EXCELLENT PUBLISHERS

# The detection of bedside teaching stressing factors in medical students in Tabriz University of medical sciences in 1391

**Lida Saboktakin[1], Ali Fakhari[2]\*, Morteza Ghojazadeh[3], Ahmad Kousha[4], Yahya Safii[5] and Rizan Ashayeri[5]**

[1]Pediatric Health Research Center, Department of Pediatric, Tabriz University of Medical Sciences, Tabriz, Iran
[2]Associate Prefessor of Psychiatry, Education and Development of Medical Science Center (EDC), Tabriz University of Medical Sciences, Tabriz, Iran
[3]Associate Prefessor of Physiology, Liver and Gastrointestinal Diseases Research Center, Tabriz University of Medical Sciences, Imam Reza hospital, East Azerbaijan, Iran
[4]Associated professor, faculty of Health and Nutrition, Tabriz University of Medical Sciences, Tabriz, Iran
[5]Medical student, Student research committee, Tabriz University of medical sciences, Tabriz, Iran
*\*Corresponding author*

| KEYWORDS | A B S T R A C T |
|---|---|
| Clinical Education, Stressors, Tabriz Medical Student | Clinical education is a complex process that is influenced by many factors and variables. Medical students at graduation are exposed with a lot of stress, which can have negative effects on learning and clinical success and the correct functioning overshadowed case to Educationalperformance and somatic disorders and behaviors undesirable in the students. The aim of this study was determine the stressful clinical education from the perspective of intern and extern medical students of Tabriz University of Medical Sciences in the year 1391. In a Descriptive-Analytical study that performed in Tabriz University of Medical Sciences on intern and extern medical students at 1391s, tressful clinical education from the perspective of intern and extern medical students of Tabriz University of Medical Sciences evaluated. Mean score of clinical experience to the stressors studied in five sections was significantly higher in female students than male students. Significantly difference was not founds between clinical experience to the stressors studied in five sections in single and married students. Mean score of humiliating experiences in the clinical learning environment, clinical experiences with stress and interpersonal relationships was significantly higher in interns than externs. Mean score of clinical experience with these stressors, however unpleasant emotions and interpersonal relationships was significantly higher among native students than non- native students. Disproportion between theoretical infromation of student with practical information performance in patient care was the most important Stressors in the compass of "Clinical experiences with stressors". Humiliating experiences in the clinical learning environment, feelings, dreams, dealing with stressors related to the clinical learning environment and area interpersonal relationships, respectivly were the areas of stress among students. |

## Introduction

Clinical education is a complex process influenced by numerous factors and variables. In clinical education the professor attends patient's bedside along with trainees, interns and residents so as to both visit the patient and discuss his/her disease (1).

Stress is an important factor in the life of any person regardless of their race and cultural background. It is the general reaction of the body to the needs of the individual. In the last few decades, numerous studies have been performed on the stress associated with clinical education and methods of coping with this stress. In fact, medical students are an important group exposed to the risk of stress, which directly affects their everyday lives (1).

Murff et al. indicated that a great deal of stress and anxiety imposed on students during the medical education may have adverse effects on the learning and clinical success of students. It will, eventually, impede their success in their struggle to attain educational goals. Moreover, the stress on medical students can also affect the care they provide to patients (2).

Marie E. Dahlin et al. analyzed the relationship between the individual and the environment with regard to the medical students' level of stress and their reaction to it. They stated that since the environment the medical students experience is completely different from the workplace of other individuals, the problems and achievements of medical students vary depending on the type and degree of stress imposed on them (3).

Visnjic et al. reported that the mental problems of students are increasing which calls for more attention and analysis (4).

Since stress and stress factors leave adverse effects on the student's understanding of clinical issues in the course of clinical education, rapid identification of these factors and assessment of the effects of stress on the physical, social and mental conditions of students as well as awareness of effective adaptive behavior may help professors reduce the negative effects of stress on students (5-6).

In the majority of studies, the stress imposed on individuals is studied and less attention has been paid to stress factors(7-10). Therefore, due to the importance of stress and stress factors as well as their effect on the achievement of educational goals, it was decided to conduct a study to investigate the stress factors associated with clinical education from the view point of students of Tabriz University of Medical Sciences. Another reason underlying this study was to educate competent and capable individuals so as to enhance the quality of health care services. The study was generally aimed at identifying the stress factors in the clinical environment in which students are involved and teaching the ways of addressing these problems. By addressing these problems and teaching the ways of dealing with them, physicians will be able to be competent and effective workforces and contribute to the development of the country following to their graduation. Universities, as the entities producing and conveying knowledge, provide the expert (specialized) human force to the society. They are obliged to constantly check their conditions and come up with solutions to enhance the quality of education by analyzing the issues, difficulties, and their causes. Clinical education is an integral and important part of medical education, without which it will be very difficult to educate efficient and competent individuals. The objective of this study was, therefore, to determine stress factors of clinical education

from the viewpoint of trainees and interns of Medical Sciences University of Tabriz.

## Materials and Methods

In a Descriptive-Analytical study, which was performed in the Tabriz University of Medical Sciences, trainees and interns of the university were studied in 2012. In this research, stress factors associated with clinical education were examined from the viewpoint of trainees and interns of the Tabriz University of Medical Sciences.

In this descriptive study, which was performed in 2012 for 18 months, all trainees and interns of the Tabriz University of Medical Sciences were studied using the all-enumeration method.

The data collection tool used in the first stage was a researcher-made questionnaire formulated based on the studies of psychological and psychiatric resources as well as opinions of psychology and psychiatry professors and medical education resources. The questionnaire was scored based on the 5-point rating scale including five scores (from very low to very high). In this research, after ensuring the validity of the questionnaire by the experts a pilot study was performed. Afterwards, arrangements were made and written consent of the participants was obtained as well. Next, after explaining the research objective to the competent trainees and interns, all of them were included in the study. Information was either gathered individually or collectively in one step at the presence of examiners in different days.

## Statistical analysis

SPSS version 16 was used as statistical software. The data was statistically analyzed using descriptive statistical methods (frequency, percentage, and mean ±standard deviation), independent samples T-test, Fischer's exact test, One-way ANOVA variance analysis, Mann-Whitney U nonparametric test. In this study, $P<0.05$ was regarded statistically meaningful.

## Results and Discussion

This study was performed on 351 clinical interns and trainees in the medical field at Tabriz University of medical sciences about stressful agents in clinical education from the perspective of trainees and interns and the following results were obtained:

44% of the students were male. The average ages of the students were $23.53\pm2.90$ and $23.57\pm1.2$ in male and female students, respectively $(P = 0.86)$.

53.2% of students were trainee and 46.8% were intern students. 86.3% of the students were single. 33% of the students were native.

There was no significant linear relationship between ages of students with score of responses of them to questions regarding the humiliating experiences of them in clinical training environment $(P = 0.23$ and $r = 0.04)$, stressors related to the clinical education environment $(P = 0.11$ and $r = 0.06)$, the unpleasant feelings $(P = 0.76$ and $r=0.01)$, interpersonal communication $(P = 0.22$ and $r = 0.06)$, but there existed a significant linear relationship between clinical experience with stressors $(p<0.01$ and $r =0.13 )$.

There was significant linear relationship between students 'scores and the above five clauses.

Evaluation of the stressors among students of both sexes were shown in table I. Evaluation of the stressors among single and

maried students were shown in table II. Evaluation of the stressors in the Intern and Externship students were shown in table III. Evaluation of the stressors among native and non-native students were shown in table IV.

According to the results presented in these tables, the average level of clinical experience of female students with the five stress factors under study was significantly higher than male students. No significant difference was also observed between clinical experiences with the five stress factors under study in married and single students. The average level of humiliating experiences in the clinical education environment, clinical experiences with stress factors, and interpersonal relationships was higher in interns than trainees. The average level of clinical experiences with stress factors, unpleasant feelings and interpersonal relationship was significant higher in native students than non-native students.

Medical students encounter many tensions during the period of their study having negative effects on students learning and clinical success overshadowing correct performance of them and causing undesirable behaviors and academic drop and physical disorders in students (11).

Since the first step to fix the problems is knowing them, those involved by the training should identify and introduce the factors affecting the quality and quantity of clinical training, as well as negative factors or hindrances to teaching. Environment is one of the effectual factors.

Today, learning theories emphasize the importance of learning environment on students' learning very clearly (12). Achieving satisfactory learning yields is impossible without the existence of learning environment with healthy elements (13).

Planning for the clinical education is regarded an essential part of the medical education in the creation of the necessary skills and capabilities in students of medical sciences. The existence of any problem in clinical education will disturb the efficacy of this part of education and stress is one of the obstacles (14).

Most scientists agree that the incidence of stress can induce persons to change or compromise their position that could be whether effective or ineffective (7). Stress is a factor leading to change in the internal stability of the body causing disturbances and metamorphisms in the order of the body. Stress is an inherent component of life which can cause direct and indirect positive or negative effects in functional competence and individual health during a progressive process.

Dehqani et al. stated that according to the tutors and students, the biggest problem in internship is the inadequacy of the facilities of the clinical environment (15). DelAram stated that lack of facilities in this section is among the most important weaknesses of clinical education in the eyes of medical students (9).

In this study, the lack of proportion between students' theoretical information and their real-life performance in taking care of patients was the most important stress factor. Nazari (16) and Saki (17) stated that the most important stress factor for students is the warnings given in the presence of personnel and physicians (16).

Timmins et al. stated that the inappropriate relationship between tutors and students is

among the stress factors influencing the stress levels of students (18).

In this study, humiliations in the education environment were shown to be the second most important stress factor in clinical education. The most important stress factors were the scornful tone used by personnel to address students and the scornful tone used by professors in warning students.

Inappropriate interactions between students and tutors and lack of a proper relationship between tutors and students can also affect all stress factors in the clinical environment (19).

"Unpleasant feelings" was the third most important stress factor in the clinical environment. In addition, "dominance of humiliation over training courses" and "concern for transmission of contagious diseases of patients" were also the most important sources of stress in students.

One of the most important concerns of medical students in clinical environment is the fear of transmission of infectious disease (20). A study was performed to assess the viewpoints of anesthesiology and operating room students on the stress situations experienced in the first clinical experience. In this study, the fear of catching different diseases such as AIDS and hepatitis was introduced as a stress factor in the clinical environment (21). This can be perhaps ascribed to students' lack of awareness about the ways of transmission of contagious diseases and the use of protective equipment (gun, mask, gloves, and glasses) or the non-use of this equipment due to shortages of clinical educational environments.

Taqavi et al. stated that the concern for transmission of contagious diseases is the most important source of stress leading to unpleasant feelings (22). The fourth source of stress in the clinical education environment was "facing stress factors associated with clinical education environment". In this regard, the "lack of clinical education proportional to the needs of students" and "the presence of a large number of students at the bedside" were the most important stress factors.

The last most important source of stress was "interpersonal relationships" in the view of students. In this regard, the "discrimination practiced by professors in dealing with students" and the "lack of support of professors for trainees and interns" were the most influential stress factors. Rahimi et al. stated that the lack of support of tutors for students in the clinical environment is among the most important problems associated with clinical education environments (23). Moreover, Berim Nejhad et al. reported that the lack of support of tutors for students was one of the biggest problems of students in clinical environments (24).

These results reflect the importance of studying the relationship between professors and students. It is worth noting that the key to the progress of students is in the hands of tutors, who should know that it is very important to treat students properly as it can make the students develop an interest for the clinical learning environment.

Students always expect their tutors to expect treat them properly. They also expect the tutors to be equipped with the latest scientific information and findings.

**Table.1** Evaluation of the stressors among students of both sexes

|  | Sex | | P |
|---|---|---|---|
|  | Male | Female |  |
| The humiliating experiences of them in clinical training environment | 24.45 ± 5.65 | 25.92 ± 5.66 | 0.01 |
| Stressors related to the clinical education environment | 17.82 ± 3.48 | 19.00 ± 4.51 | <0.01 |
| The unpleasant feelings | 29.64 ± 6.43 | 32.57 ± 6.37 | <0.01 |
| Interpersonal communication | 21.47 ± 4.34 | 24.08 ± 4.36 | <0.01 |
| Clinical experience with stressors | 17.05 ± 3.62 | 18.70 ± 3.69 | <0.01 |

**Table.2** Evaluation of the stressors among single and maried students

|  | Marital status | | P |
|---|---|---|---|
|  | Single | Married |  |
| The humiliating experiences of them in clinical training environment | 25.21 ± 5.67 | 25.82 ± 5.97 | 0.50 |
| Stressors related to the clinical education environment | 18.50 ± 4.17 | 18.64 ± 3.78 | 0.82 |
| The unpleasant feelings | 31.31 ± 6.50 | 31.68 ± 6.76 | 0.73 |
| Interpersonal communication | 22.90 ± 4.39 | 23.11 ± 5.41 | 0.80 |
| Clinical experience with stressors | 18.00 ± 3.73 | 17.90 ± 3.86 | 0.88 |

**Table.3** Evaluation of the stressors in the Intern and Externship students

|  | Grade | | P |
|---|---|---|---|
|  | Intern | Externship |  |
| The humiliating experiences of them in clinical training environment | 25.90 ± 5.34 | 24.68 ± 5.98 | 0.04 |
| Stressors related to the clinical education environment | 18.71 ± 4.80 | 18.30 ± 3.43 | 0.35 |
| The unpleasant feelings | 32.17 ± 5.49 | 30.56 ± 7.20 | 0.03 |
| Interpersonal communication | 22.82 ± 4.57 | 23.05 ± 4.53 | 0.64 |
| Clinical experience with stressors | 18.47 ± 3.78 | 17.53 ± 3.68 | 0.02 |

**Table.4** Evaluation of the stressors among native and non-native students

| | Location | | P |
|---|---|---|---|
| | Native | Non-native | |
| The humiliating experiences of them in clinical training environment | 25.49 ± 5.80 | 25.19 ± 5.61 | 0.64 |
| Stressors related to the clinical education environment | 18.86 ± 3.06 | 18.27 ± 4.56 | 0.21 |
| The unpleasant feelings | 32.67 ± 5.68 | 30.72 ± 6.72 | <0.01 |
| Interpersonal communication | 24.11 ± 4.14 | 22.37 ± 4.64 | <0.01 |
| Clinical experience with stressors | 18.47 ± 3.69 | 17.81 ± 3.73 | 0.03 |

Due to the negative effects of stress on health and performance of medical students, university and faculty authorities should consider stress management in their planning on introducing the clinical education environment to the students.

They must at least introduce the known sources of stress in the clinical education environment (similar to this study) to students. Moreover, students need to be assisted by accessible facilities within universities/faculties, which inform them of sources of stress in the clinical education environment and the means of coping with these stress factors in the course of education.

However, these goals cannot be attained without workshops on stress and ways of coping with it.

The role of clinical tutors shall not be overlooked as well. Since clinical tutors can play a valuable role in reducing the stress and facilitating learning of students of clinical education, it is possible to take a precious step toward the reduction in students' stress by teaching clinical skilled students.

According to the results and importance of assessment of clinical education environment and its effect on the improvement of clinical learning of students, increased clinical skills, increased self-confidence, and development of an interest in the field, it is important to consider this issue.

Results of the study by Dahlin and Lindop suggest that stress increases with an increase in the skillfulness of students (25-26).

**Conclusion**

Lack of compliance of students' theoretical information and their real-life (practical) performance in taking care of patients, is the most important source of stress. Therefore, clinical experiences with stress factors were the most important stress factors. Humiliating experiences in the clinical education environment, unpleasant feeling, facing stress factors associated with clinical education, and interpersonal relationships were, in the order of appearance, among the sources of stress for students. The average level of clinical experience with the five stress factors under study was significantly higher in female students. However, no significant difference was observed between the average clinical experiences with the five stress factors under study in married and single students. The levels of

humiliating experiences in the clinical education environment, clinical experiences with stress factors, and interpersonal relationships were significantly higher in interns than trainees.

The average level of clinical experiences with stress factors, unpleasant feelings and interpersonal relationships was significantly higher in indigenous students than non-native students.

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