

Original Research Article

## Prevalence of Stress and its factors among the medical interns of Central Kerala

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### Abstract

**INTRODUCTION:** Compulsory Rotatory Residential Internship (CRRI) is a period of transition from a medical student to an equipped physician to care for the nation's sick community. Internship period was perceived to be the most stressful period in the life of a medical student. Aim of the study was to find the prevalence of stress among the medical interns and to assess the association between selected factors and stress. **MATERIALS & METHODOLOGY** :A cross-sectional study was conducted among 100 medical interns of Govt. Medical College Kottayam, from 27/10/15 to 26/11/15. Interns who had chronic disease or known psychiatric disease were excluded. Data were collected using semi-structured questionnaire and perceived stress scale (PSS-10) . **RESULT** :It was found that 85% of the interns were found to be stressed (34% mild stress, 29% moderate stress and 22% severe stress). Single interns had more stress when compared to married interns ( $X^2= 10.485$ ,  $p= 0.001$ ). Interns who slept <6 hours had stress (96.7%) and found to be statistically significant ( $X^2=6.745$ ,  $p=0.034$ ). Among the interns who could not take food on time 96.6% were found to be stressed and was significant ( $X^2= 19.662$ ,  $p<0.001$ ). Hostel in –mates had more stress when compared to day scholars (92.1% vs 73%,  $X^2= 6.663$ ,  $p= 0.01$ ). Stress was found to be more among those who missed the social/family events (91.5% vs 69%,  $X^2= 8.236$ ,  $p= 0.004$ ). Conflicts with the post graduates in the department ( $X^2= 5.205$ ,  $p= 0.023$ ), nursing staffs ( $X^2= 4.713$ ,  $p= 0.027$ ) and patients ( $X^2= 4.885$ ,  $p= 0.027$ ). **CONCLUSION:** Prevalence of stress among interns was found to be 85%. Marital status, duration of sleep, irregular timing of food, place of residence, missing social events and conflicts with Post graduates/nursing staffs/patients were found to be associated with stress.

**Keywords:** Stress, CRRI, Chronic Diseases, Kerala

### INTRODUCTION

Internship refers to the 1 year Compulsory Rotatory Residential Internship (CRRI) required to obtain Bachelor of Medicine and Bachelor of Surgery (MBBS) degree. It begins just after the completion of medical school, and it is a year of tremendous changes. The internship is a kind of experimental learning under the observation of senior faculties during which recent graduates take the opportunity to apply acquired knowledge and skills from their medical school training to real-world situations and it provides an opportunity for medical graduates to integrate and consolidate their thinking and actions. Also, it bridges the gap between the medical school and being board eligible for medical speciality training. The overall goal of medical education is to produce knowledgeable, competent and professional physicians who are equipped to care for the nations' sick community, provide advancements in medical

science education and research, and most importantly promote public health care. The major tasks assigned to medical interns are to provide patient care, register new admissions, prepare medical records and to fine skill the procedures of drawing blood, lumbar puncture aspiration, ascitic fluid tap, pleural fluid tap, etc<sup>1</sup>. Newly graduated physicians who undertook internship appreciate that being an intern is the most stressful period in life of a medical doctor<sup>2</sup>. Studies report a statistically higher incidence of stress among medical students when compared to the non-medical students<sup>3,4</sup>.

Stress is a subjective phenomenon that results from an event that produces physical or physiological pain. Stress is a normal part of everyday life; it may either be healthy or unhealthy. For example, feeling a small amount of stress until a solution is reached is known as healthy or positive stress. Healthy stress is beneficial as a coping strategy to

keep awareness, balance and connection. Also, it can help to provide desirable effects such as tolerance of ambiguity, self-confidence, and maturity and it may stimulate the acquisition of knowledge and skills<sup>5</sup>.

However unhealthy or negative stress which is referred to as excessive stress can interfere with efficient learning, impair memory, increase anxiety, decrease sleep, cause eating habit – related problems, lead to accident proneness and decrease problem solving abilities<sup>6</sup>. Skipping food can alter the metabolic harmony of oneself<sup>7</sup>. Good personal skills can counter the effect of stress to a certain extent, so that the strain can be alleviated. Many studies have assessed the effect of a stressful life of a person on outcomes of his career, especially in medical field<sup>8,6</sup>.

Many studies have investigated stress levels among undergraduate students and post-graduate residents. However minor attempts have been made to study the stress levels and pertinent causative factors among newly graduated physician<sup>3</sup>.

In the present study, attempts have been made to investigate the prevalence of stress and its severity among interns of Govt. Medical College, Kottayam. Also attempts have been made to evaluate the level of stress and possible stress causing factors associated with clinical rotations, sleep period etc...

**MATERIALS & METHODOLOGY**

A cross-sectional study was done among the medical interns of Government Medical College Kottayam, Kerala. sample size was calculated using the formula  $n=4pq/d^2$  based on previous study and a sample of 100 interns were selected using non probability sampling technique. Interns who had chronic disease or known psychiatric disease were excluded. Semi-structured questionnaire and Perceived Stress scale(PSS)-10<sup>9</sup> were used as study tools. PSS-10 has 10 questions related to feelings and thoughts in the past 1 month. Perceived stress scale (PSS-10) was used to grade the severity of stress. Out of the 10 questions 6 were negative and 4 were positive questions. Each question has 5 options [0 = Never, 1 = Almost Never, 2 = Sometimes, 3 = Fairly often, 4 = Very often]. PSS scores were obtained by reversing responses (e.g.: 0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0) to the four positively stated questions (Q.4, 5, 7, 8) and then summing across whole the scale. Severity of stress were graded as: 0 to 12 - no stress; 13 to 17 - mild stress; 18 to 21- moderate stress and >21 - severe stress

**DATA MANAGEMENT AND STATISTICAL TESTS USED:** Data were coded and entered in MS Excel and analysed using SPSS V23.0 (Trial version). Pearson Chi Square test was used to find the association between stress and the variables. A p value of <0.05 was set as significant level.

**RESULT**

Figure 1: Severity of stress among the interns

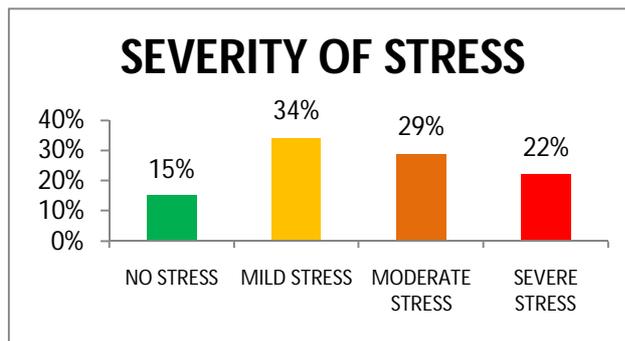


Table 1: General characteristics associated with stress

Factors	Stressed Number (%)	Chi Square value (df=1)	P value
<b>Gender</b>			
Male (n=43)	35(81.4%)	0.769 (df=1)	0.381
Female(n=57)	50(87.7%)		
<b>Marital Status</b>			
Single (n=93)	82 (88.2%)	10.485 (df=1)	0.001
Married (n=7)	3 (42.9%)		
<b>Exclusive Hosteller</b>			
Yes (n=63)	58 (92.1%)	6.663 (df=1)	0.01
No (n=37)	27 (73%)		
<b>Missed social events</b>			
Yes (n=71)	65 (91.5%)	8.236 (df=1)	0.004
No (n=29)	20 (69%)		

Table 2: Work - related factors associated with stress

Factors	Stressed Number (%)	Chi square value (df)	P value
<b>Fear of Hospital</b>			
Acquired infection			
Yes (n=63)	56 (88.9%)	2.02 (df=1)	0.155
No (n=37)	29 (85%)		
<b>Working hours</b>			
<8 hours (n=20)	13 (65%)	11.41 (df=2)	0.003
8-12 hours (n=51)	43 (84.3%)		
>12 hours (n=29)	29 (100%)		
<b>Relaxation time</b>			
<2 hours (n=18)	18 (100%)	6.913 (df=2)	0.032
2-5 hours (n=53)	46 (86.8%)		
>5 hours (n=29)	21 (72.4%)		
<b>Duration of sleep</b>			
< 6 hours (n=30)	29 (96.7%)	6.745 (df=2)	0.034
6-8 hours (n=62)	51 (82.3%)		
>8 hours (n=8)	5 (62.5%)		
<b>Food intake on-time</b>			
Yes (n=36)	23 (63.9%)	19.662 (df=1)	<0.001
No (n=64)	62 (96.9%)		

The mean age of the study population was 23.64±0.62years with minimum age 23 years and maximum age 25 years. Among the study population 43% were males and 57% were females.

It was found that the prevalence of stress was 85% among the medical interns (34% mild stress, 29% moderate stress and 22% severe stress).

Table 3: Interpersonal relations and Stress

Factors	Stressed	Chi-Square value (df)	P value
	Number (%)		
<b>Conflicts with senior faculty</b>			
Yes (n=25)	24 (96%)	3.163	0.075
No (n=75)	61 (81.3%)	(df=1)	
<b>Conflicts with Post Graduates</b>			
Yes (n=32)			
No (n=68)	31 (96.9%)	5.205	0.023
	54 (79.4%)	(df=1)	
<b>Conflicts with co-interns</b>			
Yes (n=21)			
No (n=79)	17 (81%)	0.342	0.559
	68 (86.1%)	(df=1)	
<b>Conflicts with nursing staff</b>			
Yes (n=53)			
No (n=47)	49 (92.5%)	4.713	0.027
	36 (76.6%)	(df=1)	
<b>Conflicts with Patients/their relatives</b>			
Yes (n=31)	30 (96.8%)	4.885	0.027
No (n=69)	55 (79.7%)	(df=1)	

## DISCUSSION

Stress was equally prevalent in both the genders. Studies done previously shows a female predominance of stress<sup>10,11</sup>. It was interesting to find that the single interns were more stressed (88.2%) than the stressed among married interns (42.9%) and the association of single interns and stress was found to be statistically significant (Chi-square value 10.485, p value 0.001). The prevalence of stress is more among exclusive hosteller when compared to the day-scholar (92.1% vs 73%, Chi-square value 6.663, p value 0.010). Attending social events is part of human life. It was found that 91.5% of those who missed the social events were stressed (Chi-square value 8.236, p value 0.004). The findings were consistent with the result by Saini et al<sup>12</sup>. Fear of exposure to infectious agents in medical profession can cause stress

but our study could not bring out an association between the two. As given in table 2, the prevalence of stress increased with increase in working hours and it was statistically significant. Similar finding was observed by previous study<sup>13</sup>. It was also found that the prevalence of stress increased with decrease in the time for relaxation per day and duration of sleep and was statistically significant. Increase in work time with reduced relaxation has deleterious effects on health<sup>14</sup>. Disturbance in sleep causes neuroendocrine stress system imbalance<sup>15</sup>. Interpersonal relation in our work area can influence the stress<sup>16</sup>. Good interpersonal relationship results in job satisfaction<sup>17,18</sup>. In table 3, it was evident that the conflicts with post graduates, nursing staffs and the patients/ their relatives were found to be associated with stress among interns.

**CONCLUSION :** Prevalence of stress among interns was found to be 85%. Marital status, duration of sleep, irregular timing of food, place of residence, missing social events and conflicts with Post graduates/nursing staffs/patients were found to be associated with stress.

**LIMITATION:** Single centre study

**Conflict of interest:** Nil

**Source of funding:** Nil

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