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## THE EFFECT OF PSYCHIATRIC EDUCATION ON THE ATTITUDE OF MEDICAL STUDENTS OF GUILAN UNIVERSITY OF MEDICAL SCIENCES TOWARD PSYCHIATRY

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### Keywords:

Psychiatry, Education, Attitude, Medical students

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**ABSTRACT: Introduction:** While many medical students have a special talent in psychiatry, attracting them to this specialty is a problem. The purpose of this study was to examine the impact of psychiatric education on the attitude of medical students on psychiatric patients. **Method:** In this observational study, 200 medical externs and interns were recruited. Before and after attending the 4-week psychiatry education course, the subjects were asked to express their attitude, knowledge, and experiences concerning psychiatry by completing the attitudes toward psychiatry (ATP-30) and the 6-item psychiatric experience, attitudes, and knowledge (PEAK-6) scales. Twenty-six subjects didn't meet inclusion criteria or answered incompletely to the questionnaires Data were analyzed by t-test and paired t-test. All statistical assays were performed with SPSS19. **Results:** The average age of participants was 24.86 ± 1.85 years. Of the 174 students who were finally evaluated, 84 were externs (25 male, 59 female) and 90 were interns (35 male, 55 female). A significant statistical difference was found between the mean scores of PEAK-6 among the students before and after psychiatric education (P < 0.001). However, we couldn't reveal a significant difference between ATP-30 scores before and after education (P = 0.25). **Conclusion:** We showed a significant difference between the mean scores of PEAK-6 not ATP-30 in the medical students before and after psychiatry course. It may be due to better sensitivity of the PEAK-6 in the detection of changes in attitudes toward psychiatry. We recommended larger studies to discover predicting factors lead to an improvement in attitudes toward psychiatry.

**INTRODUCTION:** Psychiatry is one of the medical specialties that deals with issues related to behavior, emotions, and prevention as well as treatment of human mental disorders. Over the last century, psychiatry has major developments in diagnosis, classification, assessment, and treatment of mental disorders. The inclusion of psychiatry as a core curriculum in medical education is now an accepted component of all medical courses.

Despite the integration of psychiatry and behavioral science in the preclinical and clinical periods, medical students' attitudes toward psychiatry and psychiatry as a career option have been negative for decades. The attitude of medical students about psychiatry and psychiatric patients is important for several reasons. First, they are future physicians who would supervise and direct other healthcare professionals. Second, a previous study showed that the attitude of graduated physicians is more developed and resistant to change <sup>1</sup>. Then educational interventions are more effective on undergraduates rather than medical graduates,

The attitude of medical students on psychiatry is affected by factors such as job opportunities, credibility and influence, income, and advanced

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educational prospects<sup>2</sup>. Previous studies have pointed out that medical students have a negative attitude toward psychiatry and psychiatric diseases and believe that psychiatrists are dissatisfied with their work<sup>3</sup>. The negative attitude toward psychiatry makes it unattractive to medical students<sup>4</sup>. Moreover, most students believe that health care providers for psychiatric patients are at a lower socioeconomic status<sup>5</sup>.

Pailhez *et al.*, (2005) explored the impact of psychiatric education on modifying the attitudes of Spanish and American medical students toward this field. The results demonstrated that education could modify the negative attitude of medical students<sup>6</sup>. In another study, Hofmann *et al.*, (2011) at the University of Hamburg, Germany, investigated the impact of education on the attitude of medical students toward psychiatrists and people with mental disorders. They reported that participation in the psychiatric course might positively influence students' knowledge, experience, and attitude toward psychiatry, but not toward psychiatric patients<sup>7</sup>. Some researchers documented that participation in the psychiatric course could change attitude more in externs versus interns, male versus female, and married versus single<sup>8, 9, 10, 11, 12</sup>.

In most medical schools of Iran, medical undergraduate education takes a minimum of 7 years traditionally and includes "basic sciences" period, "physiopathology" period (theoretical aspects of different common diseases) "extern or stager" period (learning practical aspects of diseases at the patient's bed), and "internship" period in which students are responsible for the diagnosis, treatment, and management of their patients in the hospitals.

Psychiatry education is restricted to two units in extern and internship periods. During the 4 weeks extern period, students introduce semiology and different psychiatric disorders. During the 4 weeks internship period, students involved with history taking, diagnosis, and management of psychiatric patients. The medical school of Guilan University of Medical Sciences (GUMS) is an important medical school in North of Iran. In GUMS, the content of both periods included non-clinical and clinical teaching. In the extern period, we use lectures, seminars, case presentation, exposure to

adult inpatient wards / outpatient clinics and ward round. In addition to these activities, interns participate in a journal club, history taking and interviewing skills and are exposed to the emergency department. According to a prevailing negative attitude toward the psychiatry in the juniors<sup>13, 14</sup> and need to change of their attitude, the aim of this study was to address the question of whether a psychiatric course in Guilan University of Medical Sciences is effective on improving the attitude of medical students towards psychiatry.

**MATERIALS AND METHODS:** In an observational study, we recruited the externs and interns of Guilan University of Medical Sciences (GUMS) who referred to the Psychiatry Department, Shafa Hospital, Rasht, Iran from September 2016 to August 2017. The psychiatry course for externs and interns includes lecture sessions and bedside teaching in 4 weeks. Inclusion criteria comprise to be native medical students of GUMS, to pass the extern course of psychiatry at GUMS, and to have a normal profile of mental health (assessing with Symptom Checklist-90-Revised). After taking informed consent, the subjects asked to fill questionnaires before and after psychiatry course.

Approval for the study was obtained from the Review Board of the GUMS, Iran, which complies with the International Guideline for Human Research protection as required by the Declaration of Helsinki (No: 95040117).

The questionnaires consist of demographic questions, the Attitudes toward psychiatry (ATP-30) as well as the 6-item psychiatric experience, attitudes, and knowledge (PEAK-6) questionnaires. The Symptom Checklist-90-Revised assesses nine different dimensions of mental health including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism<sup>15, 16, 17</sup>.

Burra *et al.*, developed the attitudes toward psychiatry (ATP-30) which has 30 positively and negatively phrased items. The ATP-30 measure the strength of the respondent's attitude toward various aspects of psychiatry. Each item has a 5-point Likert scale, from "strongly agree" (1) to "strongly disagree" (5). The higher the score, the more

positive the attitude (minimum score: 30, very negative attitude; maximum score: 150, very positive attitude)<sup>18, 19</sup>. The Medical Research Team at Hamburg University developed a multidimensional questionnaire known as PEAK-6.

This questionnaire assays the attitudes, experiences, and opinions of individuals concerning mental disorders. Each item has a 7-point Likert scale, range from "absolutely disagree" (1) to "absolutely agree" (7)<sup>7</sup>. Quantitative data were expressed using mean, and standard deviation and qualitative data were described in percentage. We used the paired t-test to compare the ATP-30 and PEAK-6 scores of students before and after the psychiatry course. We used a t-test to compare mean change scores of the ATP-30 and the PEAK-6 before and after the psychiatric education in different sub-groups (extern versus intern, male versus female, single versus married). The Bonferroni correction was considered for all p-values. Moreover, the impact of psychiatry course on each question of PEAK-6, Cohen's d effect size was calculated. Cohen's d was measured by dividing the difference in means by standard deviation. All analyses were performed by using SPSS 19.

**RESULTS:** A total of 200 medical students (95 externs and 105 interns) participated in this research. The average age of participants was 24.86 ± 1.85 years. The minimum and maximum age of the study subjects was 22 and 35 years. Nineteen out of 200 students did not fill the questionnaires. Also, seven students (3.5%) did not have a normal profile in the SCL90-R. So, we analyzed the data of 174 subjects. The demographic characteristics of the subjects were shown in **Table 1**. We did not

observe a significant change in the ATP-30 scores before and after the psychiatry course in the subjects or subgroups **Table 2**. Also, there were no significant differences in the mean change of the ATP-30 scores between the intern and extern (P=0.38), male and female (P=0.96), or married and single students (P=0.26). However, the medical students had significantly higher scores in all items of the PEAK-6 after psychiatry course **Table 3**.

**TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF MEDICAL STUDENTS**

variables		Frequency (percent)
Study course	Extern	84(48.3)
	Intern	90(51.7)
sex	Male	60 (34.5)
	Female	114 (65.5)
marital status	Single	147 (84.5)
	Married	27 (15.5)

**TABLE 2: COMPARISON OF ATP-30 SCORES OF MEDICAL STUDENTS (n = 174) BEFORE AND AFTER THE PSYCHIATRY COURSE**

ATP-30	Before	After	P-value
Extern	89.25±7.33	91.45±7.54	.67
Intern	87.18±7.22	90.24±7.38	.25
Male	92.90±8.24	93.36±6.63	.74
Female	91.04±7.39	92.12±6.07	.24
Single	91.59±7.41	92.69±6.45	.17
Married	91.78±5.29	92.18±9.39	.86
Total	91.68±7.72	92.54±6.28	.25

**TABLE 3: COMPARISON OF PEAK-6 SCORES OF MEDICAL STUDENTS (n= 174) BEFORE AND AFTER THE PSYCHIATRY COURSE**

PEAK-6	Before	After	P-value
Extern	19.68±5.58	25.94±4.83	<.001
Intern	21.22±5.18	25.46±4.89	<.001
Male	20.91±5.43	25.55±5.11	<.001
Female	20.37±5.74	25.77±4.73	<.001
Single	20.22±5.54	25.45±4.87	<.001
Married	22.22±5.85	26.93±4.61	<.001
Total	20.55±5.63	25.7±4.85	<.001

**TABLE 4: COMPARISON OF THE SCORES OF PEAK-6 QUESTIONS AS ANSWERED BY MEDICAL STUDENTS (n = 174) BEFORE AND AFTER THE PSYCHIATRIC INTERVENTION**

Questions	The beginning of the course	End of the course	Effect size (Cohen's d)	p-value
My knowledge of psychiatry is	3.45±1.15	4.44±0.99	.64	<.001
My experience with psychiatry is	2.77±1.2	3.80±1.18	.60	<.001
My knowledge of individuals with mental disorders is	2.93±1.11	3.95±1.05	.69	<.001
My experience with individuals with mental disorders is	2.76±1.24	3.72±1.29	.55	<.001
My attitude toward psychiatry is	4.71±1.44	5.26±1.11	.32	<.001
My attitude toward individuals with mental disorders is	3.93±1.36	4.52±1.08	.35	<.001
Total	20.55±5.62	25.69±4.84	.71	<.001

Again, there were no significant differences in the mean change of the PEAK-6 scores between subgroups (interns versus externs,  $P=0.08$ ; male versus female,  $P=0.47$ ; married versus single,  $P=0.73$ ). Further analysis of the items of the PEAK-6 showed the highest effect sizes (Cohen's  $d$ ) in the items 1 and 3. The medical students had a lower score in items 5 and 6 than others **Table 4**.

**DISCUSSION:** This study aimed to explore the effect of psychiatry course on the attitude of students towards this field. Our data on attitudes from the PEAK-6 was in line with previous studies <sup>2, 7, 20</sup>, showing the majority of students had positive attitudes towards psychiatry, which were positively correlated to the quality and quantity of teaching. Students in this study showed a positive attitude towards psychiatry possibly due to the subject being introduced during the extern and internships periods with mixed non-clinical and clinical teaching approaches. Lyons <sup>21</sup> performed a systematic review in 2014 to assess the impact of the clerkship on student attitudes. 16 out of 26 studies reported an improvement in attitudes towards psychiatry post-clerkship. Previous studies showed that the implementation of creative and novel programs, and the availability of elective options for students who have performed well in clerkships or expressed a particular interest in psychiatry increase recruitment <sup>22, 23, 24, 25</sup>.

Another factor such as the relationships between students and teachers, curriculum content and teaching methods could improve attitudes toward psychiatry <sup>26</sup>. We could not compare our results with previous studies directly due to differences in the methodologies of the studies and the level of training of the participants. Although we found a significant difference between the mean scores of PEAK-6 in the medical students before and after psychiatry course, we could not observe a significant change in the subjects' attitude toward psychiatry. The ATP-30 results revealed that psychiatry course could not improve attitudes of the medical students. These results are in line with previous studies <sup>2, 7</sup>.

Previous studies <sup>27, 28</sup> revealed that ATP-30 results vary strongly and without relating the characteristics of the curriculum. Also, there are some conceptual difficulties in ATP-30 and content-related special

characteristics <sup>7</sup>. ATP-30 results are usually reported regardless of the outcome of the curriculum <sup>27</sup>. On the other hand, the PEAK-6 might allow for statements about the examined population's attitudes toward individuals with mental disorders, knowledge of psychiatry, and individuals with mental disorders, as well as experience with psychiatry and individuals with mental disorders.

Hofmann *et al.* noted that the PEAK-6 has better sensitivity in the detection of changes in attitudes toward psychiatry <sup>7</sup>. Some studies have proposed that the negative attitude was not the only reason for refraining from choosing this field for one's future career; in fact, other reasons, such as low employment opportunities for graduates of this field and its stereotypical social tags play significant roles in this regard <sup>12</sup>. However, job dissatisfaction among the old practitioners of this field due to the low income, negative attitudes, and antipsychiatry atmosphere in the community is an influential and inescapable factor in the kind of decision students and medical graduates make regarding their will to choose this field as a future career.

In this study, the attitude of the study subjects toward psychiatry was examined concerning demographic characteristics. There was no statistically significant difference between subgroups before and after the intervention. In contrast with previous studies <sup>2, 9, 14, 29-33</sup> we showed no greater improvement in attitudes in female students. Early clinical exposure in GUMS may probably exert some influences on the attitudes of male and female students and negotiate the difference between them. The further analysis of the PEAK-6 questionnaire illustrated that the maximum effect size is related to questions 1 and 3. These questions are about students' knowledge of psychiatry and mental illnesses. The results illustrated that the psychiatry course had changed participants' knowledge and attitude toward this discipline.

Several limitations of our study have to be mentioned. This study recorded a high response rate when compared to most other similar studies. Although students may have felt obliged to participate, it is unlikely that this fact contributed



greatly to the high response rate as anonymity was strictly maintained. This study was the inability to show which aspects of the clinical rotation influenced the attitude of the students. Also, Sivakumar *et al.*,<sup>34</sup> noticed that a positive change in attitudes of the students immediately after the rotation might be transient. Another limitation of this study could be its reliance solely on information obtained from two questionnaires. Different answers could be found with face-to-face interviewing. Moreover, our study population was confined to one medical university. Therefore, it is likely to achieve different results by conducting such a study in other medical universities.

**CONCLUSION:** Various studies should be conducted to discover which educational strategies or specific student-teacher relationship lead to an improvement in attitudes toward psychiatry. So, replicating similar studies at other universities could yield more useful information and assist in improving the quality of undergraduate training in psychiatry in Iran. We recommended to design and implement a longitudinal study for predicting other effective factors in choosing psychiatry as a future career.

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