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Post-COVID presumptive stressful life-events and depression among faculties: A study in tertiary care hospital in Odisha

Dr. Ramesh Kumar Biswal
Assistant Professor, Department of Community Medicine, SLN Medical College, Koraput, Odisha
Phone: 7978501300
Email: dr.ramesh.kumar.biswal@gmail.com

Dr. Somanath Sethi
Assistant Professor, Department of Community Medicine, PRM Medical College, Baripada, Odisha
Phone: 7008939991
Email: drswamisomanath@gmail.com

Dr. Siba Prasad Das
Assistant Professor, Department of Anesthesiology, SLN Medical College, Koraput, Odisha
Phone: 8763760328
Email: sibaprasad1972@gmail.com

Dr. Kaushik Mishra
Professor, Department of Community Medicine, Shri Jagannath Medical College, Puri, Odisha
Phone: 9437228312
Email: kaushikmishra1965@gmail.com

Dr. Debasish Pandit
Senior Resident, Department of Community Medicine, Shri Jagannath Medical College, Puri, Odisha
Phone: 9556948216
Email: dpandit07@gmail.com

Dr Ananta Charan Meher
Assistant Professor, Department of Psychiatry, SLN Medical College, Koraput, Odisha
Phone: 9437760166
Corresponding author Email: dr.jiytu80@rediffmail.com

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***Abstract*---**Introduction: Stress is an inhabitable component in a doctor's life. Apart from the personal life, working environments add a huge components of stress in life, which later convert into depression. The unprecedent event of COVID act as top up in adding various stressful events among healthcare professionals. Objectives: The aim of this study was to measure the post-COVID amount of presumptive life stress and depression among the faculties in a tertiary care institute. Methods: It was a cross-sectional study conducted at SCB Medical College, Cuttack for the period of 6 months, i.e. January'21 to June'21. Faculties of all the departments of SCB medical college was considered as study participants and by stratified sampling 72 faculties were considered for this study. Presumptive stressful life event scale (PSLE) was used to measure the stress and Zung self-assessment depression scale (SDS) was used for the measurement of depression among the study participants. The analysis was done "R" software version 4.0.3. Results: A total of 72 faculties were included in this study. Among them, 51(70.83%) were from clinical, 13(18.05%) from para-clinical and 8(11.12%) from non-clinical departments, females (52.8%) and males (47.2%). A total of 43.0% faculties were found to have severe stress, 30.6% were having moderate stress and 26.4% had no stress.Out of 72 faculties, 18(25%) were assessed as in depression state with higher proportion (77.8%) were from clinical stream. Conclusion: A significant number of faculties were found in depression state and the stressful life events like COVID-19 surely enhancing the risk. The institutions should consider the work burden of the faculties, especially for clinical stream and should provide an appropriate schedule of working to ease the stress among the faculties during the adverse situation in future.

***Keywords*---**Stress, Depression, PSLES, Faculties, Doctor.

Introduction

Mental health refers to a broad array of activities directly or indirectly related to the mental well-being, a component included in the World Health Organization's definition of Health[1]. Mental Health problems are a major public health concern due to their high prevalence rates, difficulties related with identification and treatment. Stress, anxiety, and depression in faculties of tertiary care hospitals are important concerns, considering their potentialeffect on patient care, teaching, and various administrative works.

Different group of faculties in medical colleges have different types of scenario of work and hence accounts for different levels of stress and depression. Cooper et al found that job stresswas predictive of lack of psychological well-beingamong physicians[2]. The factors found to contribute themost to job stress were job demands and patient expectations,interference by family and interruptionsat work by administration[3].Practicing clinicians report working longer hours, taking lessvacation, spending more time with patients, having moreconflict between work and personal life, and havingmore time pressures.Similar problems in academic faculty have also beendescribed. Academic faculty may be particularly vulnerableto the deleterious effects of a stress-filled environment.Exposure to severe and chronic stressors may contribute to higher levels of burnout leading to moderate to severe consequences in mental health, such as depression, anxiety, substance abuse, marital dysfunction, premature retirement, and suicide[4].

With the arrival of an unprecedented pandemic of COVID-19, the whole working scenario for the doctors was changed and additional workload imposed specially to the tertiary care hospital faculties both in treatment and administrative aspects. Also for para- and non-clinical faculties a paradigm shift of teaching methods and reintroduction to clinical set ups top up the psychological burdens. In additional to that, there was always a risk of losing one of the nearest and dearest throughout the year due to COVID. Considering these additional psychological burden, this study was conducted with the objective of measuring the extent of stress and depression among the faculties working at a tertiary care hospital.

Materials and Methods

This was a cross-sectional study conducted at S.C.B. Medical college & hospital, Cuttack, Odisha for the period of 6 months. i.e. from January'21 to June'2021. Faculties of all the departments were the study participants. The sample size was determined using the following formula Z^2*PQ/l^2. Considering the prevalence(P) of minor to major depression among faculties of medical college 4.3% from the previous study[5], and with Z = 1.96, Q = 95.7% (100-P), and absolute precision(l) = 5% the sample for this study was found to be 64.Finally a total of 72 participants took part in this study.

Faculties, who gave the informed consent were considered eligible for the study. Out of total 253 faculties, the required sample were selected by stratified random sampling. All the faculties were stratified into 3 categories i.e. clinical, para-clinical and non-clinical. From each strata, 30% participants were selected randomly by random number generator app.

For the assessment of stress among the faculties, a Presumptive stressful life even scale (PSLE)[6] was used and to quantify and classify the stress level among the faculties. A Zung self-assessment depression score(SDS) was used to evaluate the depression status. The information was collected by self-administrated questionnaire. Collected information was tabulated in Microsoft Excel, version 16 and was analysed by "R" software version 4.0.3.

Presumptive Stressful Life Events Scale (PSLES): This scale is based on The Social Readjustment Rating Questionnaire (SRRQ) of Holmes and Rahe (1967). It is a list of 51 life events relevant to the Indian setting given a score based on the mean score of general population standardized for two time frames — Past 1 year and lifetime. The total score is used as stressful life event score[7].

Zung self-assessment depression score(SDS)[8]: It is a commonly utilized non-reference scale. The SDS is 20-item 4 point Likert scale ranging from 1(none or little of the time) to 4 (most, or all of the time). The scale has raw score range from 20 to 80 points. The raw score then converted to an index score by dividing raw score by maximum score(80) and multiply by 100 to express it as a whole number with an index score ranging from 25-100. The index score of 25-49 indicate "no depression", 50-59 indicate "mild to moderate depression", 60-69 indicate "moderate to severe depression" and score over 70 indicate "severe depression".[9] In this study,

Results

A total of 72 faculties were included in this study. Among them, 51(70.83%) were from clinical, 13(18.05%) from para-clinical and 8(11.12%) from non-clinical departments. The mean age of the faculties was 45.74±9.82 years. Nearly equal proportion of females(52.8%)and males (47.2%) were assessed in this study.Regarding their daily habits, among the participants, 22.2% had some kind of addition 59.7% had food frequency 3 or more times/day. However, only 37.5% had a sleep duration8 hrs. or more, 27.6% were preforming physical workout 1hr. or more. The comparison of the study participants between the strata was illustrated in table-1. There was no significant difference found among three groups w.r.t. sociodemographic profile.

Table 1: Comparison of Socio-demographic profile of the study participants between three strata(Non-Clinical, para-clinical& clinical groups)

Characteristics	Non-clinical (N=8)	Para-clinical (N=13)	Clinical (N=51)	Total (N=72)	p-value*
Age(yrs.) (Mean±SD)					
	45.88±8.7	46.46±7.5	45.53±9.1	45.74±9.82	
Sex					
Female	7(87.5%)	6(46.2%)	25(49.0%)	38(52.8%)	
Male	1(12.5%)	7(53.8%)	26(51.0%)	34(47.2%)	
Addiction					
Yes	2(25.0%)	1(7.7%)	13(25.5%)	16(22.2%)	
No	6(75.0%)	12(92.3%)	38(74.5%)	56(77.8%)	
Food Frequency					
<3 times	0(0%)	0(0%)	1(1.9%)	1(1.3%)	
≥3 times	8(100%)	13(100%)	50(98.1%)	71(98.7%)	
Sleep duration					
<8 hrs	3(37.5%)	10(76.9%)	32(62.8%)	45(62.5%)	
≥8 hrs	5(62.5%)	3(23.1%)	19(37.2%)	27(37.5%)	
Physical Workout					
<1 hr	6(75.0%)	10(76.9%)	36(70.6%)	52(72.2%)	
≥1 hr	2(25.0%)	3(23.1%)	15(29.4%)	20(27.8%)	

**p-value was calculated by using Chi-square test and p<0.05 was considered significant.*

Table-2 illustrate the proportion of the participants at various stress level as a whole and within the groups. A total of 43.0% faculties were found to have severe stress, 30.6% were having moderate stress and 26.4% had no stress. More than half (53.0%) of the clinical faculties were in severe stress level whereas half of the faculties(50%) of non-clinical department had no stress. The difference of the stress level among the three groups of faculties was found to be significant (p=0.04).

Table 2: Comparison of PSLES profile among three strata (Clinical, Non-clinical, Para-clinical & Clinical groups)

PSLES classification	Non-clinical (N=8)	Para-clinical (N=13)	Clinical (N=51)	Total (N=72)	p-value*
No Stress($\leq$40)	4(50.0%)	6(46.2%)	9(17.6%)	19(26.4%)	0.04
Moderate Stress(41-200)	2(25.0%)	5(38.5%)	15(29.4%)	22(30.6%)	
Severe Stress(>200)	2(25.0%)	2(15.3%)	27(53.0%)	31(43.0%)	

**p-value was calculated by using Chi-square test and p<0.05 was considered significant.*

Out of 72 faculties, 18(25%) were assessed as in depression state, however the SDS score was of range 50-59 indicating of having mild depression among the faculties. Among the depressed, higher proportion (77.8%) were from clinical stream, and in both para- and non-clinical stream, equal proportion of participants were in depression state. However, the difference was not significant between three groups. (Table-3)

Table 3: Distribution of participants as per depression

Groups	Depression		Total	p value*
	No Depression	Mild depression		0.669
Non-clinical	6(11.1%)	2(11.1%)	8(11.1%)	
Para-clinical	11(20.4%)	2(11.1%)	13(18.1%)	
Clinical	37(68.5%)	14(77.8%)	51(70.8%)	
Total	54(100%)	18(100%)	72(100%)	

**p-value was calculated by using Chi-square test and p<0.05 was considered significant.*

Linear regression was applied to evaluate the effect of stressful life events on depression. A positive co-relation was observed between the scores of stressful life events and depression score with each unit increase in the score for PSLES, there was an odds of 0.07 increase in the SDS score. (Figure-1).

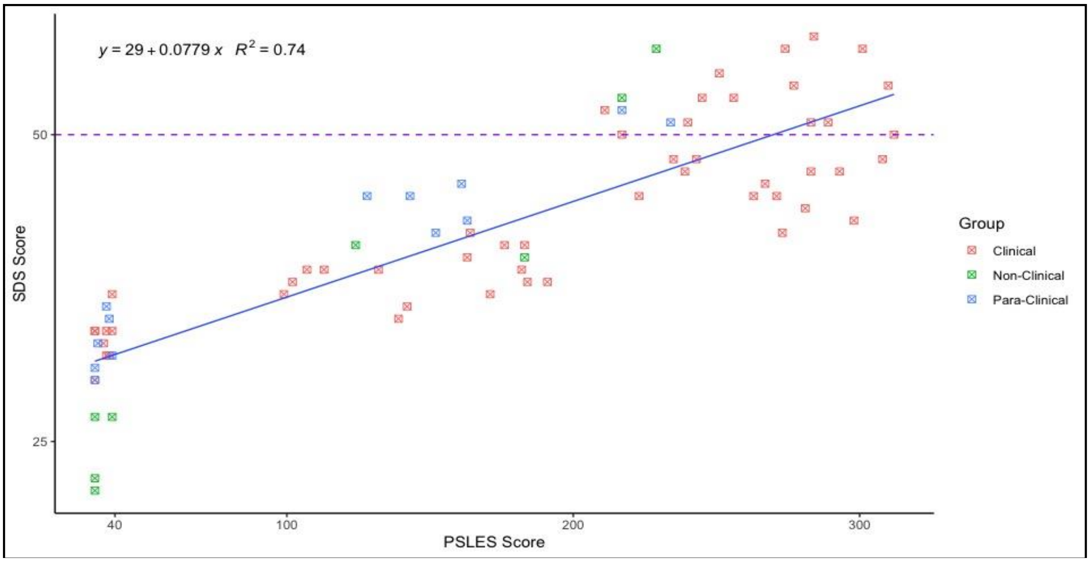

Figure 1: Correlation between PSLES and SDS score among the study participants

Discussion

This study was necessitated by the need to evaluate the psychological status among the faculties of tertiary care hospital who were working tirelessly due to emergence of COVID-19 pandemic. None of the study has given emphasis on assessment of mental status of the faculties after appearance of COVID in India.

In our study, more than one third (43%) of the faculties were having severe stress and 30.6% were having moderate stress. The mean number of life events for the study participants was 2.32±0.4. The mean stress score for this study was 168.09±96.44. The majority of the faculties has reported change in working conditions (61.32%) followed by illness of family members(42.13%) in the PSLES scale. This was clearly a psychological impact of COVID-19 to all the faculties of a tertiary care hospital. This impact was felt more on the faculties of clinical stream, where more than half (53.0%) were having severe stress. Even for para- and non-clinical departments, few faculties (15.3% & 25.0%) had severe stress. A similar study conducted by *Chichra et al.*among the faculties of a teaching hospital found nearly one third (31%) of the faculties had job stress and more felt among clinical department[10].

Among the faculties, one fourth (25%) were found to have depression, though it was of mild category(SDS score 50-59). The proportion of depression was higher among faculties of clinical stream i.e. 77.8% of the faculties in clinical stream were having depression.

In this study, a positive linear co-relation was observed between stressful life events and depression among the faculties with every unit increase in stressful life event score, there is 0.07 unit increase in SDS score. That means more the stressful life events, more was the risk of depression. It was observed that stressful life events were enhanced due to COVID-19 and hence the risk of depression was also increased among the faculties.

Conclusion

A significant number of faculties were found in depression state and the stressful life events like COVID-19 surely enhancing the risk. The institutions should consider the work burden of the faculties, especially for clinical stream and should provide an appropriate schedule of working to ease the stress among the faculties during the adverse situation in future. This will also help in increase the patient-doctor services in a tertiary care hospital.

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