prevalence of anxiety among residents. Younger age, female gender, unmarried, living single, first year of residency, sleep deprivation, more working hours, specialities like General Medicine are found to be associated with more anxiety. Significant correlation with anxiety was found with age, gender, branch and sleeping hours.

Limitations and strength of study: Sample size was small enough and from a single medical college giving questionable generalization of study. Further studies should assess more specific work conditions leading to anxiety such as relationships with co-workers and supervisors and autonomy. Longitudinal design and educational intervention, if possible would have been a better future option.

One of the strength of this study is that most of the studies are focussed on clinical branches only but we have also studied non clinical branches.

Implications of study: Considering the magnitude of this problem, measures are to be taken to halt the escalating anxiety among residents. Results from this study will be useful for planning and management of curriculum of residency programme. Most of the stressors can be modified easily to prevent burnout among resident doctors. Medical colleges should take care of mental health and well being of resident doctors and ensure that resident doctors should have adequate rest, weekly day off, time for recreational and social activities, regular sessions of yoga & meditation, availability of counselling and support.

Conflicts of interest: There are no conflicts of interest.

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