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Does Medical Education Influence the Attitudes of Medical Students Towards Individuals with Mental Health Problems?*

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Abstract

Objective: *This survey aimed to investigate the effect of medical education on the attitudes of students towards individuals with mental health problems.*

Method: *The first phase of the survey was conducted in 2002 with first-year medical students (n = 168) and the second phase was carried out in 2007 (n = 202) with sixth-year medical students. The questionnaire we used collected the students' sociodemographic data and their responses to propositions that reflected their attitudes towards individuals with mental health problems. A composite attitude index was developed based on the questions and propositions. The chi-square test and variance analysis were used to analyze the data.*

Results: *Mean age of the first-and last-year students was 18.25 ± 0.88 and 23.46 ± 0.85 years, respectively. The percentage of students that had mental health problem or had a family member with mental health problem increased when they were sixth-year students (first year: 4.2% and 14.3%, p = 0.187, and 7.4% and 27.7%, p = 0.002, respectively). Among the first-year students, "nervousness" was the most common feeling towards people with mental health problems, versus "pity" among the sixth-year students. Compared to the first phase of the study, the frequency of the opinion, "a person with a mental health problem must be cared for by their family", was higher during the second phase (from 49.4% to 64.9%, p = 0.003). The percentage of sixth-year students that thought people with mental health problems can adapt to social life was lower than that of first-year students (94.6%, and 88.6%, respectively, p = 0.040). When the students became sixth-year students they developed more positive attitudes, such as "to abstain to talk" (p = 0.015), and "to share a room" (p = 0.008), and more negative attitudes towards "marrying an individual that had a family member with a mental health problem" (p = 0.007) compared to when they were first-year students. According to the year of education, there wasn't a significant difference between the mean composite attitude index score (p = 0.940).*

Conclusion: *We recommended the use of new training methods to develop positive attitudes among medical students towards individuals with mental health problems.*

Key Words: *Medical student, mental health, attitude*

INTRODUCTION

Mental, behavioral, and psychosocial disorders account for 14% of all diseases worldwide and affect approximately 450 million individuals (World Health Report, 2002; Prince et al., 2007). While attempting to make use of limited treatment opportunities (The WHO World Mental Health Survey Consortium, 2004), these people also try to cope with the negative attitudes of the general public (World Health Report, 2002).

Lifelong gained attitudes that are formed as a result of emotions, experiences, and knowledge are generally described as the tendency to respond in a negative or a positive way against certain objects or object groups (Oskamp and Schultz, 2004). In addition to these daily characteristics, attitudes develop from the intersection of personal experience, and cultural characteristics of a society and personal beliefs; therefore, such factors as age, gender, social class, ethnic origin, and living in a rural/

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urban environment can affect the formation of attitudes (Kuey, 1995). Attitudes shape in cognitive, emotional, and behavioral dimensions (Aker et al., 2002; Oskamp and Schultz, 2004). Because attitudes are recognized through behaviors in communication course, they are perceived and evaluated through behaviors (Aker et al., 2002; Oskamp and Schultz, 2004). It is noted that attitudes begin to shape, in other words they are learned, around three years of age during the development process, and their tendency to maintain for long periods it is hard to change them (Kuey, 1995; Scrambler G, 1998; Aker et al., 2002; Oskamp and Schultz, 2004).

Prejudice and stigmatization are notions associated with attitude. Prejudices are defined as negative opinions or attitudes towards objects with a psychological property, whereas they become apparent by the social distance towards the object of prejudice. Stigmatization can be described as discriminatory and dismissive approaches directed to a characteristic of an individual, which is regarded as different, negative, and contradictory compared to the society's general characteristics (Byrne, 1999; Corrigan et al., 2001). Negative attitude towards people with mental disorders dates back to old ages. Although the content varies from culture to culture, since behavior of people with mental disorders cannot be predicted and they are regarded as threats to others' safety, fear, and distance themselves or stigmatization became widespread (Aker et al., 2002). While negative attitudes prevent socialization of people with mental health disorders, they also limit their opportunism for marriage, rights of having child and work, employment, finding a house, and living close to other people and being neighbors (World Health Report, 2002). Moreover, negative attitudes may inflict a reluctance to make a monetary contribution for the treatment of mental disorders, which reduces the chance of treatment for people in need (World Health Report, 2002). Furthermore, negative attitudes lead society to under-fund the treatment of mental disorders, and affect access to treatment and care for sufferers of mental illnesses. Additionally, because of their influence on the decision of patients to seek healthcare and comply with treatment, the attitudes of healthcare workers also have crucial importance. Difficulties experienced in reaching the required treatments, exercises a destructive effect on the self-respect and self-confidence of people with mental health problems as well as increasing their sense of isolation and hopelessness (World Health Report, 2002).

Mental health disorders constitute an important problem in Turkey, just as they do all over the World. The Mental Health Profile of Turkey states that 17.2% of the population aged 18 years and over, and 10% of children and adolescents, have a mental disorder (Erol and Şimşek, 1998; Kılıç, 1998). According to the National Disease Burden Study, among adults and adolescents between the ages of 15-59 unipolar depressive disorders alone constitute 7% of health problems nationwide (T.C Sağlık Bakanlığı Refik Saydam Hıfzısıhha Merkezi Başkanlığı Hıfzısıhha Mektebi Müdürlüğü, 2007). The most important finding in The Mental Health Profile of Turkey is that only few of those people had the opportunity to receive treatment (4.7% of adults and 0.3% of children and adolescents). According to the same report, 20.7% of people with mental health disorders visit a general practitioner to receive a treatment for a mental disorder (Erol and Şimşek, 1998; Kılıç, 1998).

The prevalence and multidimensional characteristics of mental health problems require various interventions. In the context of this understanding, the Mental Health Policy of the Republic of Turkey was developed in 2006. The twelfth chapter of the policy document comprises the fields of education, research, and manpower associated with the mental health area. According to this document, the number of people working in the mental health area is inadequate, their distribution throughout the country is unequal, and educational standards are insufficient. Considering that general practitioners work at the level of primary healthcare, increasing the number of subjects on mental health and mental disorders in the curriculum of medical faculties has been included among the strategies generated to bring about a solution to the issue (T.C. Sağlık Bakanlığı, 2006).

In the recent studies performed in our country, general practitioners have been found to sometimes demonstrate a negative attitude and distance themselves from patients with mental disorders such as schizophrenia and depression (Üçok et al., 2001; Aker et al., 2002; Yenilmez et al., 2002; Özmen et al., 2003; Yıldız et al., 2003). In light of those results, we can say that, in Turkey, there is a great need for physicians who will serve at the primary health care level who will diagnose and treat mental disorders with an ethical approach and a positive attitude, and refer those cases to proper institutions when required to. Therefore, training in the skills necessary to diagnose and treat patients with mental disorders with a positive attitude, paying respect to human rights, and using an ethical approach, should be given to physicians at the undergraduate level (Ulusal Çekirdek Eğitim Programı, 2009). In this regard, it can be said that the attitudes of medical students, as the physicians of the future, towards mental diseases has critical importance. The attitudes of medical students towards

mental health and mental diseases have been shown to be reflective of the society they live in and these can be negative. The effect of the medical education received is noted to vary depending on the society the student lives in, his socio-demographic characteristics, and the characteristics of the medical education received (Arkar and Eker, 1997; Mino et al., 2001; Reddy et al., 2005; Dixon et al., 2008). Moreover, methodological causes, such as the research methodology employed, are regarded as factors affecting the results. Therefore, the results of studies investigating the attitudes of medical students towards mental health, people with mental disorders, and psychiatric specialization, in our country and others vary somewhat.

While some studies show that medical education alone affects the attitudes of students in a positive way (Keane, 1990; Baxter et al., 2001; Birdoğan and Berksun, 2002; Ay et al., 2006), there are also studies that indicate the opposite (Arkar and Eker, 1997; Singh et al., 2002; Yanık et al., 2003;). In view of this fact, it can be claimed that in order to produce students having positive, or at least, somewhat improved attitudes towards mental diseases, multidimensional approaches encompassing both sociological and medical education factors, are required (Üçok, 2007). Due to the difficulties of changing attitudes, and in order to bring a primary prevention approach to the problem, the main goal should be interventions that can prevent the stigmatization of individuals with social health disorders at the societal level.

At the Hacettepe University Faculty of Medicine (HUFM), the program organized for mental health and diseases includes the following compulsory courses within the six-year medical training period: 14 hours of theoretical education in the first-year; 150 hours of theoretical education within context of neurological sciences and psychiatry alongside problem-based learning sessions on diagnosis and treatment of common mental disorders such as depression, in the third-year; 180 hours (6 week long) of clinical education led by pediatric and adult mental health divisions in the fifth-year; and aproximately120 hours (4 week long) of hands-on training in the adult mental health division, during which the students attend case discussions and seminars with the academics, play active roles in the diagnosis and treatment of inpatients and outpatients, and take part in shifts alongside residents (Hacettepe Üniversitesi Tıp Fakültesi 2008-2009 Eğitim Yılı Öğrenci Rehberi, 2008). Prior to graduation from HUFM, there are no theoretical or hands-on training sessions concerning attitudes towards people with mental disorders, prejudice and stigmatization processes, or lessons to improve attitudes toward mental patients.

Our study was designed and performed to evaluate the attitude and behavior of first-year and sixth-year HUFM students towards individuals with mental disorders following those approaches and trainings.

MATERIAL AND METHOD

This descriptive epidemiological study was conducted in two stages. The first stage of the study was performed at the beginning of the 2002-2003 academic year. First-year students commencing their medical education in Turkish and English medical faculties constituted the universe of the study. The second stage of the study was carried out six years later, in 2007, when they became sixth-year medical students. The questionnaire, administered at a six-year interval, was comprised of questions aiming to evaluate the students' personal experiences, thoughts, and feelings towards people with mental health problems, while including specific questions related to the first and sixth years of medical education. During the first survey in 2002, there were 298 first-year students in the HUFM. We were able to reach 168 (56.3%) of those students. In 2007, the number of students in the sixth-year was 363. We succeeded in reaching 202 (55.6%) of those. Among the sixth-year students included in the study, there were 146 students who had completed the first year of their medical education in HUFM.

The required approvals for the study were obtained from the Dean of HUFM. At the data collection phase, the aim of the study was explained to the students and their participation was on a voluntary basis. Participants' names were not asked. The data of the study was collected from the first-year students, before the commencement of behavioral sciences courses at the beginning of the academic year and from the sixth-year students, after the end of the adult psychiatry internship. First-year students were contacted during a course in the lecture hall with the permission of the academic in charge, whereas sixth-year students were contacted at their internship locations. The questionnaires were taken back after being filled out by the students. The students were offered neither reward for participation nor punishment for abstention. Our questionnaire was comprised of three questions and eight propositions, all of which aimed to determine their attitudes towards people with mental health problems. These questions and propositions were designed by the researchers with regard to other national and international questionnaires and scales. The ques-

tion "Can a person with a mental health problem be treated?" was presented to the students with three possible answers: "yes", "no", and "undecided". The questions, "Is it possible for a person with a mental health problem to adapt to social life?" and "Is it possible for a person with a mental health problem to succeed in school and professional life?" were presented with the following five choices: "yes, totally", "yes, somewhat", "yes, but not much", "no, it's too difficult", and "no, definitely not". The students responded to all the propositions developed to determine their attitudes towards people with a mental health problem according to five Likert-type choices: "Strongly disagree", "Disagree", "Undecided", "Agree", and "Strongly agree".

Data collected through the questionnaire was entered into the computer through SPSS 10.0 and SPSS 15.0 package programs, data quality control was performed by administering consistency checks between the minimum and maximum values, and related questions. "Yes" answers to each attitude question were scored at "1" point, whereas "no" and "undecided" answers were scored at "0" points. In the analysis phase, the answers given to the propositions were reduced to three groups as "Agree", "Undecided", and "Disagree". In order to develop a composite index from those propositions that would produce a total attitude score, undecided and negative answers were given "0" points each, whereas positive answers were awarded "1" point. Overall, the maximum and minimum possible scores in this composite index were "11" and "0", respectively.

The data was analyzed by percentage distributions, and measures of central tendency, and evaluating the relationship between discrete variables with a chi-square test, while using variance analysis for the assessment of the association between continuous variables. The scores in the generated composite attitude were indexed with regard to student's gender, phase, and the type of settlement where the student had spent his/her childhood (rural/urban). Personal experience of mental health problems and the presence of a family member with a mental health problem were analyzed with Student's t test and variance analysis. Tukey test was used as a post hoc test in the variance analyses; results within the 95% confidence interval with a p value lower than 0.05, were recognized as statistically significant.

RESULTS

The mean age of first-year students in 2002 was 18.25 (SS=0.88), whereas it was calculated to be 23.46 (SD=0.85) for the sixth-year students in 2007. The majority of the study groups, both in the first-year and the sixth-year, were comprised of female students (52.4% and 54.5%, respectively, p = 0.690). Most of the students joining the study in the first-year and the sixth-year had urban backgrounds (72.0% and 80.7%, respectively, p = 0.145). In both groups, the majority of the parents of the students had an education level of high school or above (p = 0.044 and p = 0.004, respectively). While 84.5% of fathers of the first-year students were working, the proportion of working fathers for the students in the sixth-year was 74.3% (p = 0.006). One of every three mothers in the first-year group and one of every four mothers in the sixth-year group were found to be working (p = 0.016). While 2.4% of students in the first-year were only children, all the students in the sixth-year had at least one sibling (p = 0.020) (Table 1).

The students who had experienced a mental health problem constituted 4.2% of the first-year group and 7.4% of the sixth-year group (p = 0.187). Of the first-year group 14.3% and of the sixth-year group 27.7% had a family member having a mental health problem (p = 0.002). 6.5% of the first-year group had friends with a mental health problem and 10.4% of the sixth-year group had a second- degree relative having a mental health problem. The most well-known mental health problem among the first-year students was schizophrenia (47.6%). When encountering a person with a mental health problem, the most common feeling felt by first-year students was "nervousness" (33.9%, p = 0.03), whereas it was "pity" among the sixth-year students (26.7%, p = 0.694); moreover, the percentage of students who felt indifference was 7.1% in the first-year group and 16.3% in the sixth-year group (p = 0.007). Most of the students in the first-year and the sixth-year were thinking that people with a mental health problem should live with their family (42.3% and 61.6%, respectively, p < 0.001) and cared for by them (49.4% and 64.9%, respectively, p = 0.003) (Table 2). The percentage of students who think that people with a mental health problem should be kept under observation reduced by half in the sixth-year (38.1% in the first-year and 20.3% in the sixth-year) and the difference was statistically significant (p < 0.001). The share of sixth-year students who think that the responsibility of care for people with mental health problems should be on healthcare workers decreased by a statistically significant level (30.4% in the first-year group and 18.3% in the sixth-year group, p = 0.007) (Table 2).

The evaluations of students concerning the underlying causes of mental health problems showed statistically

TABLE 1. Socio-economic characteristics of the first-year and sixth-year medical faculty students (%).

Variable	First-year (n = 168)	Sixth-year (n = 202)	p value
Age groups (years)			-
≥ 18	71.4	-	
19-20	27.3	-	
21-22	0.6	6.9	
23-24	0.6	80.7	
≥ 25	-	12.4	
	Mean± SD: 18.25 ± 0.88	Mean ± SD: 23.46 ± 0.859	
Gender			0.690[1]
Male	47.6	45.5	
Female	52.4	54.5	
Living environment inhabited for the greatest length of time			0.145[1]
City center	72.0	80.7	
County seat	22.0	16.8	
Village	6.0	2.5	
Educational status of the father			0.044[1]
Literate	0.6	3.0	
Primary school	14.3	8.9	
Junior high school	4.8	4.5	
High school	20.2	30.7	
University	60.1	53.0	
Educational status of the mother			0.004[1]
Illiterate	3.6	3.0	
Literate	3.6	4.5	
Primary school	23.2	15.8	
Secondary school	4.8	14.9	
Lyceé	28.0	35.6	
University	36.9	26.2	
Work status of the father			
Working	15.5	25.7	0.006[1]
Not working	84.5	74.3	
Work status of the mother			
Working	63.7	76.7	0.016[1]
Not working	36.3	23.3	
Number of siblings			
No siblings	2.4	-	
Siblings	87.6	100.0	
≥ 3	50.0	47.5	
3-4	39.8	39.1	
≥ 5	7.8	13.4	
	Mean ± SD: 2.70 ± 1.28	Mean ± SD: 3.05 ± 156	0.020[2]

[1]Chi-square test, [2]Student's t test.

significant changes as well; factors such as environmental and genetic causes (88.6%, $p < 0.001$), environment and living conditions (87.1%, $p < 0.001$), damage to the nervous system (61.4%, $p < 0.001$) were expressed at a higher rate by the sixth-year students (Table 2).

Among the sixth-year group, the percentage of students who believed that an individual with a mental health problem could be treated, adapt to social life, and succeed in school and professional life, demonstrated a decrease compared with the first-year group. Those individuals who believe that mental health problems could be treated successfully, encompassed 86.9% of the first-year and 72.8% of the sixth-year students ($p < 0.001$). Most of the students (although at a lower degree in the sixth-year) believed that mental problems wouldn't cause a problem in one's adaptation to social life (94.6% and 88.6%, respectively, $p = 0.040$), whereas 94.6% of the first-years and 88.6% of the sixth-years believed that

TABLE 2. Some experiences and thoughts of first-year and sixth-year medical faculty students involving mental health problems (%).

Variable	First-year (n = 168)	Sixth-year (n = 202)	p value[1]
Presence of a previous mental health problem experience			
Not experienced	95.8	92.6	0.187
Experienced	4.2	7.4	
Presence of a relative with a mental health problem			
No	85.7	72.3	0.002
Yes	14.3	27.7	
First-degree relative	2.4	5.0	
Second-degree relative	5.4	10.4	-
Friend	6.5	6.4	-
Neighbor	-	1.5	-
Not indicated	-	4.5	-
The mental diseases known by first-year students			
Schizophrenia	47.6	-	-
Manic depressive disorder	10.1	-	-
Depression	7.7	-	-
Paranoia	6.0	-	-
Kleptomania	4.2	-	-
Feelings of the students towards people with a mental health problem[2]			
Anxiety	33.9	20.3	0.032
Fear	7.1	5.0	0.375
Pity	28.6	26.7	0.694
Curiosity	31.5	22.8	0.058
Indifference	7.1	16.3	0.007
Unable to explain feelings	11.9	7.4	0.143
Other[3]	-	1.5	-
Where should people with a mental health problem live?[1]			
Alone at home	-	2.0	-
With family members in the family home	42.3	61.4	< 0.001
With a friend	1.8	1.0	0.662
In a hospital	9.5	9.9	0.903
Should be under observation	38.1	20.3	< 0.001
Other[4]	-	5.5	-
Who should care for people with a mental health problem?[1]			
Family members	49.4	64.9	0.003
Healthcare workers	30.4	18.3	0.007
Paid care workers	17.9	13.4	0.237
Other[5]	-	3.5	-
Causes of mental health problems			
Environment and genetics	74.4	88.6	< 0.001
Nervous system damage	14.9	61.4	< 0.001
Environment and the conditions of life	23.2	87.1	< 0.001
Other[6]	1.2	-	-
Treatability of people with a mental health problem			
Yes	86.9	72.8	< 0.001
No	2.4	13.9	
Undecided	10.7	13.4	
Whether people with a mental health problem can adapt to the social life or not			
Yes	94.6	88.6	0.040
No	5.4	11.4	
Whether people with a mental health problem can succeed in their school and professional lives or not			
Yes	95.2	90.6	0.087
No	4.8	9.4	

[1]p value of the chi-square test.
[2]The students were allowed to mark more than one choice.
[3]"My feelings vary depending on the type of mental disorder", "I hope the treatment would be possible and easy", "a compulsion to help"
[4]A friend, within a social environment, wherever one would like to live, with one's family until 18 years of age and afterwards in a care house...
[5]Family until 18 years of age followed by a care house, self-care if possible, institutional, hospital or one's family...
[6]Family conditions, nutrition

people with mental health problem would succeed in their school and professional lives (p = 0.087) (Table 2).

In view of the distribution of answers given by the students to the propositions in the questionnaire; the sixth-years exhibited a lower agreement compared with the first-years with regard to the following propositions: "abstaining to talk to a person with a mental health problem" (p = 0.015), "showing no neighborhood" (p = 0.316), and "not working in the same place" (p = 0.682). However, agreement with the "opposition to marriage to a person who has a mental health problem" proposition was a little bit higher in the sixth-year than in the first-year (47.6% and 50.3%, p = 0.746). In terms of "sharing the same room with a person having a mental health problem" (p = 0.008) and "giving a job to a person with a mental health problem" (p = 0.678) propositions, sixth-year students demonstrated an increase in agreement compared with the first-year students, whereas sixth-years displayed a decrease in the agreement with regard to "making friends with a person with a mental health problem" (p = 0.186) and "marrying a person who has a family member with mental health problems" (p = 0.007) propositions (Table 3).

TABLE 3. The attitudes of first-year and sixth-year medical faculty students towards people with mental problems (%).

Statement	First-year (n = 168)			Sixth-year (n = 202)			
	Agree	Undecided	Disagree	Agree	Undecided	Disagree	p value
I would hesitate to communicate with people having a mental health problem	38.7	6.0	55.4	28.7	13.9	57.4	0.015
I wouldn't exhibit neighborliness towards people with a mental health problem	33.3	14.3	52.4	27.2	18.8	54.0	0.316
I wouldn't work in the same place as people having mental health problem	31.5	19.6	48.8	30.2	16.8	53.0	0.682
One should not marry with a person who has experienced a mental health problem in the past	47.6	25.6	26.8	50.5	22.3	27.2	0.746
I would share my room with a person having a mental health problem	19.0	19.6	61.3	26.2	28.7	45.0	0.008
I would give a job to a person with a mental health problem	33.9	37.5	28.6	37.1	38.1	24.8	0.678
I would be friends with a person having a mental health problem	54.2	25.6	20.2	60.9	17.8	21.3	0.186
One can marry a person who has a family member with a mental health problem	53.6	31.5	14.9	55.0	19.8	25.2	0.007

*Chi-square test was performed.

TABLE 4. The distribution of the mean combined index scores of students for their attitudes towards people with mental problems with regard to certain socio-demographic characteristics.

Socio-demographic characteristics	First-year			Sixth-year		
	n	Mean (SD)	p value	n	Mean (SD)	p value
School Year	168	6.21 (2.14)	-	202	6.23 (2.70)	0.940*
Gender						
Male	80	5.79 (2.13)	0.015*	92	5.79 (2.55)	0.036*
Female	88	6.59 (2.08)		110	6.59 (2.78)	
Living environment until the age of 12						
City center	121	6.32 (2.08)	0.510**	163	5.99 (2.76)	
County seat	37	5.97 (2.56)		34	7.24 (2.31)	0.035**
Village	9	6.11 (2.32)		5	7.20 (1.30)	
Presence of a mental health problem among students						
Yes	7	6.71 (2.57)	0.524*	15	5.87	0.592*
No	161	6.18 (2.13)		187	6.26	
Presence of students' relatives with a mental health problem						
Yes	24	7.67 (1.83)	< 0.001*	56	7.00 (2.85)	0.019*
No	144	6.00 (2.10)		146	6.00 (2.60)	

*Student's t test was applied.

**One-way analysis of variance was used. As a result of the Tukey test, statistical difference was found to arise from the difference between the central district and other districts (p = 0.037).

The composite index, which included the attitude questions and propositions, revealed a mean score of 6.21 ± 2.13 for the first-year students and 6.23 ± 2.70 for the sixth-year students. There was no statistically significant difference between the mean scores of the two groups ($p = 0.940$) (Table 4). The mean score of composite attitude index among female students was significantly higher than male students in both first-year (6.59 ± 2.08) and sixth-year groups (6.59 ± 2.78) ($p = 0.015$ and $p = 0.036$, respectively). With regard to the kinds of environments students had lived in up to the age of 12, the composite index score of those living in a city center was highest in the first-year group (6.32 ± 2.08), while the percentage of students living in a county seat was the highest among the sixth-year students (7.24 ± 2.31). There was a significant difference between the mean composite attitude index scores of sixth-year students with regard to where they had lived until the age of 12 ($p = 0.035$). This difference arises from the variance between the mean scores of students having lived in city centers and county seats ($p = 0.037$). In terms of the presence of a relative with mental health problems among first and sixth-year students (7.67 ± 1.83 and 6.00 ± 2.10, $p<0.001$; 7.00 ± 2.85 and 6.00 ± 2.60, $p < 0.001$), there was a difference between the composite index scores, but there was no difference with regard to students having a mental health problem.

DISCUSSION and CONCLUSIONS

As with all the health problems, the attitude of physicians towards diseases and their patients also influences the early diagnosis and treatment of mental diseases. Therefore, determining the attitudes and beliefs of physicians on those subjects, at the undergraduate level, is important. The present study evaluates changes in the attitudes of physicians towards individuals with mental health problems throughout their medical education.

The students, who participated in this study when they were in their first sixth-years of medical education, were similar with regard to gender and the environments where they had lived for the longest period of their lives, whereas they had different characteristics in terms of parental education levels and work status, and the number of siblings. However, the work status of parents and the number of siblings are variables that can change over time.

In the current study, it was discovered that the feelings of students towards people with mental health problems underwent a change over six years of education and "pity" was found to replace the feeling of "nervousness". "Nervousness", being the most common feeling among first-year students, was explained by reference to the widespread view in society that individuals whose behavior is unpredictable may be 'dangerous', whereas, although not statistically significant, the increasing feelings of "pity" which become prevalent among the sixth-year students, were associated with the prejudices developed by the students based on the condition of such individuals in society and their perceived treatability. Compared with the first-years, sixth-year students are less likely to believe that people with mental health problems can be treated and succeed in their school, social, and professional lives. The decline in such beliefs was at statistically significant levels on the question of treatability and adapting to social life. The percentage of students who felt indifferent to people with mental health problems increased in the sixth-year. This finding was evaluated to be one of the positive developments among the students' perceptions, attitudes, and behavior towards individuals with a mental health problem. While this study shows that medical education has a positive influence on students with regard to professional subjects, such as establishing communication, as physicians, with individuals having mental health problems, negative attitudes acquired from the society they live in were found to be unaffected by the education received at the medical faculty.

Moreover, the students failed to maintain their initial optimism throughout their medical education and they were found to develop increasingly negative thoughts concerning the treatment of people with mental health problems and their adaptation to social, school, and professional environments, due to witnessing problems arising from the social structure, health system and social services. The condition of people with mental health problems in society and their care is an important healthcare issue. First-year students think that people with mental health problems should be kept under observation and cared for by healthcare workers. These findings were evaluated as consistent with the "nervousness" displayed by the first-year students towards individuals with a mental health problem and students were found to acquire a more positive and realistic point of view over the course of their medical education.

As mentioned in the introductory section, while some studies indicate that psychiatric education given by medical faculties has a positive effect on the attitudes of students (Augostinos et al., 1985; Creed and Goldberg, 1987; Keane, 1990; Güney, 1994; Singh et al., 1998; Baxter et al., 2001; Birdoğan and Berksun, 2002; Ay et al., 2006) some studies showed no significant differ-

ence (Shuval and Adler, 1980; Yager et al., 1982; Arkar and Eker, 1997; Yanık et al., 2003). In the present study conducted at the HUFM, no significant change was discovered in the attitudes of students towards people with mental health problems as a result of the evaluation of the composite index scores calculated from the questionnaire, including questions and propositions created for this study. Generally, changes in attitudes are associated with the training methods used in the area of mental health and mental health problems in medical faculties and the circumstances in which students encounter such patients (Burra et al., 1982; Spiegel, 1991). In the present study, indifference can be interpreted in both ways relative to medical education. The absence of approaches that aim to alter the attitudes of students towards people with mental health problems in a positive way throughout medical education, and the presence of maximal positive behavior among students of HUFM already in the beginning, may be the underlying reasons why students' attitudes did not evolve in a positive way. Another study explained the attitude of indifference during medical education through the fact that medical students embrace their educational area intentionally and display the maximum positive behavior right in the beginning (Doğan et al., 1994).

If we review the questions and propositions used in the current study, the propositions can be observed to be associated with basic human rights such as being part of social life, communicating with other people, working, marrying, and choosing one's living environments independently. The attitudes of students were found to demonstrate no statistically significant difference at the end of their medical education except for in the following subjects: the treatability of individuals with mental health problems, communicating with them, sharing a room, and marrying a person who has a relative with a mental health problem. The students' attitudes to treatability, family history, and marriage, are observed to become increasingly negative throughout the course of the medical education. This finding indicates that the attitudes of students acquired from society, may become more negative when combined with medical knowledge. Moreover, the limited nature of positive changes in the attitudes of students towards people with mental health problem was deemed to be an important finding, and, since those findings may have consequences for diagnostic and therapeutic processes for mental diseases, they should be assessed carefully.

When all the results are evaluated together, the medical education in HUFM was observed to have no influence on students with regard to developing positive attitudes towards regarding the people with mental health problem as part of society. Our results were consistent with a previous study in which students' attitudes were examined towards depression treatment and the medical education provided was found to create no positive changes in the willingness of students to establish social relationships with people diagnosed with depression (Yanık et al., 2004).

Apart from the findings based on the propositions developed to measure attitudes, first-year students were asked to list the mental health problems they were familiar with, which revealed "schizophrenia" as the most commonly known mental health problem. Therefore, if we assume that, while answering the propositions about attitudes, first-year students had schizophrenia in mind and that sixth-year students imagined a mixture of all the mental health problems, we can conclude that the improvement in their attitudes was not adequate. A previous review study in the literature had already investigated whether the attitudes of physicians in Turkey were insufficiently positive (Gürlek Yüksel and Taşkın, 2005). Moreover, the physicians are known to be unwilling to allocate time for mental health problems, while the physicians from branches other than psychiatry have been shown to feel curiosity, anger, and discomfort as well as being unwilling to carry out treatment (Aker et al., 2002). Among physicians, the widespread tendency toward the stigmatization and discrimination against schizophrenic patients in particular, is a noteworthy fact (Üçok et al., 2001). Another matter affecting this issue is the limited impact of psychiatric training on the development of positive attitudes in students, due to the inadequate biopsychosocial characteristics of the education delivered in medical faculties (Doğan et al., 1994). Similar to the findings of other studies, in the present study, the attitudes of female students in both groups towards people with mental health problems were found to be more positive compared to those of male students (Dixon et al., 2008; Ay et al., 2006). The fact that attitudes towards people with mental disorders are more positive in students, who are familiar with such problems due to their own experiences or those of their relatives, supports the opinion that the popular perceptions and prejudices of the wider society, continue to flourish among students (Doğan et al., 1994).

However, in the current study, first-year and sixth-year students who only had a relative with a mental health problem demonstrated higher scores in the composite attitude index compared with the others. This re-

sult may be associated with the lessons on genetic-based knowledge of mental diseases in the theoretical courses.

There are studies which suggest that, in terms of medical education, seminars and workshops along with interactive and problem-based learning sessions would be more beneficial in rendering the attitudes of the students more positive (Singh et al., 1998). When behavioral change and an improvement in interpersonal relations and communication skills is desired, effective interactive methods such as role plays, coaching, discussion and case studies are recommended (Ozvarış Bahar, 2001). Moreover, the atmosphere of the educational institution plays a significant role in the development of the attitudes of students towards people with mental health problems. The atmosphere of the educational institution should include no discrimination towards people with physical or mental health problems and should foster respect for human rights. Factors such as the location of mental health clinics within a given healthcare facility, the quality of the service in those clinics, and presence of positive role models, may have a positive influence over the attitudes of students toward people with mental disorders. If the instructors that play a part in the diagnostic and therapeutic processes of mental health problems within the institution providing medical education become aware of the inhibitive effect of their negative role and turn into positive role models by abstaining from iatrogenic stigmatization, then they may have a positive influence on the attitudes of students (Sartorius, 2002). The attitudes of healthcare personnel working in departments other than psychiatry clinics can also be mentioned as having some importance.

There are studies which note that providing theoretical information on mental health and ensuring that students encounter people having mental health problems in ordinary mental health clinics, does not have a positive effect on student attitudes (Üçok, 2007). Thus, in order to positively influence the attitudes of students, the content and objective characteristics of mental health education should include components required for the creation of positive attitudes and these should be extended throughout the entire course of medical training to make it continuous, whereas encountering inpatients and outpatients directly for adequate periods on stages of gaining of medical skills, observing positive developments occurring after treatment, diversifying the mental disorder cases presented to the students, and the importance of working with the families of patients, should also be highlighted (Baxter et al., 2001; Ay et al., 2006; Niedermier et al., 2006; Üçok, 2007).

During the first stage of the present study, since the study was performed anonymously, we could not individually match the students to their responses in their first and sixth years and, therefore, evaluation of the alteration in attitudes at the personal level could not be performed. Another limitation of the current study was the low participation rates both among first-year and sixth-year students. Since there is no reliable and valid scale in Turkish which measures the attitudes of medical faculty students towards people with mental diseases, the researchers used the existing study questions and propositions on some basic human rights, which are known to be used in national and international studies.

In conclusion, we found that the education provided by medical faculties did not make any significant difference to the attitudes of students towards people with mental health problems. However, the burden of mental problems in Turkey and across the World demonstrates a gradual increase. Therefore, due to the direct linkages between issues of human and patient rights and determinative nature on service quantity and quality, theoretical education and skill-developing processes during the preclinical stage, hands-on training during the clinical stage, aiming to improve the attitudes of medical students towards people with mental health problems, should be incorporated into the medical education process at undergraduate level.

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