

A Comparative Evaluation of Stress Factors In Different Study Groups in Rural Area of Loni, Pravaranagar and PIMS

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Abstract :

Comparative study of mental health status over a varying strata are lacking in Rural India. The aim of the present study was to enumerate and compare different stress factors among teachers, students, clerical staffs and local residents in a rural medical university and its field practice area. This point prevalence estimation was conducted from July 2008 to September 2008 as an ICMR student research project. For the total study population irrespective of different groups; more than 50% i.e. 221(55.25%) recorded mild stress and 10(2.5%) recorded stress scores needing urgent intervention. In student group with stay less than 3 years, 72% recorded detectable stress where as those with stay over more than 3 years showed a lesser level at 54%. Stress profile of teachers irrespective of duration of stay at Loni, recorded a figure over 75% being mentally stressed. Only 24% were found within normal level. Among clerical and paramedical groups severe and very severe stress was apparent in the less than 3 years as compared to above 3 years category; i.e, at 12% and 2% to 2% and 0% respectively. Lowest stress level was observed in the natives of rural area of Loni and Pravaranagar, with an average stress score of 169.44, for males and 170.42 for female which was less than the cut off value of 178. As we perceived; the need of the hour demands giving priorities to mental health and its related diseases at all possible health care level.

Key words: *stress factors, medical university work force, rural India.*

Introduction :

Out of the three major components of health i.e. physical, social and mental, the last one is chronically neglected over centuries^[1,2]. This neglect is grossly unjustified. Recent studies show that approximately 12% of all DALY (Disability Adjusted Life Years) lost in 1998 were attributed to mental health disorders due to stress and it is expected to rise to 15% by 2020^[3]. Stress is the condition that results when person-environment transactions lead the individual to perceive a discrepancy, whether real or not, between the demands of a situation and the resources of the person's biological, psychological or social systems. In medical terms, stress is the disruption of homeostasis through physical or psychological stimuli. Stressful stimuli can be mental, physiological, anatomical or physical^[4]. In the present study an effort was made to evaluate different stress factors and the levels of stress experienced among the faculty, staffs, students of a rural

Medical university and the permanent residents in its practice area.

Methodology

A pilot study was done for feasibility assessment by a pre-tested and pre designed questionnaire. There after the study was conducted encompassing 400 participants from different study groups. The questionnaire was divided into three parts for the better assessment of the stress and better comparison between the study groups. The first part dealt with the general information; second part with 35 questions probed the behavioral signs; third part containing 27 questions assessed the physical signs; and 14 questions in fourth part evaluated stress prone characteristics. Every question contained four options, each option was allotted marks from 1 to 4 (e.g. 1 = never, 2 = rarely, 3 = sometimes, 4 = often). On the basis of total score of the individuals; level of stress was estimated.

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Sample Size: The Study included randomly selected 400 individuals from different study groups as mentioned below -

- 50 Students studying in PIMS and residing in Loni for < 3 years.
- 50 Students studying in PIMS and residing in Loni for > 3 years.
- 50 Teachers in PIMS, living in Loni for <3 years.
- 50 Teachers in PIMS, living in Loni for >3 years.
- 50 Clerks and Paramedical staff from Pravara PIMS, living in Loni for <3 years.
- 50 Clerks and Paramedical staff from Pravara PIMS, living in Loni for >3 years.
- 50 adult male, native of Rural area of Loni and Pravaranagar.
- 50 adult female, native of Rural area of Loni and Pravaranagar.

Study Period:

The study period was from July 2008 to September 2008.

Analysis:

All the scores of individual were added, which showed a range from 76 to 304. The average score (mean) of the study population was calculated to be 177.5 (approx 178). The range for normal was calculated by mean ± 1 SD(Standard Deviation), scores between mean ± 2 SD were considered as moderate stress and scores between mean ± 3 SD from mean was in severe stress and score > 3 SD from mean was in very severe stress category.

Then for the comparative evaluation Z Test is applied on the data, by calculating SE ($p_1 - p_2$) and taking degrees of freedom to be 1.

Observations And Result

For the total study population irrespective of study groups, more than 50% i.e. 221(55.25%) recorded mild stress and 10(2.5%) recorded stress scores needing urgent intervention. The break ups of the different grades of stress scores are given in table 1.

Stress Range	No. of persons	Percentage	Category
< 165	64	16 %	Normal
166 – 178	105	26.25 %	Borderline / Normotensive
179 – 191	221	55.25 %	Mild stress
192 – 204	8	2 %	Moderate stress
205 – 217	2	.5 %	Severe stress
Total	400	100%	

TABLE NO 1: Owing distribution of types of stress in the study population

In the study group of students with more than 3 years of residence at Loni, most of them showed moderate stress amongst 27(54%), followed by 22(44%) in normal range. Only 1(2%) student showed very severe stress. For the student group with residence less than 3 years; almost 2/3 i.e. 36(72%) showed moderate level of stress and none were in the more severe range unlike the previous group.

The stress profile of teachers residing for more than 3 years in PIMS, it was observed that more than 75% i.e. 38(76%) reported moderate stress scores, and only 12(24%) reflected normal scores (Fig 1)

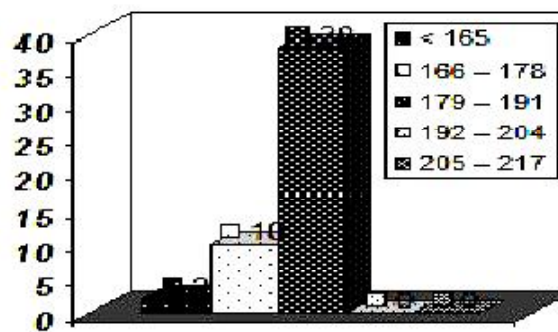


Figure1: Bar diagram showing stress score for Teachers residing in Loni for more than 3 yrs.

Surprisingly there was no difference in stress scores for teachers working for less than 3 year as compared to teachers residing over 3 year (Fig2). Among teachers teaching in Rural area of Loni and

Pravaranagar and PIMS for more than three years, 2 (4%) teachers are below stress line, 10 (20%) teachers are at borderline and 38 (76%) teachers are in mild stress with an average stress score of 182.28, which is greater than the cut off value (178). While among Teachers teaching in Rural area of Loni and Pravaranagar and PIMS for less than three years, 2 (4%) teachers are below stress line, 10 (20%) teachers are at borderline and 38 (76%) teachers are in mild stress with an average stress score of 182.64, which is greater than the cut off value (178).

Among clerical and paramedical staffs of PIMS, in more than three years group, 18 (36%) were below stress line, 8 (16%) were at borderline, 24 (48%) were in mild stress, 1(2%) in severe stress and 0(0%) in very severe category; with an average stress score of 173.56, which is less than the cut off value (178). The less than three year group showed 8 (16%) below stress line, 11 (22%) at borderline, 24 (48%) in mild stress, 6 (12%) in moderate stress and 1 (2%) in severe stress, with an average stress score of 179.06, which is greater than the cut off value (178). Thus there was high percentage difference in stress scores for severe and very severe depression in junior clerical groups (Fig 2 & 3).

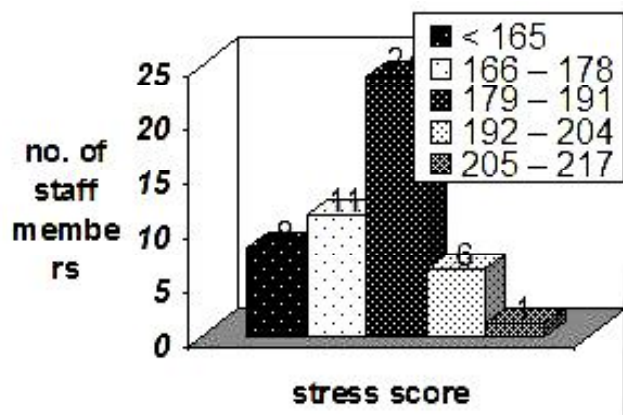


Figure2: Bar diagram showing stress score of clerical staff residing in Loni (More than 3 years)

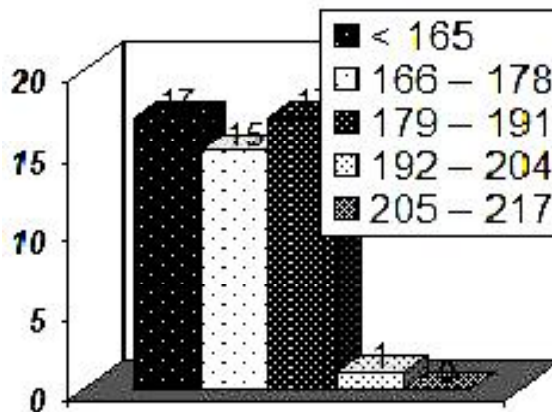


Figure 3: Stress score of clerical staff in less than 3 year group

The natives of rural area of Loni and Pravaranagar recorded the following observations. For males, 17 (34%) were below stress line, 15 (30%) were at borderline, 17 (34%) in mild stress and 1 (2%) in moderate stress, with an average stress score of 169.44, which was less than the cut off value (178). In female natives, 13 (26%) were below stress line, 19 (38%) at borderline, 17 (34%) in mild stress and 1 (2%) female is in moderate stress, with an average stress score of 170.42, which was less than the cut off value (178).

Discussion

A Z-test value of 4.2899 at 1% level of significance i.e. $p < 0.01$, suggests that students were at greater stress and more prone to stress related diseases than the natives of Rural area of Loni and Pravaranagar. Similar observation were made by other researchers^[5-10]. Highly significant difference between stress levels of teachers (doctors) and rural natives were apparent from the Z- value at 6.583($p < 0.01$). Similar observations were documented by other studies where doctors had reported as one of the most stressed groups^[10-14]. On comparison of mild (grade 2) stress scores of teachers and students the Z- value was recorded at 2.0155($p < 0.05$), implying a significant difference between stress levels of teachers and students. Thus teachers were highly stressed and more prone to stress related diseases. This infact was a comparatively new observation as similar comparisons are lacking in literature.

The study also indicated that students from both the study group had high level of stress; but students studying in Rural area of Loni i.e. PIMS for less than three years are at greater stress and more prone to stress related diseases than students studying for greater than three years.

High level of stress among teachers of both the study group was reported. Inter group evaluation showed no significant variation. Studies indicating doctors and teaching professionals as high stressed groups are aplenty^[12-17].

High levels of severe and very severe stress in recently employed (<3yrs) paramedics and clerics of PIMS may be due to change of place, new working environment and difficulty in cultural and work adjustments. Similar observations were recorded by other researchers, putting recent employment and change of place as stress precipitators^[18-20].

Though the study average for both males and females among local natives were below the mean (cut off value = 178), the females recorded a slight high average than the males thus putting them at more risk of developing stress and its related disorders^[20-22].

Conclusion

There is increased level of stress in individuals who are away from family for less than 3 years as they are still in a phase of adoption regardless of age and gender and also profession. Depressive symptoms and perceived stress are public health concerns more so among faculty, doctors, students and paramedics. Stress at work is also associated with very high educational level and high occupational position. Common stressors documented were change of place, work environment, difficult people, and daily hassles, medical illness and discrimination.

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Medical Quotes

It becomes every person who purposes to give himself to the care of others, seriously to consider the four following things:

First, that he must one day give an account to the Supreme Judge of all the lives entrusted to his care.

Second, that all his skill and knowledge and energy, as they have been given him by God, so they should be exercised for His glory and the good of mankind, and not for mere gain or ambition.

Third, and not more beautifully than truly, let him reflect that he has undertaken the care of no mean creature; for, in order that he may estimate the value, the greatness of the human race, the only begotten Son of God became himself a man and thus ennobled it with His divine dignity, and far more than this, died to redeem it.

And fourth, that the doctor being himself a mortal human being, should be diligent and tender in relieving his suffering patients, in as much as he himself must one day be a like sufferer.

- Dr.Thomas Sydenham
(1624-1689)