

Measuring Anger in Medical, Dental and Paramedical Post-graduate Students of Sumandeep Vidyapeeth, Vadodara, Gujarat, India: A Cross-Sectional Study

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/INDJ/2021/v16i230170

Editor(s):

(1) Dr. Takashi Ikeno, National Center of Neurology and Psychiatry, Japan.

Reviewers:

(1) Frederic, Pérez-Álvarez, Hospital Universitari de Girona Doctor Josep Trueta, Spain.

(2) Ilgaitis Prūsis, Riga Technical University, Latvia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/71811>

Original Research Article

Received 24 May 2021
Accepted 28 July 2021
Published 31 July 2021

ABSTRACT

Background: Medical, dental and paramedical post-graduate students are an essential part of multi-specialty teaching institutes where resident doctors are the ones who come in the first contact with the patients. In this study emotion of residents was measured through their anger. Anger has negative impacts on daily life, doctor-patient relationships. Throughout the post-graduation program, students experience stress and burn out.

Aim: The study was conducted with an aim to measure the level of anger amongst the post-graduate medical, dental and paramedical students at Sumandeep Vidyapeeth University, Vadodara, Gujarat, India.

Materials and Methods: After obtaining informed and written consent, 349 subjects were assessed through a semi-structured proforma and clinical anger scale to assess the level of anger. It was a cross-sectional single interview study. Enrolment of participants done for the tenure of 1 year from 2013 to 2014 and results assessed. At the end of the study, all CAS (**clinical anger scale**) parameters compared medical, dental and paramedical groups. Data analyzed through the SPSS

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v16 software package; One way ANOVA and independent t-test was applied.

Results: The overall anger was higher among post-graduate students. Post-graduate medical students had higher anger compared to paramedical post-graduate students. Female participants scored significantly lower on clinical anger compared to male participants. Post-graduates doing MD/MS were having significantly higher anger than post-graduates of MDS ($p=0.002$), MPT (0.000). Married participants scored lower on clinical anger compared to unmarried participants.

Conclusion: Overall anger is high in medical post-graduate students which have negative implications on doctor-patient relationships and patient care can get compromised so it is necessary to find the ways through which we can lower the anger.

Keywords: Clinical anger scale; resident doctors; frustration; emotions.

ABBREVIATIONS

ANOVA	: Analysis of Variance
CAS	: Clinical Anger Scale
CRF	: Case Report Form
MD	: Doctor of Medicine
MDS	: Master of Dental Surgery
MPT	: Master of Physiotherapy
MS	: Master of Surgery
M.Sc	: Master of Science
N	: Number
SPSS	: Statistical Package for the Social Sciences
Sr no	: Serial Number

1. INTRODUCTION

Anger is a complex emotion and occurs as a result of an interaction between one or more eliciting events, the individual's pre-anger state, appraisals of the eliciting events, and available coping resources. When anger and anxiety are chronic, people are more susceptible to a range of diseases [1]

Perceived abuse or harassment during residency (post-graduation) has a negative impact on residents; health and well-being. Postgraduate medical and paramedical students are the ones who come in first and the direct contact with the patients and they are exposed to a great level of stress and burden for patient care as well as academic performance. They have to bear the stress and manage their professional as well as personal life. A high level of dropout rate has also been observed during the post-graduation [2]

The modern age is 'The Age of Stress' and stress-related diseases, which pose a serious challenge to not only medical professionals but to the whole concerned diasporas. Despite the leaps and bounds in medical sciences, we are surrounded by a very silent but dangerous foe, lifestyle diseases [3]

It is usually observed that medical and paramedical students undergo tremendous stress during various stages of their MBBS course [4] One of the causes of stress has been identified is higher medical student year. Another cause is not being able to indulge in recreational and social activities. Increase in workload and the pressure of learning professional knowledge and skills was another factor that was cited to contribute to stress. Exams and continuous assessments have also been considered as an important factor that contributes to psychological distress in medical students. Elevated stress levels can affect tasks that require divided attention, working memory, retrieval of information from memory, and decision making [5] A student under optimal stress does bring out his or her best; however, extremes of stress can result in stress-induced disorders like depression, insomnia, and hypertension, hence deteriorating performance [6] The occurrence of stress and stress-related anxiety and depression in medical students, trainees, and qualified physicians is being increasingly reported in the literature. Stress is not only a risk factor for several chronic diseases including hypertension, diabetes, and coronary artery disease; it precipitates several mental ailments, and the impact on stress in the medical work environment affects healthcare delivery as well[7]

Several studies [4,8,9] in recent years focused on the incidence of stress and stress-related illnesses such as anxiety and depression among students, trainees, and qualified physicians. Indeed, some research indicates the unique academic challenges of medical studies, the rigor of the educational program, and emotionally tense experiences, such as dealing with illness, disease, and dying that make medical students more vulnerable to stress and anxiety than students of other disciplines [7] Up to one-third of practicing clinicians could be expected to be suffering from burnout if assessed cross-sectionally [10]

Clinical anger was conceptualized as a syndrome that consists of several symptoms that can vary in their intensity and strength and that can produce severe health risks [11]. The chronic, pervasive aspects of clinical anger were presumed to include affective, cognitive, physiological, and behavioral manifestations (e.g., fatigue, irritability, rage). Individuals who are high in clinical anger were expected to report affective feelings of anger about their present life, themselves, their future, others, and things in general. In addition, it was anticipated that they would report that their clinical anger interferes with their social relations, their ability to make decisions, and their capacity to pursue effective work relations and accomplishments. In addition, people afflicted with this affective disorder were expected to report appetite, health, thinking, and sexual interference from their syndrome of clinical anger. In brief, clinical anger was defined as a syndrome that consists of debilitating, global, and chronic symptoms of anger and includes affective (e.g., rage, irritability), cognitive decision interference, physiological (e.g., fatigue), social (e.g., interpersonal dysfunctions), and behavioral (e.g. ineffective work relations and accomplishments) manifestations [12].

A total of 305 medical residents, of both genders, of different specialties, from clinical and surgical areas of a Brazilian university hospital, were evaluated using the following standardized self-report instruments: Burnout Syndrome Inventory, Social Skills Inventory, and the Patient Health Questionnaire-4. This study was aimed to verify the rates of burnout, anxiety, and depression presented by resident physicians, as well as the associations of these problems with social skills, as potential protective factors. High rates of burnout and mental health problems were verified and social skills were negatively associated with burnout dimensions such as emotional exhaustion, emotional detachment, and dehumanization, but positively associated with personal accomplishment. [13]

A study was conducted between January 2008 and August 2009 on 150 medical post-graduate students by the psychiatry department of a tertiary care medical hospital in Mumbai. Subjects were assessed randomly through semi-structured proforma and various scales, including the Emotional Quotient Self Assessment Checklist, Multi-Dimensional Emotional Empathy, and Clinical Anger Scale. This study aimed to assess emotional intelligence focusing specifically on empathy, study the level of anger,

and correlate the level of anger with (a) EI and (b) empathy in medical post-graduates. No correlation was found between age and clinical anger. 10.6% of subjects reported clinical anger in a range of moderate to severe on CAS. [14]

There is a paucity of studies in the Indian setting that has focused on post-graduate medical and paramedical students' psych. They are an integral part of any medical teaching institute and their health can have an impact on patient care as well as their own life. Anger is one of the dangerous aspects of life which can harm anyone including medical and paramedical professionals as well as students.

That is why there is a need to understand the level of anger among different medical and post-graduate medical students so that we can help them to cope with that anger and it can help to improve patient care.

During the residency program, postgraduate students undergo a great level of stress which has a negative impact on the quality of patient care and their coping abilities. The need for this study emerged to identify how medical and paramedical postgraduate students go through burnout during their 2 or 3 years of program and how can we help them to overcome from the burden and how they themselves can help them and we can have an idea about the kind of intervention required to reduce their burden and improve their life as well as patient care as they are the upcoming new professionals in the growing world as the time passes by. The study was conducted with an aim to study the level of anger amongst post-graduate students of Sumandeep Vidyapeeth, Vadodara, Gujarat, India.

2. MATERIALS AND METHODS

This was a cross-sectional, single interview study conducted on medical, dental and paramedical post-graduate students of Sumandeep Vidyapeeth University to find out the clinical anger amongst them. The sample collection for the study was between February 2013 and July 2014 and data analyzed within one month of total recruitment.

Postgraduate students of medical and Paramedical (Dental, Physiotherapy and Nursing) were selected randomly from Sumandeep Vidyapeeth University. A total of around 500 postgraduates from medical and

Paramedical disciplines were given the forms but only 349 were recruited in the study as others did not return the forms and forms were left unfilled. A semi-structured self-prepared questionnaire mentioning demographic details and CAS (Clinical Anger Scale) was given.

2.1 Inclusion Criteria

- Participants who gave informed and written consent
- Participants who returned the filled forms within one week
- Participants aged 24 and above were included
- Participants who were part of sumandeep vidyapeeth University

2.2 Exclusion Criteria

- Participants who did not give informed written consent
- Participants who did not return filled forms within one week.

2.3 Methodology

A cross-sectional (randomized selection of subjects) study was done and post-graduate medical, dental and paramedical students were included in the study. Demographic details of all the subjects were captured in a predesigned CRF (Case Report Form). All the subjects were given the Clinical Anger Scale (CAS).

Clinical Anger Scale (CAS), an objective self-report instrument, was designed to measure the psychological symptoms presumed to have relevance for the understanding and to treat clinical anger. Twenty-one sets of statements were prepared for this purpose. In writing these group of items, the format from one of Beck's early instruments was used to design the Clinical Anger Scale (Beck, 1963, 1967; Beck et al., 1961). The symptoms of anger measured by the CAS items involved: anger now, anger about the future, anger about failure, anger about things, angry-hostile feelings, annoying others, angry about self, angry misery, wanting to hurt others, shouting at people, irritated now, social interference, decision interference, alienating others, work interference, sleep interference, fatigue, appetite interference, health interference, thinking interference, thinking interference, and sexual interference. Subjects were asked to read each of the 21 groups of statements (4

statements per group) and to select the single statement that best described how they felt (e.g., item 1 : A = I do not feel angry, B = I feel angry, C = I am angry most of the time now, and D = I am so angry all the time that I can't stand it). Each cluster of statements was scored on a 4-point Likert scale, with A=0, B=1, C=2, D=3. The four statements in each cluster varied in symptom intensity, with more intense clinical anger associated with statement D. Subjects' responses on CAS were summed so that higher scores corresponded to greater clinical anger (21 items; range 0-63). Score range: Minimal clinical anger (0-13), Mild clinical anger (14-19), Moderate clinical anger (20-28), and severe clinical anger (29-63). [12]

2.4 Statistical Analysis

Data were pooled and statistical analysis was done with SPSS v16 software package using multivariate analysis with analysis of covariance test.

3. RESULTS

In the present study 189(54.2%) were males while 160(45.8%) were females. The mean age of postgraduate students was 25.5(SD 2.3) years. 29.22% were married while the rest was widowed or separated or unmarried. 57.3% were medical post-graduate students while 42.7 % were paramedical post-graduate students.

Table 2 shows that only <40% of subjects were having minimal clinical anger while almost 40% of subjects were having moderate to severe clinical anger.

Table 3 shows that there was no significant difference found in clinical anger between postgraduates of MD/MS and M.Sc.Postgraduates doing MD/MS were having significantly higher anger compared to postgraduates of MDS ($p=0.002$), MPT ($p=0.000$).

More than 50% of subjects pursuing MDS were having minimal clinical anger while only 9.8% were having severe clinical anger. 70% of subjects pursuing MPT were having minimal clinical anger while only 2 subjects (6.7%) were having severe clinical anger. Amongst the students doing M.Sc 41.4% were having minimal clinical anger while 29.30% were having severe clinical anger. 32.50% of postgraduate students pursuing MD/MS were having moderate clinical

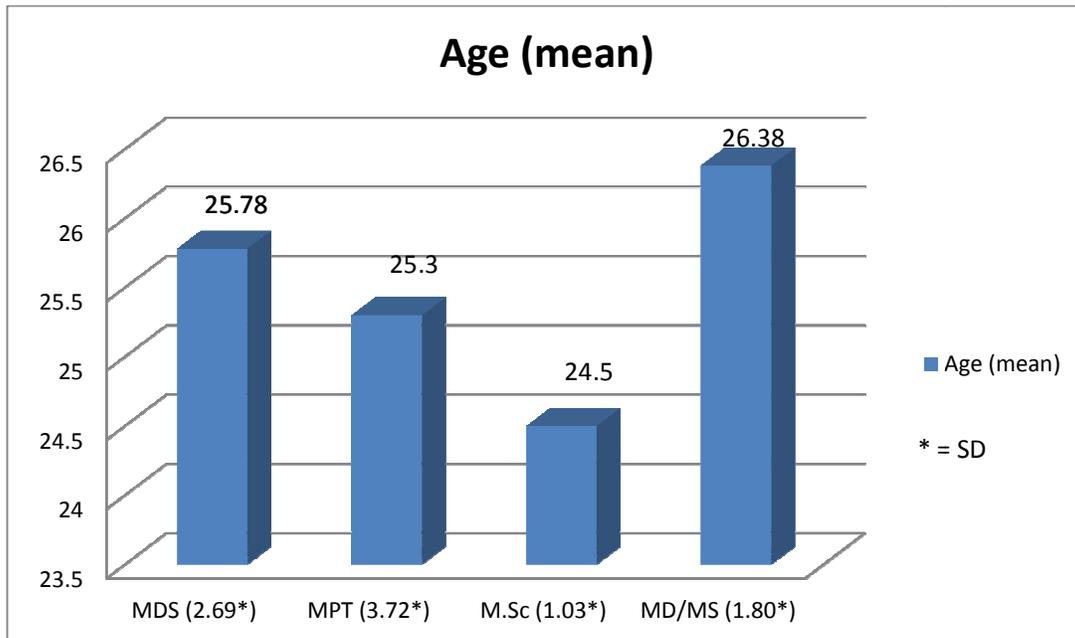
anger while 17% were having severe clinical anger.

Females scored significantly lower on clinical anger compared to males ($p=0.004$). Medical post-graduate students were having significantly

higher anger compare to paramedical post-graduate students ($p=0.000$). Postgraduate students doing MS have significantly higher clinical anger compared to post-graduate students pursuing MD ($p=0.000$).

Table 1. Socio demographic details of participants

Socio demographic details		Sample size 349 (100%)		
Age	Range	22-44		
	Mean	25.5		
	Standard Deviation	2.3		
Sex	Male	189 (54.2%)		
	Female	160(45.8%)		
Marital status	Married	102 (29.22%)		
	Unmarried	247 (70.78%)		
Domicile state	Gujarat	244 (69.9%)		
	Others	105 (30.1%)		
Habitat	Rural (R)	22 (6.3%)		
	Urban (U)	327 (93.7%)		
Group	MDS	61 (17.5%)		
	MPT	30 (8.6%)		
	M.Sc	58 (16.6%)		
	MD/MS	Degree	176(50.5%)	200 (57.3%)
		Diploma	24 (6.9%)	
Academic Year	1 st	148 (42.4%)		
	2 nd	129 (37%)		
	3 rd	72 (20.6%)		



Graph 1. Age distribution across the sample discipline wise

The mean age of postgraduate students was 25.5 years

Table 2. Clinical Anger Scale, distribution of clinical anger across the sample

Clinical Anger	N	Percentage (%)
Minimal	137	39.3
Mild	70	20
Moderate	83	23.8
Severe	59	16.9

Table 3(a). Discipline wise distribution of clinical anger

Discipline	Clinical Anger on CAS			
	Minimal N (%)	Mild N (%)	Moderate N (%)	Severe N (%)
MDS	31 (50.9%)	16 (26.2%)	8 (13.1%)	6 (9.8%)
MPT	21 (70%)	7 (23.3%)	0 (0%)	2 (6.7%)
M.Sc	24 (41.4%)	7 (12.1%)	10 (17.2%)	17 (29.3%)
MD/MS	61 (30.5%)	40 (20%)	65 (32.5%)	34 (17%)

Table 3(b). Discipline wise distribution of clinical anger

Discipline wise comparison	P value	
MDS	MPT	.444
	M.Sc	.029
	MD/MS	.002
MPT	MDS	.444
	M.Sc	.001
	MD/MS	.000
M.Sc	MDS	.029
	M.Sc	.001
	MD/MS	.999
MD/MS	MDS	.002
	MPT	.000
	M.Sc	.999

4. DISCUSSION

The present study showed higher clinical anger among post-graduate students. Clinical anger was more among the postgraduate medical students compared to paramedical postgraduate students. Anger was more among the unmarried subjects compared to married subjects and it was higher among the males than females. In the present study, less than 40% of subjects had minimal clinical anger. In comparison, almost 40% of subjects had moderate to severe clinical anger, similar to the study done by Faye Abhijeet et al. [14].

Medical, dental and paramedical post-graduate students are an essential part of multi-specialty teaching institutes where resident doctors are the ones who come in the first contact with the patients and the behavior of both residents and patients depends on each other. Emotions of residents play an important role in patient-doctor relationships and to maintain the same. Emotions

have positive as well as negative impacts on the daily life and behavior of people including resident doctors. Here in this study emotion of residents was measured through their level of anger.

Though less in number, most of the studies have been done on undergraduate medical and dental students [15]. Very few studies have been done to measure anger amongst resident doctors, especially in India [16]. No research has been done till now on paramedical post-graduate students to measure their anger even though they are a critical part of all health universities and multi-specialty hospitals.

In the present study, it was found that subjects from the surgical branch were having significantly higher anger which is similar to the finding of the study by Azimi et al. [17] and Abhijeet et al. [14].

In the medical field, however, burnout is often seen in health care workers. Self-motivation is

thus required to keep one going. The impact of structured soft skills training in this population would make a very interesting analysis in future studies.

Unfortunately, current medical training focuses more on hard skills training. Soft skills hands-on training is sorely lacking, and a resident medical doctor is expected to self-imbibe the required skills, we think this current system probably reflects the above finding.

The present study indicates that there is a need for a program through which we can help the post-graduate medical and paramedical students to cope with the stress and help them in anger management.

5. CONCLUSION

The present study showed that post-graduate medical and paramedical students are at great burden and experience higher levels of anger. The study found that more than 40% of the participants experienced moderate to severe levels of anger.

CONSENT

Informed written consent was taken from participants.

ETHICAL APPROVAL

Prior permission of Sumandeep Vidyapeeth Institutional Ethics Committee (SVIEC) was taken to start the study (SVIEC/ON/MEDI/BN-PG12/D12322 (Date: 19/1/2013)).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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