

Stress audit of medical and paramedical students

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Abstract

Introduction: Since Hans Selye first described stress, physicians and psychologists are studying stress and its various manifestations. However like proverbial 'elephant to the blind', stress and her management still remains a mystery to many persons.

In pursuit of happiness, man has tried to eliminate stress from his life, but in vain!! Stress affects almost all of us some or the other time. In chronic form, it causes psycho somatic diseases in man.

Material and Methods: Based on symptoms and signs of stress, we devised a questionnaire for stress audit of participants. In present study, we did stress audit of students of 800 students of medical and paramedical branches; by giving them a questionnaire to fill up. Comparison of stress levels was done between students of Physiotherapy (year 1), General Nursing and Midwifery (year 2) and MBBS (year 1).

Results: 30% students had stress scores higher than 16, suggestive of distress. They were offered pranayam, dhyana and yoga, as remedial measures.

Keywords: Stress, Stress Audit, Stress State, Stress Trait, Pranayama, Yoga

Introduction

Stress is known to human being since stoneage. Stress and fear of death, has led to many war fares and surprisingly a few novel inventions like well, wheel and weapons. Stress is defined as the feeling of being worried because of difficulties in one's life (3). Stress is also stated as mental or emotional strain (4).

Hans Selye, the father of science of stress, said that stress results from wear and tear of the body. He further classified stress into eu stress and dis stress (1). Spielberg described stress state and stress trait, as a persons' response to the stress and his habit to get stressed, respectively.

Stress affects the mind, body, and behavior in many ways. Since stressor, its cognition, perception about available resources and stress response vary widely from person to person; the specific signs and symptoms of stress also vary widely (2). Some persons with stress trait and anxiety respond to usual stressors more violently, while a few resilient people respond very mildly. Stress is also defined as a state of physical, mental or emotional disturbance, in homeostasis. Stress develops due to demand-capacity imbalance in organism's homeostatic mechanisms (7). When a stressor is perceived as a threat to life and

resources available with the organism are considered inadequate to meet with the threat; stress state or anxiety arises. As a result stress response is evoked.

Stress is known to evoke 3 F reaction (freight, fight and flight) and helps one win an emergency life threatening situation (5). However when 3 F avenues, particularly avenue for fight and / or flight gets closed and stressful situation still continues, as is common these days, during chronic stress: a sympathetico–adrenal–medullary–response comes into the play (6).

Generally level of cortisol in blood is controlled by negative feed back mechanism or circadian rhythm. However plasma cortisol level rises sharply during stress and overcomes negative feed back mechanism (8). While a little stress can help keep you alert and focused, too much can inflict damage on you both psychologically and physically (9). Extreme stress may be associated with a sudden life event or buildup of chronic stress over time (10).

Studies in Medicine, particularly first year is considered very stressful. New subjects, college atmosphere, vast curriculum, alien colleagues, strict discipline, limited books, undefined curriculum and uncharted territories of performance assessment: all these add proverbial last straw on camel's back.

Studies in Physiotherapy, covers many subjects in a short period. Twenty faculties deliver lectures on different topics at various times in a week. First exposure to pain, patient and hospital, add gloom to innocent minds. Studies in Nursing + Midwifery need strict discipline and time management. Constant touch with patients and diseases, add misery to life of young girls. Strict dress code and imposed discipline add further stress on mind of young nurses.

Thus studies in Medicine, General Nursing and Physiotherapy are considered equally highly stressful. We took up stress audit of these students. We studied stress scores of students in the above branches of studies

and analyzed the same. We also offered counseling to reduce their high level of stress.

Material and methods

Looking to importance of stress and stress management, this study was financed and approved by Directorate of Medical Education and Research, Gandhinagar, for years 2007 08 and 2008 09. We are thankful to her for the same.

The study was carried out at B. J. Medical College, Ahmedabad, affiliated institutes of Physiotherapy and Nursing, Government Medical College + Hospital, Rajkot and affiliated Nursing school.

We face stress in the life, some or the other day. However we all have our own ways of responding to stress: you may be prone to crying, while some other might become irritable or suffer insomnia. Because stress is such an individual experience, it's important to know the level of stress.

Eli Bay (11), Stress Expert from Canada, classifies stress into Level 1, 2 and 3: i.e. Immediate stress (short lasting symptoms), Continued stress (minor symptoms) and Ongoing stress (can cause dysfunctions, diseases and breakdowns). Dr. Richard Earle, from the Canadian Institute of Stress, asks 20 questions and gives rating of 0, 1, 2 or 3; depending on its frequency of occurring in last one month (12). Total score 0–20, 21–40 and 41–60 suggests stress level as relatively low, moderate and occult stress. Utilizing the signs, symptoms, states and traits caused by stress, we devised a questionnaire having 10 questions and each having four answers. While teaching homeostasis and stress physiology, we presented this questionnaire to young students of different streams. Their answers formed the basis of stress audit that we carried out.

125 students of general nursing and midwifery (year 2), 75 students of physiotherapy (year 1) and 600 students of M.B.B.S. (year 1); underwent stress audit.

Prevalence of stress, methods of stress audit and the purpose of this study, were explained to the students and consent obtained.

Frequency of getting angry, feeling tired, having quarrels, getting bored, losing one's belongings and eagerness to learn new skills: were assessed on scores 0–6. (Minimum and maximum score for these 6 questions was 0 and 36.) In questions of Stress related symptoms during examinations, Prevalence of psychosomatic diseases in the family and Death in family due to stress related events; each positive response was given score of 2. (Minimum and maximum score for these 3 questions was 0 and 24.) 'At ease with self' or 'routine stress relief practices' suggested one's way of being happy and these activities were given negative rating of –2 each. (–8 to 0)

Thus the possible highest score was 60 ($6 \times 6 + 8 \times 3 - 2 \times 0 = 60$), whereas the lowest score was –8.

The scores of more than 30 and less than 0 were considered extremes on higher and lower sides of the score. Since these scores were hardly seen, these were not included in the present study. Participants were divided into having scores of 0–6 (lower score = no stress), 8–14 (lower average = minimum stress), 16–22 (higher average = borderline stress) and 24–30 (higher score = dis stress, in need of help, for stress relief).

Results

As is seen, in nursing and physiotherapy female were 88.8% and 65% respectively. In medical, out of 600, female were 34.5%. In all instances, female had higher stress levels, compared with males of the same group.

Amongst the studied groups, Physiotherapy students had lowest average stress score. Though, medical students are presumed to have more stress, in our study they had stress score lower than general nursing students (Table 1).

All categories of participants had highest number of persons in score range 08–14. This perhaps is the optimum score, which gives highest work efficiency. In the dis stress/ de stress range of score 24–30, we had 02–09 % of participants in different groups (Table 2).

During the study, we had following observations with regards to various parameters for stress (Table 3).

On an average, participants got angry at least once a day. Physiotherapy students had higher score on this count.

Most of the students felt tired on getting up from the bed, more than once per month. Medical students felt tired more frequently, may be because of strenuous reading and incomplete sleep.

Picking up an argument and quarrel was occurring once every month. Nursing students had arguments with colleagues more often.

On an average, participants felt life as boring at intervals longer than a month. Participants from physiotherapy had lowest score on this count.

Most participants were ready to learn new skills. However medical students were less inclined to do so.

Forgetting once belonging was taking place once a month. Nursing students forgot more often than others.

Most of the students had one stress related symptom during examination days. Participants from physiotherapy had highest score on this count.

Most students had one psychosomatic disease in the family. Participants from physiotherapy had highest score on this count.

Nearly one in two persons, had stress induced death in the family. Here nursing students had higher score.

All participants had one stress relief activity on daily basis. Participants from physiotherapy had highest 'at ease activity' in their life.

Table 1: Average Stress score as per gender and Branch of study.

Gender	Nursing	Physio therapy	I MBBS
Male	11.57	9.61	12.41
Female	13.06	13.51	12.92
Total	12.93	12.16	12.54

Table 2: Range of Stress score as per Branch of study.

Stress score	GNM %	Physio %	I MBBS %
00 – 06	22	23	18
08 – 14	40	51	51
16 – 22	29	24	25
24 – 30	09	02	06
No. (100%)	125	75	600
avg st score	12.93	12.16	12.54

Table 3: Stress score under different headings.

Different scores	GNM	Physio therapy	I MBBS
Anger score	2.4	2.59	2.02
Tiredness score	2.56	2.43	2.76
Quarrel score	2.48	1.65	2.03
Boredom score	1.89	1.25	1.54
Skill set learn score	0.29	0.43	1.09
Forgetfulness score	2.32	1.52	2.27
Exam symptoms	2	2.43	1.51
Family Disease	1.44	2.27	1.54
Family Death	0.69	1.12	0.69
At Ease Activity	-3.14	-3.52	-2.9
Total score	12.93	12.17	12.55

Of late, use of psychotropic drugs in adolescents, has been a burning issue. Bruce Jonas of Centers for Disease Control (CDC/NCHS), found that 6.3% of the U.S. adolescent population aged 12–19 reported use of psychotropic medication (13). Prescription drugs for ADHD (14) viz. amphetamine, atomoxetine, dexamethylphenidate, dextroamphetamine, guanfacine, lisdexamphetamine, methamphetamine, and methylphenidate: are often used by students as stimulants. However, during informal discussion, none of our participant reported use of such medicines; though they agreed to frequent consumption of tea or coffee during exam days.

Discussion

Higher stress levels, amongst girls in general, may be because of emotional nature and disciplinary conservative brought up in the family and society. Also the girls are known to react to stressors in a different manner.

Though boys had overall lower stress scores, medical boys suffered from significantly higher stress, when compared with boys of other streams. However, girls in medicine suffered significantly lower stress, than girls of other streams.

In this study, 62–74% of participants were in score range 00–14. Generally the long term university examination success rate is also seen around 70%, which corresponds well with this eu stress level of participants. The remaining 30% participants, falling under dis stress range and those with moderately high stress range: were offered stress relaxation and yoga, as therapeutic tools.

Conclusion

This study finds out stress levels in students of different medical and paramedical branches. Students found with distress levels of stress were acquainted with different relaxation techniques.

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Conflict of interest

Authors declare that there is no conflict of interest.

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