Main Educational Stressors and theirs Relationship with General Health of the Medical Residents

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Abstract

Background: *In the age of information and technology application, troublesome regulations and traditional procedures for medical education may cause serious stresses and be a threat to the general health (GH) of the students of medicine.*

Purpose: *To determine the relationship between educational stressors and the general health of residents studying at the Ahwaz Jundishapour University of Medical Sciences (AJUMS).*

Method: *. In this cross sectional study, the study group was consisted of 114 cooperative residents (69% of all residents in the hospital), who were being trained in a variety of different specialties. The instruments used were the Educational Stressors Questionnaire, including 45 four-choice items and a General Health Questionnaire. When the questionnaires were completed, the results were analyzed through Pierson Correlation Coefficient using the SPSS.*

Results: *The residents mentioned their educational stressors as follows: lack of an arranged curriculum, troublesome educational regulations, deficient educational instruments, and inadequate clinical instruction. Of all the subjects, 43 (37.6%) appeared to have problems in GH, and significantly positive correlation ($p<0.01$) was observed between educational stressors with all of the following parameters: GH, somatic problems, anxiety, and social dysfunction.*

Conclusion: *As it appeared, educational stressors can be risk factors for the students' GH, which may be followed by reduced interest, low educational performance, and failure to achieve competency in diagnostic procedures and treatment. The findings suggest basic changes in the current medical instructional techniques.*

Key Words: *EDUCATIONAL STRESSOR, GENERAL HEALTH, MEDICAL RESIDENTS, MEDICAL EDUCATION*

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Introduction

The century of information technology has imposed computer and its increasing use to human kind.The changes in the medical education methods have increased the medical students' expectations from their instructors. These high expectations,along with the troublesome educational regulations and the changes in traditional methods of medical instruction might be considered as a serious stressor. A study on the stress sources of medical students in different years has showed that the main causes of stress are: poor student-teacher relations (1), role ambiguity and conflict (2), personal and programmatic variables (3), work pressure on personal skills and attitudes(4), campus recreation and leisure satisfaction (5), lack of an arranged curriculum, the occupational problems after graduation (6), the medical school environment and curriculum (7), time management and financial issues (8),

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concern about the future, conflict with colleagues (9), poor quality supervision (10), curriculum and environment, personal competence and endurance(11). These stressors often result in individual frustration and may cause psychological problems such as depression and anxiety (10-17), especially in the ones who are unable to cope with them (18).
In the residency years, the residents have an increasing responsibility over the final decisions made for patient care. They are also required to function effectively in all kinds of physically demanding situations and are usually under a tremendous time pressure (17); another stressor in its turn. Moreover, experiencing the educational stresses that result from educational changes can be threatening for the individual's physical and psychological health and, thus, cause educational and social dysfunctions. Therefore, the present study was performed to determine the relationship between educational stressors and general health of medical residents in AJUMS.

Materials & Methods

In this cross-sectional survey, the study group was consisted of the residents studying at AJUMS. These residents of all major medical specialties work at the educational hospitals. In the first stage, the questionnaires were prepared and copied. In order to carry out the plan, two medical students were selected and trained enough to perform the sampling. Then, with official permission issued by the University Research Affairs Department, the study was carried out over two months. The two medical students went to each educational department and gave the questionnaires to the residents, providing each resident with necessary explanations. Among 165 sample residents, twenty-seven subjects were uninterested and twenty-four were out of the city either for rotation wards or on vacation. These were removed from the study. The remaining 114 residents (69.1%) completed the questionnaires. Data was then analysed with SPSS Ver. 11.5 using descriptive statistics and Pierson Correlation Coefficient. Three research instruments were used: a data form with demographic characteristics, General Health Questionnaire (GHQ), and the Educational Stressor Questionnaire (ESQ). The 28-item GHQ (19) is the most famous screening instrument in psychiatry (20), including four 7-item scales: somatic problems, anxiety, social dysfunction and depression. In a study performed in Iran, the score 6 was determined as a cut-off point, having the highest sensitivity and specificity (21). The ESQ was a forty-five item researcher-made questionnaire using the Student Life Experience Survey (22), and also an opinion poll from the residents about student life and clinical activities in hospitals. These four-point items were scored 0-3. The score limits were therefore 0-135. The reliability obtained through test-retest technique during two weeks on thirty students was 68%, which has been meaningful with a p-value of <0.01. The identity of the subjects remained confidential.

Results

Table 1: Demographic characteristics of the sample population (N=114)

Variable	Number	%
Year of Education		
First	26	22.8
Second	35	30.7
Third	34	29.8
Fourth	19	16.7
Field		
Surgery	46	40.4
Non-Surgery	68	59.6
Sex		
Male	90	78.9
Female	24	21.1
Age Range (yr)		
26-29	22	19.3
30-33	55	48.2
34-37	32	28.1
38-41	5	4.4

Table 2: The top 10 stressors based on the ESQ scoring (N=114)

N	Stressor	Total experienced stress	percent
1	Lack of an arranged curriculum	279	81.6
2	Troublesome educational regulations	263	76.9
3	Deficient educational instruments	247	72.2
4	Inadequate books and journals in libraries	236	69
5	Inadequate practical instruction by the professors	225	65.8
6	The large amount of studies	223	65.2
7	Inadequate salary	210	63.1
8	Small number of patients in the instructional wards	211	61.7
9	Concerns over professional future	209	60.13
10	Concerns over examinations	208	60.82

Table 3: The 10 least stressors based on the ESQ scoring (N=114)

N	Stressor	Total experienced stress	percent
1	Conflict with nursing unit	71	20.76
2	Personal Illness	68	19.88
3	Pregnancy (or wife's pregnancy)	67	19.6
4	Troublesome regulations in dorm	53	15.49
5	Lack of access to the professors in necessary situations	50	14.62
6	Conflicts with the personnel of operating rooms	48	14.03
7	Low interest in the field of study	44	12.86
8	Marriage	42	12.28
9	Conflicts with the dean	38	11.11
10	Death of close family member	37	10.82

Table 4: Correlation between ESQ with GHQ and its subscales using Pierson Correlation Coefficient

	GHQ	Somatic problems	Anxiety	Social dysfunction	Depression
ESQ	0.508**	0.424**	0.441**	0.339**	0.057

*Correlation is significant at the 0.01 level

Discussion and Conclusion

In the recent years, many studies have been carried out to find the relationship between individuals' life stressors and vulnerability toward physical and psychological problems. These studies have been often based on two hypotheses: first, the changes in life style usually lead the individual to a new adaptation which is a stressor by itself; and second, the ones who have experienced some degrees of changes in their lives show the higher vulnerability toward psychological and physical difficulties (22). By substitution of traditional methods of medical instruction with new ones, the assessment of diagnosis and treatment has become more

influenced by computers. In spite of the fact that the length of the residency period has remained unchanged, the amount of the study material and the variation of treatment techniques, especially in surgery, and also their application, have increased, which is another stressor. The present study has been carried out because different educational problems have been observed in recent years including reduced interest in practical activities in the wards and also the discontent of residents. Their discontent and reduced interest took place when major changes were happening in the university educational system in order to correspond with international systems.

The results show that the most serious educational stressor was mentioned as the lack of an arranged curriculum, having 81.6% of the total expectable amount of stress (279 out of 342), as mirrored in Stwart et al (7, 11) and Bossaghzadeh et al (6) studies. This study was carried out when the Internal Assessment Plan was being executed. Also, as the results show, the major educational changes caused difficulty for residents to accept the new educational regulations. This acceptance can be a major stressor for medical residents. Laying traditional methods aside, along with lack of an arranged new curriculum, have created troublesome educational regulations on one side and concerns over inadequacy of educational instruments and over the professional future on the other side. These have influenced residents, which mirrors the studies by Roscoe (3), Khann and Khann (1); Carmal and Bernstein (4) and Bossaghzadeh et al (6).

Also, the residents reported that they experienced low levels of stress with incidents such as illness, pregnancy, marriage, and divorce. The study was a survey designed to find the psychological and physical results of experiencing educational stressors caused by educational changes in addition to the residents' problems. In the residency years, the residents experience various physical stresses such as sleep deprivation, irregular meal schedules, poor nutrition, and few opportunities for relaxation and exercise (17). During the clinical years of residency, a physician in training is likely to spend more than eighty hours an week in patient care. This time is so often characterized by rushing from one patient-care activity or one charting activity to another. Interruptions are frequent and concentrated, focused thought and effort sometimes impossible (23, 24). The results showed a positive correlation between educational stressors and not being in good general health, which confirms the previous studies (7, 10, 12, 15). Just in the first year of residency, at least 30% of the residents experience serious depression (25), and there is evidence that the emotional impairment of physicians is on the increase (26, 27). Twenty seven percent of residents reported beyond-normal anxiety and 30% reported moderate or severe anxiety (28). In this study, the subjects experienced some degree of anxiety and depression. Also, approximately 16.4% of subjects were not interested in cooperation. It is possible that the influences of high stress such as depression and anxiety served as reasons for their avoidance. However, the most important limiting factor for the study was the absence of 31% of the residents desired for sampling.

As it appears, stress can be considered as a risk factor for the students' GH that may follow a reduced interest, educational failure, and failure to achieve mastering in diagnostic and therapeutic procedures. To help students progress into the residency and minimize stress we need to:

- Perform basic changes in the current medical education;
- Provide good registrar and supervisory support;
- Have a sympathetic medical administration; and
- Promote awareness of personal somatic and emotional needs.

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