From the editor

Dear Readers,

We are happy to greet you with the first electronic issue of the Turkish Journal of Public Health. We hope you are having easier access to the Journal in its new format.

You will find in this issue four original research articles; one of these articles is about smoking during pregnancy.

The year 2008 has a special importance regarding tobacco issue. First of all, the coverage of the "Anti-Tobacco Law" of Turkey was extended in 2008 to include bars, restaurants and cafes; and Turkey became one of the leading countries in tobacco control activities. Additionally, World Health Organization published a report on the global tobacco epidemic which is the first in a series of WHO reports that will track the status of the tobacco epidemic and the impact of interventions implemented to stop it. This report introduces six strategies under the title of "The MPOWER package" where one of the strategies is about monitoring tobacco use and prevention policies. Likewise, smoking rates and changing trends have been investigating by researchers in selected groups. In this issue of the Journal, Tokuc et al discuss smoking in pregnancy and associated factors among 457 working women. Pregnancy in fact, can be considered an opportunity for quitting cigarette smoking. However according to results of the study, 20 % of smoker women continued smoking during pregnancy; in addition, almost half of the quitters resumed smoking after childbirth. It was found that husband smoking was one of the associated factors for smoking during pregnancy. They suggest husbands/partners of pregnant women should also be participated in the smoking cessation programme to gain information about smoking risks to the fetus.

The other research are about different topics such as, trends and risk factors in infant mortality, social distance of medical students from a person in a depression vignette and some environmental health specifications at state primary schools in Turkey.

We hope you enjoy this issue of the Turkish Journal of Public Health and we would like to thank all the authors and reviewers who contributed to this issue of the journal.

Editor
Sanda Cali

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PREDICTORS OF SMOKING DURING PREGNANCY AMONG WORKING WOMEN

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ABSTRACT

The aims of this study are to investigate (1) smoking status in a group of working women before, during and after their last pregnancy, and (2) characteristics that differentiate successful spontaneous smoking quitters from continuous smokers during pregnancy.
A descriptive, cross-sectional survey of working women was conducted in May 2007 in Edirne. A total of 457 women accepted to participate to the study. Data collected by a face to face interview with a questionnaire. Chi-Square and logistic regression analysis were used to examine variables associated with smoking behavior.
Four hundred and eleven women have reported that they had at least one pregnancy. 244 of them (59.4 %) had smoked before their last pregnancy. Out of these women, 50 (20.5 %) continued smoking during pregnancy and 194 (79.5 %) quitted. 45.8 % (89) of quitters resumed smoking after childbirth. The independent predictors of smoking during pregnancy were having more than 2 children, being older than 30 at the last pregnancy, husband's smoking and husband's drinking alcohol more than three times a week.
Antenatal care services must include smoking cessation programmes during pregnancy. Husbands/partners of pregnant women should also be participated in the smoking cessation programme to gain information about smoking risks to the fetus.

Key words: Smoking, pregnancy, working women

INTRODUCTION

Smoking is a preventable risk factor associated with health problems of pregnant women and their babies. Epidemiological studies over past 35 years have identified that smoking during pregnancy exerts independent and adverse effects on a variety of reproductive and other health outcomes. Smoking during pregnancy also increases the risk of spontaneous abortion and preterm birth[1,2,3]. A dose-response relationship between smoking and low birth weight has been documented[4, 5]. Furthermore, smoking is considered to be a risk factor for sudden infant death syndrome[6].

In spite of educational efforts, many pregnant women continue smoking and many who did not smoke during pregnancy begin smoking after delivery.

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Conversely, reproduction itself may have an impact on female smoking behavior. Studies have shown that a large proportion of women interrupt smoking during pregnancy[7, 8]. Lu et al. reviewed nine cohort studies and found that the determinants of smoking include maternal age, number of cigarettes smoked, partners' smoking habit, socio economic status, level of education, age at smoking onset, level of addiction, parity and passive smoke exposure[9].
The aims of this study are to investigate (1) smoking status before, during and after pregnancy, and (2) characteristics that differentiate successful spontaneous smoking quitters from continuous smokers during pregnancy, among a group of working women in Edirne.

METHODS

This cross-sectional study was conducted in May 2007, in Edirne. The study protocol was approved by the Trakya University Medical Faculty Ethics Committee and by the Governorship of Edirne. The study population includes 580 female civil servants (except health workers) who were working in all Public Utilities of Edirne Province. All of the civil servants were invited to participate in that study, and 80 % of them accepted it. Twelve trained nursing students carried out a face-to-face interview by using a questionnaire. Before the interview, participants were informed about the aim of the study and assured about the confidentiality.
Through the questionnaire, demographic data was collected about respondents (i.e. age, educational level, marital status, working time, monthly income, total monthly household income, living conditions), and reproductive information regarding last pregnancy and delivery history (i.e. maternal age, parity, smoking history during and after pregnancy, smoking status of those they live with) were gathered. Women were also asked whether they have experienced any abnormal symptom during their last pregnancy, and whether they have received any support and assistance from their husbands or family or not.
The subjects were classified by smoking status during and after pregnancy into four groups as in the study conducted by Suzuki et al[10]; non-smokers were considered as those who had not smoked regularly before and during pregnancy. Smokers were defined as those women who reported having smoked during pregnancy. Successful quitters were defined as those who reportedly had smoked before pregnancy but who quit smoking successfully and spontaneously at any time during pregnancy. Relapsed smokers were those who reportedly were successful spontaneous quitters during pregnancy but who restarted smoking after delivery.

Statistical methods

Chi-Square analyses were conducted to evaluate the relationship between smoking during pregnancy and the associated variables. The variables that were found to be significant in Chi-Square analysis assessed together in a logistic regression analysis. These analyses were performed using Statistical Package for the Social Science (SPSS) Version 13.0.

RESULTS

Four hundred and fifty seven women have accepted to participate in the study. The mean, standard deviation (SD), and range of age (min – max values) of the participants were 37.4, 6.9 and (22.0 – 62.0) respectively. Ninety percent of women had attended to school 8 years or more. The mean age of beginning to smoke was 19.6 (SD=4.1) (range: 12.0 – 40.0). Four hundred and eleven of them have reported that they had at least one pregnancy.

As it is shown in Figure 1, 59.4 % of the women have smoked before pregnancy. Out of these women, 20.5 % had continued smoking during pregnancy whilst 79.5 % had quitted smoking during pregnancy. Forty six percent of quitters, resumed smoking after childbirth. The mean duration of relapse after delivery was 11.8 months (SD=11,5; range: 0 – 72 months). Thirty percent of relapsed women were primiparous and 50.0 % lived with smokers.

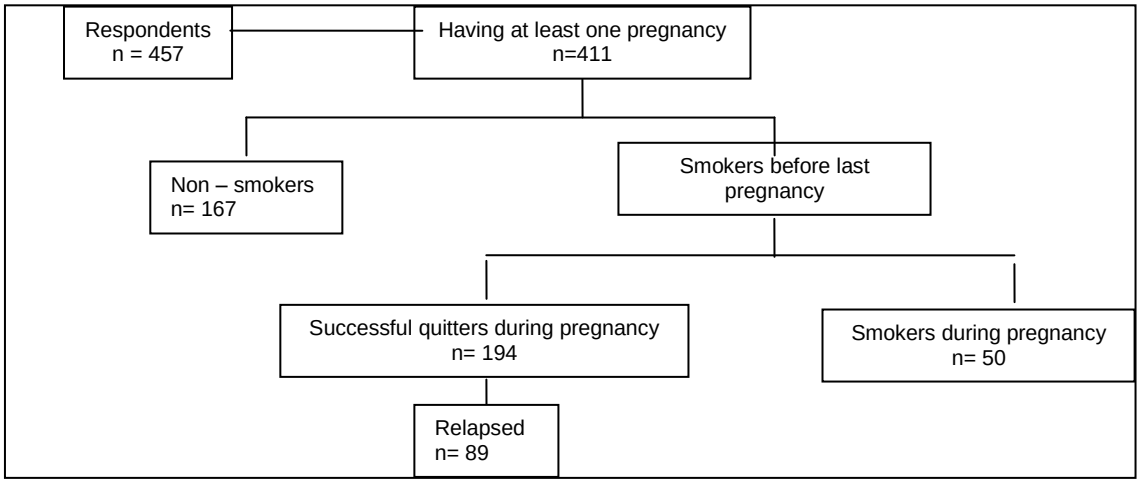

Figure 1. Smoking status among respondents before, during and after pregnancy

Table 1 shows the results of analysis of smoking during pregnancy according to some independent variables. Continuing to smoke during pregnancy was significantly associated with having more than two children; being 30 years of age or older at the last pregnancy, husband's smoking and husband's drinking alcohol more than three times a week. Abnormal symptoms during pregnancy, husband's late arrival at home over three times a week, partner's physical violence during pregnancy, support from the family and education of women were not found to be associated with smoking during pregnancy.

Table 1: Smoking during pregnancy related to some socio-demographic variables

Socio-demographic variables	**Spontaneous quitters (n=194)**		**Continuous smokers (n= 50)**		***p***
	n	%	n	%	
Having more than two children	9	4.7	13	26.0	.000
Being at the age of ≥ 30 at last pregnancy	44	22.8	26	52.0	.000
Husband's smoking (yes)	112	59.9	39	79.6	.011
Husband's drinking alcohol more than three times a week (yes)	23	12.2	13	27.7	.009
Husband's late arrival at home over three times a week	39	20.6	11	23.4	.678
Exposing to husband's violence during the pregnancy	19	10.1	8	16.3	.222
Having abnormal symptoms during pregnancy	29	15.3	9	18.0	.648
Being attended to school less than eight years	19	9.8	8	16.0	.212
Getting support from the family during last pregnancy	122	63.2	26	52.0	.148

Table 2 shows the results of multiple logistic regression analysis of smoking during pregnancy and associated factors. It indicates that the independent predictors of smoking during pregnancy were having more than 2 children, being at the age of ≥ 30 last pregnancy, husband's smoking and husband's drinking alcohol more than three times a week.

Table 2: Odds ratios (OR) and 95 % confidence intervals (CI) for continuous smokers during pregnancy

		OR	95 % CI	*p*
Parity				
	≤ 2[a]	1.00		
	> 2	5.49	(1.99 – 15.10)	.001
Age at the last pregnancy				
	< 30 [a]	1.00		
	≥ 30	2.44	(1.18 – 5.05)	.016
Husband's smoking habit				
	No [a]	1.00		
	Yes	2.60	(1.12 – 5.98)	.025
Husband's drinking alcohol more than three times a week				
	No [a]	1.00		
	Yes	2.42	(1.04 – 5.59)	.039
Constant			0.064	.000

[a] Reference category

DISCUSSION

The limitations of this study are as follows: Only the volunteers participated in the study and the results relied upon the self report. Also, memory factor should be considered as an important issue.

The smoking status of working women before, during and after pregnancy was investigated in this study. Out of the respondents that have at least one pregnancy, 45.5 % smoked and 10.9 % continued smoking during pregnancy. Many studies on smoking during pregnancy have been published from several countries. In Norway, the point prevalence of self-reported daily smoking among women three months before the pregnancy was 34 % and at 18 weeks of pregnancy, 21 % of the women reported smoking daily [11]. A study from Canada reported 32.1 % of women smoked before pregnancy. Out of them, 37.5 % quit smoking and 20.0 % continued smoking during pregnancy [12]. In a study from Australia, 45.2 % of respondents reported that they had smoked cigarettes before pregnancy and 34.2% continued to smoke during pregnancy[13]. In New Zealand, 22.2 % of women reported smoking when they became pregnant and 26.8 % of them quitted smoking in the first trimester. As it was reported in 2004 US vital statistics reports 10.2 % of women smoked during pregnancy [14]. In Turkey, smoking rates during pregnancy ranged from 7.3 % to 19 % in different regions [15, 16, 17].

In comparison with smoking rates during pregnancy, great differences have been found by the countries. The differences

may be related to cultural and traditional factors as well as educational status of women and social pressure against smoking during pregnancy.

Also, big differences in cessation rates have been found. Studies have shown different predictors of successful smoking cessation. These are low level of smoking prior to pregnancy[11,18], non-smoking partners[10, 18, 19, 20], low coffee consumption[20], a high level of education[8, 11, 21], primiparity[10, 18, 19], current employment[18], and experiencing nausea[18]. Some studies found an association between ethnicity and smoking cessation during pregnancy[18, 19, 20].

Additionally, several studies indicated many risk factors for smoking in pregnancy including lower educational attainment[22, 23, 24, 25], younger age during pregnancy[13, 22, 25], presence of daily smokers at home[10, 23, 25], being in the lowest family income group or being in low social classes[14, 22, 26], not cohabiting with the infant's father[25], not to be married[22, 26], involuntary employment[13, 23]. In spite of these results, we found significant association parity, age at the conception, husband's smoking and husband's drinking alcohol more than 3 times a week with smoking during pregnancy.

In the present study, the prevalence of smoking and the odds ratio for smoking were higher among women who had more than 2 children. Previous studies in some other countries found similar results[27, 28]. Frequent pregnancies and childbirth result in familiarization that may lead to disregarding the harmful effects of smoking in subsequent pregnancies. As Lelong et al. said, women have seem to pay more attention to their lifestyle and to medical advices in their first pregnancy[29], and multiparous women have been less motivated to change their smoking habit during pregnancy[10]. Today, pregnant smokers are practically aware of the risks of smoking during pregnancy, they may disagree with healthcare personnel about the relations of these risks for her individual pregnancy[25]. And probably many of them know that smoking during pregnancy is harmful for both fetus and mother but this knowledge was - transformed neither to an attitude nor a behavior. In Näsman and Ortendahl's study, smokers were found to be less likely to agree with health risks than their non-smoking counterparts and did not fully comprehend the risk associated with smoking[30]. This is similar in some other studies[10, 19].

It was confirmed in this study that the prevalence of smoking among pregnant women whose husbands were smoking was significantly higher than in pregnant women whose husbands were not. It is well known that smoking by family members promotes the smoking behavior of pregnant women[28, 31, 32].

Supports for pregnant smokers who are trying to quit are essential and indispensible. It is persuasive and reasonable for non-smokers in the household to encourage pregnant smokers to quit smoking during pregnancy [10]. Therefore, to promote an antismoking mindset among pregnant women, intervention should target not only pregnant women but also their family members, especially spouses.

Altough Fingerhut reported that age had little effect on smoking cessation, our results showed older maternal age was a risk factor for continuing smoking during pregnancy. Another previous study determined that younger age was one of the factors related to smoking cessation[8, 33]. We did not found any association -among smoking during pregnancy and having abnormal symptoms during pregnancy, getting any support from parents' family during pregnancy, educational status, and exposing to husband's violence during the pregnancy.

The current study revealed that the significant risk factors for continuing to smoke during pregnancy were multiparity, living with smokers and maternal age.

Pregnancy has been described as a "teachable moment" for smoking cessasion by McBride et al. and Di Clemente who identified pregnancy as an opportune time for families to change smoking behavior[34]. Although contemporary evidence suggests that prenatal smoking interventions are generally effective in terms of rates of smoking cessation with quit rates ranging from 4.9 to 31.9 %, the relative effectiveness of specific components of interventions and sustainability of smoking cessation after pregnancy remains unclear[9]. There is an immediate need to launch effective smoking intervention programmes for this target population. Antenatal care services which are provided by ministry of health or municipalities must include intervention programmes for smoking cessation during pregnancy. The husbands/partners of the pregnant women should also - participate in the smoking cessation programme to gain information about risks of smoking to the fetus.
The main results of this study are as follows; 59.4 % of the working women in Edirne have smoked before pregnancy, 20.5 % of the smoking women had continued smoking during pregnancy and 79.5 % had quitted smoking, but 46 % of the quitters resumed smoking after childbirth. The mean time of relapse after delivery was 11.8 months (SD= 11.5). Continuing to smoke during pregnancy was significantly associated with having more than two children, the age of women at last pregnancy and living with smokers.

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ORIGINAL ARTICLES

Infant mortality rates in Narlidere District, Turkey (1999 to 2001): Trends in rates and risk factors

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Abstract

Aim: The aim of this study was to determine the causes and the risk factors of infant deaths in 1999-2001 in Narlidere District in Turkey.

Methods: 81 infants died in Narlidere District between 1999-2001 were included in this descriptive study and data were collected for 69 (85.2%) infants by face to face interviews with the parents.

Results: Of the 56.8% reported infant deaths were early neonatal, 14.8% late neonatal and 28.4% postneonatal deaths. Infant Mortality Rate in 1999, 2000 and 2001 were 17.6, 19.1, and 20.9 per one thousand respectively. The main mortality causes were prematurity (33.3%), congenital anomalies (23.2%) and infections (15.9%). The birth weight of 53% of the cases was less than 2500 g. 65.2% mothers had a risk factor during pregnancy and 27.5% mothers were not finished any school. 14.5% families did not have any social security, 45% had migrated to district from other provinces and 29% parents had consanguineous marriage. Of the 41.2% families were living in slum settlements.

Conclusion: Majority of the families whose infants died had low income, no social security, migrated from other cities and most of them were living in slum settlements. Most of the deaths were due to prematurity and occurred in the early neonatal period.

Key words: Infant, death, infant mortality rate, death risks, prematurity

Introduction

The infant mortality rate (IMR) has been used widely as an indicator for socio-economic status of communities, environmental factors and availability of health care services, especially for mother and children[1]. It is also helpful for prioritisation and planning public health services for a community[1].

Infant mortality (IM) rates show wide variation between countries depending on development level ranging from 3-7 per thousand in Japan, Finland, Greece, USA to 102-165 per thousand in Iraq, Angola, Chad and Aphganistan respectively in 2002[1]. According to the Turkish Demographic and Health Survey (DHS), IMR was 28.7 per thousand in 2003[2] and 42.7 in 1998[3].

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Within Turkey, IM rates shows a wide geographical variation with rates being nearly two times higher in the eastern part of the country then in the Western part, and rates are usually higher in rural areas than in urban areas[2]. Mother's education is an important determinant of IM, with rates being halved among mothers with primary school or higher education[2] IM is also negatively correlated with birth weight [2-10] and with receipt of health care during pregnancy and labour [8, 11, 12]. Maternal age and birth interval are two other important factors that influence IMR - as mothers get older the risk of infant death rises [2, 13] as it does when the birth interval is less than two years [2, 3].

Narlidere District is a semi urban area in Izmir which is in the western part of Turkey. In the past years, IMR in Narlidere District was constantly lower than in Izmir and for all of Turkey. In 1999, for example, IMR in Narlidere, Izmir and Turkey was 17.6, 29.0 42.7 per thousand, respectively[3,14,15]. The IMR decreased in Narlidere from 66.8 per thousand live births in 1985 to a low of 20.9 in 2001 (Fig.1). This study aims to explore the causes of infant deaths in 1999-2001 and to identify risk factors for infant death related to mothers and newborns in the Narlidere District in Izmir.

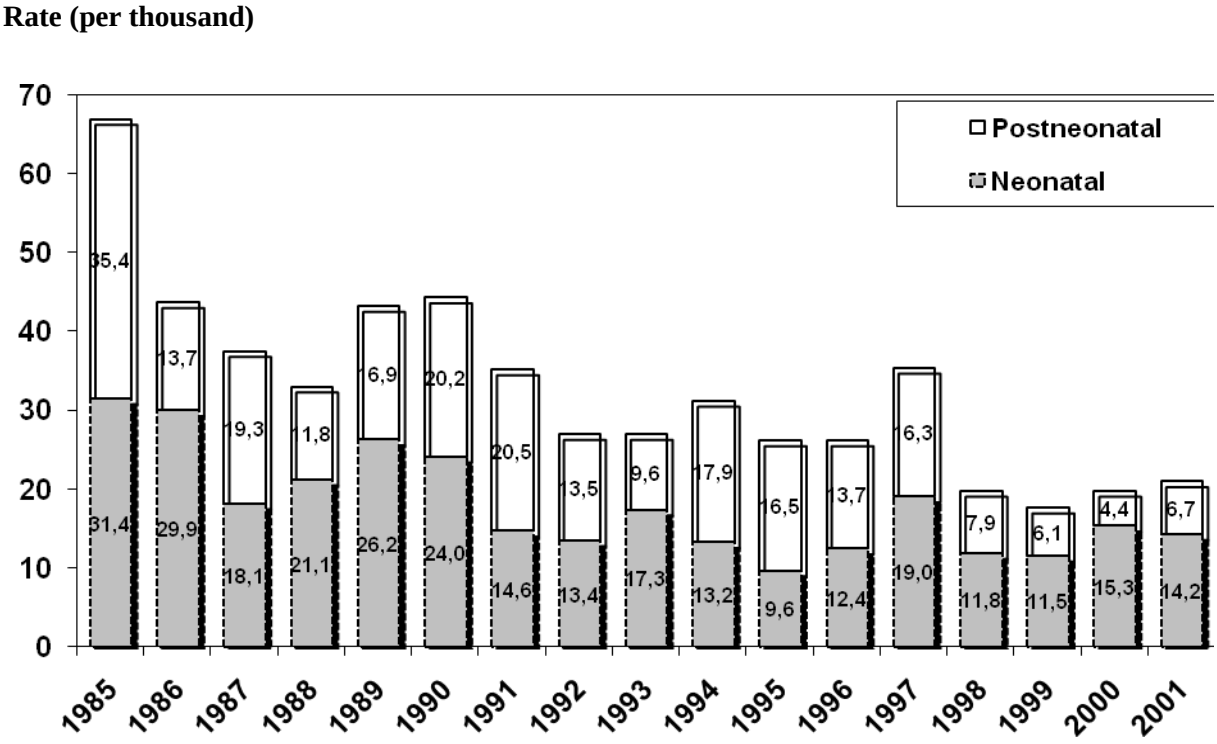

Figure 1: Infant Mortality Rates in Narlidere District (1985-2001)

Materials and Methods

Study design: This cross-sectional study was done in the Narlidere District in Izmir on the western part of Turkey. The Narlidere District is affiliated with the Department of Public Health of the Dokuz Eylul University for over 20 years. The district has 18 health centres and each centre provides primary health care to an average population of 5-10 thousand people. The borders of the district were enlarged after 1998, and the midyear populations of Narlidere District in 1999, 2000, 2001 were 108,325; 112,490; and 116,816 respectively. In these same years, there were 1302, 1371 and 1477 live births[4]. 1999, 2000, 2001 IMR were 17.6(11-25 per thousand), 19.1(12-26 per thousand) and 20.9(14-28 per thousand) per thousand respectively. In previous three years, IMR were 26 per thousand (14-38 per thousand) for 1996, 35 per thousand (23-47 per thousand) for 1997 and 19 per thousand (9-29 per thousand) for 1998.

Between 1999 and 2001, 81 infant deaths were reported in the Narlidere District. Of these, six cases were excluded from the below analyses because the families moved to another city, 2 families refused to participate, and 4 failed to provide adequate information, limiting the study to 69 cases (85.2%).

In this study, "Infant Death Surveillance Form" was created and used for data collection. Before this study, infant deaths were not investigated by the health personnel and the form only included infant age, place of death and limited information on the cause of infant death. Previous form was not sufficiently detailed for identification of risk factors, therefore a more detailed and comprehensive questionnaire was developed for the purposes of this research project. Staff of the local health centers complete the "Infant Death Surveillance Form" for each case of infant death. Using the contact details obtained from the health centres, parents were visited at their homes and were interviewed by a member of the researcher team. Nearly all interviews (94.0%) were conducted with the mother. Data were collected on the variables that were thought to be possibly related to infant death such as: mother's age and education, profession of the parents, family income, marital status, health insurance that to cover health expenditure, migration which change of location in country, consanguineous marriage, number of previous pregnancies including abortions, birth interval, previous maternal diseases, medical care received during pregnancy, place of delivery, health personnel managing the delivery, type of delivery, medical care provided to the infant, housing conditions and other environmental factors. Cause of death was ascertained using verbal autopsy technique which included detailed questions on signs and symptoms of the cause of death. The Infant Death Surveillance Form and hospital records were also used as supplementary data sources. Data was analysed using the Statistical Package for Social Sciences (SPSS) version 11.0 software.

Results

Of the 69 analyzed cases infant deaths encountered in the records, 71.6% occurred in the neonatal period and 28.4% in the postneonatal period. Most of the neonatal deaths (56.8% of all deaths) occurred in the early neonatal period. Slightly over half of all deaths- 56.5% were girls.

Based on interview and records data, the most common causes of infant death in the Narlidere District of Turkey in the period of 1999-2001 were prematurity (defined as gestational age of less than 37 weeks) which accounted for one third (33.3%) of the cases, congenital anomalies (23.2%), infections (15.9%), delivery complications

(13.0%) and others 14.6% (eclampsia, injuries, malnutrition, etc) (Table 1).

Table 1: Infant Death Causes in Narlidere District, 1999-2001

Causes	n	%
Prematurity	23	33.3
Congenital anomalies	16	23.2
Infections	11	15.9
Delivery complications	9	13.0
Injuries	2	2.9
Eclampsia	1	1.5
Intoxication	1	1.5
Malnutrition	1	1.5
Febrile convulsion	1	1.5
Hyaleine membrane disease	1	1.5
Unknown	3	4.3
Total	**69**	**100.0**

Five of the premature babies were multiple pregnancies (twins). Cardiovascular abnormalities (9 cases) were the most common congenital anomalies recorded. The most common infections were those caused by pneumonia (4 cases) and sepsis (3 cases), and delivery complications were meconium aspiration (3 cases) and breech presentation (2 cases).

It was also found out that 15.9% of babies died at home, just over half of whom were in the postneonatal period (54.5%). Of the 84.1% who died at the hospital, two-thirds (67.2%) were in the early neonatal period.

While the median birth weight was 2175g (340-4500 g), 31.3% were of very low birth weight (VLBW, below 1500 g), 21.9% were of low birth weight (LBW, between 1501 - 2500 g), and 46.9% were between 2501- 4500 g (normal birth weight). Mothers could not recall the birth weight in 7.2% of the cases. Of the 44.9% babies were premature (less than 37 weeks of gestation) while 55.1% of the babies were term babies (37 or more weeks of gestation). Average gestational age was 34.4±6.4 weeks (range = 20-42 weeks) Half of all the babies who died (50.7%) had some clinical problems such as asphyxia, respiratory problems, jaundice and infection which developed after birth. Of the 80% babies (20) who postdischarge were followed up at home by mid-wife, five of the babies failed to receive mid-wife care at home. Twenty eight percent of the babies had not been immunized and an additional 8% were not fully vaccinated of 25 babies up to date of age. One-third (31.9%) were not breast-fed since they were hospitalized due to prematurity and other health problems.

Looking at some maternal characteristics; average maternal age was 27.9±6.9 years, average number of livebirths was 2.3±1.3, average number of abortion was 0.7±1.5, average birth interval was 43.6±33.3 month, average number of visits at antenatal period was 6.4±3.9.

Looking at maternal risk factors, 2 mothers were under the age of 18 and 12 mothers were over 35 years of age, 4 mothers had pre-eclampsia, 3 mothers had gestational diabetes, 14 mothers had smoked during pregnancy, 11 mothers had a history of an infant death, 8 cases were multiple pregnancies, 10 mothers had an unplanned pregnancy, 10 mothers had undergone spontaneous abortion in the past and 18 mothers became pregnant within two years from a previous pregnancy. In total, 45 of the 69 cases of infant death (65.2%) could be defined as a high-risk pregnancy.

It is noteworthy that 4.4% of the mothers were not received at least one antenatal care visit from trained health personnel during the pregnancy. Of the 23.9% mothers were not vaccinated against tetanus toxoid during pregnancy. Nearly all (94.2%) infants who died had been delivered in the hospital and one-quarter (26.1%) were delivered by caesarean section.

When the descriptive information about the families of infant deaths was reviewed, it

was seen that 27.5% of the mothers were not finished any school, 14.5% of the families had no health insurance that this situation obstacle to take health care (Table 2).

Table 2: Descriptive findings of the parents

Characteristics (n=69)	n	%
Social Security		
Yes	59	85.5
No	10	14.5
Education of mother		
Illiterate	19	27.5
Primary education	36	52.2
Secondary and higher	14	20.4
Education of father		
Illiterate	3	4.4
Primary education	53	77.9
Secondary and higher	12	17,7
Occupation of mother		
Housewife	63	91.3
Worker	6	8.7
Occupation of father		
Employee	64	92.7
Unemployed	5	7.3
Migration		
Yes	31	44.9
No	38	55.1

Nearly half (45%) of the families had migrated to Izmir from other cities, migration time median was 108 month (range 4-396 month), mostly from the east or south-east Turkey. The monthly median family income was 111 USD (1332 USD annually). Almost all parents' marital status had a legal marriage. Most of the mothers worked within the home. Nearly 30% of the parents reported a consanguineous marriage, and 2.9% of the parents had hereditary diseases.

When their household characteristics were reviewed it was noted that 41.2% of the families were living in slum settlements. The mean number of rooms in the houses was 2.9±0.9 and the mean number of household members was 3.7±2.0. Clean water was unavailable in 13.6% of the houses, 27.5% of the houses had no sewage system, and 18.8% had toilets outside of the house. Only 6 (9.1%) parents stated the health centre was not in the vicinity of their home.

Discussion

According to Turkish State Institute of Statistics, 68% of the infant deaths in Turkey in 1998 occurred during the neonatal period[16] and according to the Turkish DHS 2003, 59% of the infant deaths were neonatal deaths[2]. In our study the percentage of neonatal infant deaths was found slightly higher than other studies in Turkey. This could be related to the socio-economic features of Narlidere District which is considered as better than Turkey. Another reason is that this increasing might be an ineffective care services at the hospitals especially at the prematurity care services since many of the deaths were happened there. Before 1999, the health centres recorded deaths by taking all death registries from hospitals and we might have missed some infant deaths especially the post neonatal deaths occurred at homes. For example in 1999, IMR was found to be 13.1 per thousand in the district but after an investigation some unregistered infant deaths had been found and finally corrected new IMR was 17.6 per thousand in 1999[17]. Since 1999, the death registries were improved and began to use death information from all sources.

It was found in our study that the most common causes related with infant deaths were prematurity, congenital anomalies and infections. According to the Izmir Provincial Health Report, respiratory system disorders, prematurity and congenital anomalies were the common causes of infant mortality respectively[15]. As reported in the Turkish State Institute of Statistics, it was noted that 14.6% of the infant deaths in Turkey in 1998 were due to birth injury and asphyxia, while 16.3% were related with congenital anomalies and

27.6% with perinatal mortality complications[16]. A prospective study was conducted in 29 centres in Turkey reported that the most important causes of perinatal mortality except stillbirths were prematurity and congenital anomalies[18]. Dollfus et al reported that prematurity and related complications, congenital anomalies, sudden infant death syndrome and labour complications were the most causes of infant deaths in North Carolina in 1980-84[9]. In India common primary causes of infant deaths were defined as infections (36.0%), prematurity (26.5%), hypoxia (10.0%), malformations (7.8%)[10]. In addition the main causes of infant deaths were similarly congenital defects (47.4%) and perinatal causes (32.1%) in Barcelona[19].

In this study, like in others, prematurity and congenital anomalies were the most common causes and the incidence of major congenital anomalies (cardiovascular, nervous and gastrointestinal systems) was similar to the literature[20-22]. Of the 13% babies during delivery and 50% of the babies after delivery had some health problems; such as asphyxia, respiration problems, jaundice and infections respectively. It was noted in the literature that delivery problems, meconium aspiration, umbilical cord complications, bleeding and other birth injuries were the main risk factors for babies during delivery[23].

In this study 31.3% of the infants were VLBW and 21.9% of the infants were LBW. In totally 53% of infants were below normal birth weights. A study was reported from India found that nearly half of infant deaths (49%) were LBW[10]. Dollfus et al reported in their study that this group was for 63% of the infants. In addition a LBW baby was 6 times more likely to die in the first year of life than a normal baby and a VLBW baby 85 times more likely[9]. It was also noted in Turkish DHS that birth weight was another determinant affecting IMR[2,3].

When the high risk pregnancies were examined, the most common risk factors were; age at pregnancy, preeclampsia, smoking during pregnancy, multiple pregnancy, gestational diabetes, previous infant mortality, unwanted pregnancy, history of unwanted abortion and pregnancy less than two years interval. Of the 65.2% mothers were correlated with at least one of these risk factors. In another study previously done in the same area, the risk was found in 75 % in all pregnant women. It was noted according to the Turkish DHS that older mothers possessed a higher IMR and that it increased twofolds when the interval between two pregnancies was less than[2].

The average follow up visit number in pregnancy was 6.4 in our study. The visiting number in Narlidere district in 1999-2001 was 5.0, 5.5 and 5.8 respectively[14]. It was 5.1 in Izmir in 2000[15]. In the annual report of Primary Health Care Services of Ministry of Health in 2001, the average visiting number in pregnancy was 1.7 in Turkey and 3.4 in the West of Turkey[24]. In our study, follow up numbers were higher than the other studies. Therefore it needs to discussion the quality of primary health care services including follow up services in the district. It is reported that primary health care services are negatively associated with infant mortality[8,11] and improvements in the quality of perinatal care effects to decrease of IMR[12]. When the health care of mothers during pregnancy was examined it was noted that there were some mothers who had not received any health care and 23.9 % of them was not vaccinated with tetanus toxoid during pregnancy. In Turkish DHS, it was reported that medical care given to the mothers during pregnancy and labour decreased IMR significantly[2,3].

When the type of health care given to the babies was asked, it was reported that follow up care was not given to some of the mothers by midwives and even some of the babies were not vaccinated after birth. Another important point was that two-thirds of the babies were not breast-fed during the early period after birth, although one-third of them had to be hospitalized.

When the descriptive characteristics of families were reviewed, it was found as the major risk factor that 27.5% of the mothers did not finished any school. In Turkish DHS it was reported that the IMR decreased almost by half when mothers were at least primary school graduates[2,3]. It was found that there was a significant relationship between Infant mortality and education of mother in Bangladesh[25], Gaza Strip[26], Indonesia[27] and Brazil[28]. There was another risk factor defined as in 29% of the families, parents were consanguineous. Similarly it was reported from Gaza that the effect of consanguinity on mortality remained considerable[26].

Dollfus reported that 6.1% of the mothers were younger than 17 years, 27.5% had education less than 11 years, 30.8% were not married and 46% did not get prenatal care[9]. Grant et al in their study about under five mortality in Pakistan in 1990-1991 noted that illiteracy of mothers and delivery under 20 years of age were significantly related with infant deaths. They also reported in the same study that the mortality rates were very high when the mothers were illiterate, under 20 years old, primary school graduates and also it was higher with less than 18-month-interval between two pregnancies and consanguineous marriage[13,29]. Alam et al in their study in Bangladesh in 1990-1992 reported that the rate of neonatal and postnatal infant mortality increased when the mothers were illiterate and under 18 years of age during first pregnancy, while the risk of neonatal infant mortality increased when the mothers were 18-19 years old ages and the interval between the two deliveries was less than15 months[30]. In this study there was a risk about education of mothers however other risks such as age of mothers and birth intervals couldn't be defined.

In this study 47% of families had migrated to this district from other cities, especially from the eastern and southern east parts of Turkey as a result of unemployment. There was a slight difference between the monthly incomes of the families and it was generally very low in most of them (1332 USD annually) comparing with GDP per capita for Turkey (6974 USD annually). When their living conditions were analysed, there were some data reflecting their socio-economic conditions. Almost half of them were living in slum settlements. Also the families were crowded, the houses had only one or two rooms, some families were still living in houses with no safe water, sewage system and in most of them the kitchen was also the living room. In their study, Turrell et al noted that infant deaths were closely related with socio-economic condition of the family apart from other factors and that there was a significant correlation between the rate of infant deaths and low birth weight, low income, migration and ethnicity[31]. Shi et all reported that income inequality was positively associated with infant mortality[16] and Poerwanto et all noted that family income inequality increases the probability of infant death[27]. There are also several other studies about the positive association between the low household income or low socioeconomic status and infant mortality[28;32-36].

In conclusion, antenatal and postnatal care must be good in quality and quantity to prevent infant deaths. IMR can only be reduced by improving maternal and infant follow up care. Therefore, pregnant mothers and especially those with high risk should be carefully monitored at the antenatal period and safe delivery and

appropriate neonatal and postnatal care should be immediately provided. Further declines in infant deaths due to congenital anomalies are likely to occur as prenatal diagnosis and selective termination of affected pregnancies become more widely available. In addition, infant deaths should be carefully studied by trained personnel at health centres. Finally this study adds to mounting evidence that primary health care services represent one strategy to mitigate some of the negative impact of social inequalities on infant health. Social inequalities must be decreased by supplying primary health care services to the whole community.

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Social Distances of Medical Students from a Person in a Depression Vignette; A cross-sectional study

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Abstract

Background: Negative attitudes toward psychiatric disorders are prevalent among health professionals, and little is known about the effects of medical education on the attitudes of students in Turkey. The study aims to evaluate the effects of medical education on the students' social distance from a person with depression.

Methods: Medical students were compared to two other student groups. The data were collected in 2004 by using a questionnaire that included socio-demographic variables, a depression vignette and Social Distance Scale.

Results: A total of 649 students responded to the questionnaire. Faculty students had a greater desire for social distance from a person with depression than did students in a public education centre. The first year faculty students also had higher social distance scores than students in a public education centre. The differences in social distance by faculties and the years were not statistically significant. Most of the first year medical students defined the vignette as "a person with some problems," while most of the final year medical students defined the vignette as "a person with illness." Optimism about the person's prognosis did not differ by the medical students' years. The percentage of medical students who stated that hospitalization necessary was higher in the sixth year than in the first year. Nearly half of the students felt disturbed by the prospect of contact with the person.

Conclusion: Our data supported the hypothesis that current medical education did not significantly influence students' social distance from a person with depression.

Keywords: Depression, social distance, medical students, attitudes, and behaviours.

Introduction

At the beginning of the 21st century the World Health Organisation (WHO) estimates that one in four families has at least one family member suffering from a mental or behavioural disorder[1] Moreover, negative attitudes and behaviours toward psychiatric disorders are still prevalent and have a large impact on communities [2-7]. Negative attitudes have increased these diseases' social burden for centuries, preventing people from seeking help for early diagnosis, treatment and care. Millions of people with mental illness still do not receive adequate treatment, and suffer from the social exclusion and isolation associated with negative attitudes. The life quality of people with mental disorders continues to be poor even after recovery from their disease, because of social factors such as stigma and discrimination [1].

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Although attitudes toward depression are more positive than toward other mental disorders, depression remains very important with respect to public health because it is a highly prevalent disorder, and will become the second leading cause of disability adjusted life years lost by 2020 [1]. Moreover, negative attitudes toward people with depression arise frequently [3, 6, 8]. Even worse, some studies have found that health professionals were more negative than the general public toward people with mental diseases [8, 9, 10]. For many reasons, physicians are key personnel in health care, and their attitudes need more attention. First of all, physicians' attitudes may play a significant role in the general population's attitudes toward mental illness. They also are crucially important to good health care. Negative attitudes of health professionals may be an important barrier to receiving proper mental health care.

Medical schools with effective educational programs may provide an opportunity to reduce physicians' negative attitudes and behaviours. There is no special subject in medical curriculum to reduce social distance in Turkey, and current medical education can be described as a bio-medical model. Social and psychological factors are not important as biological factors in this model. Morover, the results of studies carried out on medical students were also inconsistent. Some of them pointed out that medical education positively affects social distance [11, 12] while others indicated transient effect or no significant effect [13, 14]. With regard to mental disease, optimism about the effectiveness of treatment and prevention was lower in the sixth year than in the first year [15]. In a study from Turkey, sixth year students had better attitudes toward people with depression than did second year students [11]. It seems that the effects of medical education on attitudes are neither clear nor unique.

In Turkey, few studies have examined the effects of medical education on attitudes and behaviours toward people with depression [11, 16, 17]. The previous studies compared medical students by 4^{th} or 5^{th} year (generally before and after their psychiatry training). This study, in addition to comparing first and final year students, compared medical students to both engineering students and students in a public education centre (PEC), regarding their social distance from people with depression. In other words, two control groups were used to compare medical students' attitudes. Therefore, the study provided opportunities to evaluate attitudinal changes within the medical students, and to compare two different groups. The study's main aim is to evaluate medical education's effects on social distance from a person with depression. Our hypotheses is; "There is no significant effect of the current medical education on social distance". The study also gives some additional information about the relationship among social distance, attitudes and the opinions of students with a medical education.

Methods

Sample

This cross-sectional study was carried out in 2004 in Erzurum (a province in Eastern Turkey).

The study's sample consisted of three student groups which included Medical Faculty, Engineering Faculty of Atatürk University and the Public Education Centre (PEC). Engineering students were selected because their academic ability was similar to medical students'. PEC students were included in the study because their ages

were similar to faculty students'. However, they had a high school or lower educational level and were attending specific courses related to car repair, sewing, hairdressing, etc.

The study's sample consist of 716 students (249 medical students, 292 engineering students and 175 PEC students), and the response rate was 90.6%. There were a total of 541 faculty students, accounting for 290 in their first year and 251 in their final year. Final year refers to sixth year for medical students and fourth year for engineering students. The students were between 15 and 32 years old, and their mean age was 20.6 ± 2.8. Of the subjects, 79.2% were male.

At the beginning of the interview the study's aim was explained and verbal informed consent was obtained from the subjects. No identifiable data related to the students were collected.

Instruments

General questions: A structured questionnaire was used to collect the subjects' socio-demographic features. The form asked about age, gender, education, parents' education, marital status, economic level, household number, residential area of the family and psychiatric history.

Vignette: A vignette depicting a case of depression fulfilling the respective DSM-IV criteria was used, and then the subjects were asked closed-ended questions about the health status of the person in the vignette. "How is his health status?" The responses were "1- Illness," "2- Healthy person" and "3- Person with some problems." "Whom should he seek treatment from?" Possible responses were "1- General practitioner," "2- Imams, religious leaders," "3- Specialist," "4- Psychiatrist" and "5- No one." "What do you think about the person's recovery if you say that he is ill?" Response options were "1- Fully recoverable," "2- Partially recoverable" and "3- No improvement."

Social Distance Scale: Social distance is the amount of distance that individuals of one group would hypothetically place between themselves and members of another group in certain personal contact situations. The Bogardus Social Distance Scale is a psychological testing scale created by Emory S. Bogardus to empirically measure people's willingness to participate in social contacts of varying degrees of closeness with members of diverse social groups [18]. This study assessed social distance between the students and the person in the vignette with a social distance scale, which has 14 items. The validity and reliability of the Turkish version of the scale was studied by Arkar and it was found reliable and valid [19]. Each item is rated on a 7-point scale, ranging from 1 (absolutely no discomfort) to 7 (absolute discomfort). The points were summed in order to calculate the total score, with a minimum 14 points and a maximum of 98 points. The items in the scale were about the social relations with a person at home, workplace, public bus and shop. This study's reliability analysis of the scale revealed high internal consistency ($\alpha = 0.90$), with a corrected item-total correlation range of 0.42 to 0.70.

Statistical Analysis

T-test, analysis of variance and covariance were used to compare the mean scores by socio-demographic variables. Partial correlation was used to control covariates. In terms of frequencies, differences between groups were evaluated using a Chi-square test. Regression analysis was also used to clarify independent variables' effects on social distance score. All statistical tests were two-sided, and a p value of <0.05 was accepted as statistically significant. Statistical procedures were carried out using Epi Info version 3.3.2, developed by the Centers for Disease Control and Prevention.

Results

A total of 649 (response rate 90.6%) students completed the questionnaire. In terms of parental education, 18.5% of the mothers and 2.8% of the fathers were illiterate, and 87.2% of the mothers were housewives. Their descriptive characteristics are shown in Table 1. 79.2 % of the students are male. Of these students, 83.1% stated that their income level was medium.

Table 1: Descriptive characteristics of the subjects

Characteristics		n	%
Age groups			
	15-19	305	47.0
	20-24	288	44.4
	25-32	56	8.6
Gender			
	Male	514	79.2
	Female	135	20.8
Economic level			
	Low	65	10.0
	Medium	539	83.1
	High	45	6.9
School			
	Medical Faculty	228	35.1
	Engineering	270	41.6
	Public Education Centre	151	23.3
Total		649	100.0

The analysis of partial correlation (controlling for the school type) found no significant correlation between age and social distance scores ($r=0.03$, $p=0.4$).

Table 2 displays social distance scores by socio-demographic variables. Among these variables, only school type was associated with social distance. Concerning family history, 6.0% of the subjects had a family member with a mental disorder. In terms of their individual problems, 5.9% of the subjects used psychiatry services. Social distance scores by use of psychiatry service were very close to each other.

The faculty students had greater desire for social distance than the PEC students ($F=20.6$, $p < 0.001$). Multiple comparisons with the Bonferroni method showed that the differences in social distance by faculties were not statistically significant. Both first and final year medical students had greater social distance than PEC students.

With regard to the years of education and social distance, there was no significant difference between first and final year students of the faculties ($p >0.05$). There was a slight decrease in the final year medical students, while there was a slight increase in the final year engineering students. However, the differences were not significant ($p>0.05$).

Age, gender, school type, psychiatric history, income level, parents' education, household number, rural-urban residential area and social distance were included into multivariate regression analysis, and only school type showed statistically significant differences in social distance scores ($F=20.6$, $p<0.001$).

Table 2: Social distance by the subjects' psychosocial variables

Psychosocial variables	n	Mean	SD	Statistics
Gender				t= 1.3, p= 0.18
Male	514	57.2	17.9	
Female	135	59.5	17.4	
School				
Medical faculty	228	59.9	17.3	F=20.6,p<0.001
Engineering faculty	270	60.2	17.0	
Public Education Centre	151	49.8	17.9	
Medical Faculty				
First year	112	60.2	17.5	t=0.2, p=0.8
Final year	116	59.7	17.2	
Engineering				
First year	156	59.1	16.7	t=1.3, p=0.18
Final year	114	61.9	17.4	
Economic status of family				
Low	65	59.0	21.8	F=0.2, p=0.8
Moderate	538	57.5	17.1	
High	45	58.4	19.8	
Mother's education				F= 0.7, p=0.6
Illiterate	120	57.3	18.1	
Primary school	303	56.7	17.7	
Secondary school	72	58.9	17.7	
High school	94	59.7	18.7	
University	59	59.1	16.5	
Where did you live most of your life?				F=0.6, p=0.6
Province	454	58.3	17.2	
Town	129	56.1	18.6	
Village	62	56.6	20.3	
Family history of psychiatric disorders				
Yes	39	55.59	17.82	t=0.7, p=0.4
No	610	57.83	17.82	
Use of psychiatric services				
Yes	38	58.11	17.03	t=0.1, p=0.9
No	609	57.72	17.89	
Total	649	57.7	17.8	

SD: standard deviation

The medical students' opinions about the person in the vignette are presented by the years in Table 3. There were significant differences between the first and final year students regarding health status and hospitalization of the person. Most of the first year medical students defined the status as "a person with some problems," while most of the final year medical students defined the status as "a person with an illness" (X^2 =46.3, p<0.001). The percentage of medical students who stated that hospitalization was necessary was higher in final year students than in first year students (X^2 = 14.7, p = 0.001). Optimism about the person's anticipated

prognosis did not differ by medical school the years.

Table 3: The medical students' opinions by their years of education

	Education year				**Total**		
Opinions	First		Final				Chi square
Health status of the person	n	%	n	%	n	%	
Illness	33	29.5	85	73.3	118	51.8	$X^2 = 43.8$
Others	79	70.5	31	23.3	110	48.2	**p < 0.001**
Application for healing							
Health professionals	106	94.6	110	94.8	216	94.7	$X^2 = 0.04$
Others	6	5.4	6	5.2	12	5.3	p = 0.9
Anticipated prognosis							
Fully recoverable	71	63.4	63	54.3	134	58.8	$X^2 = 1.9$
Partially recoverable/no improvement	41	36.6	53	45.7	94	41.2	p = 0.18
Hospitalization of the person							
Necessary	60	53.6	90	77.6	150	65.8	$X^2 = 14.6$
Unnecessary	52	46.4	26	22.4	78	34.2	**p = 0.001**
Total	**112**	**49.1**	**116**	**50.9**	**228**	**100.0**	

Nearly half of the students felt disturbed about contact with the person in the vignette. The percentages of students who stated a little discomfort, discomfort or absolute discomfort (points 5, 6 and 7) are presented in Table 4.

Table 4: Percentages of the students who stated negative attitudes by school type

Attitudes	**Negative attitudes by school type (%)**			
With the person or like the person …	Medicine	Engineering	PEC*	**Total**
That your sister wants to marry …	91.7	85.9	58.9	81.7
Sharing a room in your workplace …	68.4	68.9	36.4	61.2
Your lease holder …	62.7	62.2	39.1	57.0
Your hairdresser or coiffeur …	57.5	56.7	35.1	51.9
Sitting side-by-side on a bus during a long travel …	55.3	50.7	36.4	49.0
Talking about your daily problems …	58.8	48.9	28.5	47.6
A doorkeeper in your apartment …	49.1	52.2	31.8	46.4
A close neighbour …	49.6	48.1	27.2	43.8
To play a game …	39.0	43.3	45.0	42.2
Talking about your country's problems …	39.0	39.3	27.2	36.4
Working in a different room in same workplace …	37.7	33.0	23.2	32.4
Joining a family meeting …	33.8	37.8	26.5	33.7
Sitting side-by-side on a bus during a short travel …	32.9	28.1	19.2	27.7
Shopping from a shopkeeper …	24.1	30.4	16.6	25.0

* Public Education Centre … refers to with the person or like the person

The most disturbing relations with the person are having him marry their sister, sharing a room with him in a workplace, renting a flat with him and being his hairdresser. More than half of the students stated disturbances related to these issues. Working in a different room in the same workplace, sitting side-to-side on a public

bus during a short travel and shopping from a shopkeeper caused lower disturbance than the other issues.

Discussion

This study provides additional information related to medical education's effects on the students' social distance. Socio-demographic variables' and medical education's effects on social distance, and opinions about depression, were discussed based on the present data and related literature.

Influence of socio-demographic variables on social distance

Having a mentally ill family member, using psychiatry services, income level, age, gender and mother's education were not associated with social distance. These results are consistent with previous studies [5, 20, 21] that reported no relationship between attitudes toward people with mental illness and demographic variables such as age, gender, education, marital status and personal exposure. Some studies have reported that the desire for social distance increased with age [3, 22], while another study suggested that positive beliefs, attitudes and behavioural intentions were higher among the youngest [23]. No differences by age groups were found in a study from Australia [14]. With regard to gender and attitudes, our findings are consistent with the studies [3, 9, 23] that indicated no significant differences. However, some other studies have reported that females maintained greater social distance than males [2, 13, 22, 24]. With regard to previous contact and social distance, our results were similar to the results of studies that reported no differences [7, 19, 25]. Based on these results, it can be said that all the variables mentioned above had a minimal effect on social distance.

A significant relationship was observed between social distance and school type in this study. Our data imply that education level may increase the desire for social distance. This result was supported by numerous studies that implied an inverse relationship between educational level and social distance [3, 8, 10]. Faculty students had greater social distance than PEC students in our study. However, we thought that this was not an effect of faculty education because the first year students also had greater distance scores than PEC students. This finding implied that the difference may be associated with education before the faculty education.

Influence of medical education on social distance

Our data indicated that current medical education did not significantly reduce the desire for social distance from a person with depression. In a study carried out on medical students, Yanik et al reported no significant differences on social distance by school years except for one item [17]. A study from Turkey reported no statistically significant difference in the attitudes of first and final year medical students in terms of marriage, relationship, danger and physical examination, while the attitudes related to job opportunity were improved [16]. Another study carried out in a nursing school found that education of health professionals did not significantly affect their attitudes toward the mentally ill [26]. Our findings are also consistent with the numerous studies suggesting that health professionals had more negative attitudes than the public toward people with mental illness, including depression [8, 9, 10].

However, another study suggested that social distance from people with mental illness was lower in medical students than in the general public [24]. Another study reported that last year students had improved attitudes toward the mentally ill; however, they still had strikingly stigmatizing opinions and judgments [11]. A five-year follow-up study observed significantly favourable and unfavourable changes in medical students' attitudes toward people with mental disorders, while some of their attitudes were unchanged [15].

Baxter indicated that positive changes in medical students' attitudes toward psychiatry, psychiatrists and mental illness after their fourth-year psychiatry training were transient and decayed over the final year [13]. Our result also supports the assertion that medical education's effect on attitudes toward people with mental disorders is transient or minimal [10, 13, 15, 17].

Influence of medical education on opinions
As a result of their increased knowledge, final year medical students were able to recognize depression better than first year students. Our study indicated that some opinions had changed during medical education. Students who stated that hospitalisation was necessary for the person in the vignette were more frequent in the final year than in the first year. This result may be related to the biomedical education model without a psychosocial perspective. Today, it is known that most mental illnesses are influenced by biological, psychological and social factors. The WHO has reported that shifting patients from hospitals to community care is cost-effective [1], and may promote patients' quality of life and recognition of their human rights.

However, the final year medical students were less optimistic about the recovery from depression than the first year students. Our results are consistent with some other studies in this regard [9, 16]. A follow-up study indicated that optimism about the effectiveness of treatment and prevention was lower in the sixth year than in the first year [15]. However, another study carried out in Istanbul asserted that 90% of the last year students perceived this condition as temporary and curable, compared to 75.7% of second year students [13]. The misconception that a person with depression can never be normal is common among medical students. Erasing these misconceptions may be useful for reducing discrimination and stigma.

Attitudes' frequency
Negative attitudes toward people with depression are common among the students. A majority of the students stated disturbances at the prospect of their sister marrying the person in the vignette. Nearly two-thirds stated that they would feel uncomfortable sharing a room in the workplace, and one-third subjects would feel uncomfortable about working with the person. The results of Ozmen's study reported that negative attitudes toward people with depression were common among the public [6]. These results were also similar to the results of studies from different countries [2, 4 5, 7].

The current medical education model, which can be defined as a biomedical approach, does not effectively promote positive attitudes toward patients with depression. Attitudinal change is a big challenge but it plays a significant role in public health education and in reducing discrimination and stigma. Humanity perspective in medicine may be useful to reduce social distance.

One of this study's limitations is that its subjects do not represent all of the medical students in Turkey. Other limitations are related to the study's cross-sectional methodology, and to the fact that the causal relationship is weak. The results

may be affected by a cohort effect or un-observed factors. The biomedical approach of the faculty is a typical model for most of the faculties. In order to clarify medical education's effects on students' attitudes and behaviours, further studies need to be carried out with more representative samples.

Conclusion

Medical students maintained greater social distance from people with depression than did students who were at a lower educational level. We concluded that current medical education did not reduce social distance from people with depression. Negative attitudes toward people with depression were common among faculty students. Our findings may be useful to improve the medical curriculum and the perspective of medical education.

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ORIGINAL ARTICLE

Some Environmental Health Specifications at State Primary Schools in Edirne during the European Union Entry Process in Turkey

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Abstract

Objectives: Countries have to conform to EU standards in many areas during the EU entry process. One of these is environmental health conditions that influence primary school students. Intensive work is continuing in Turkey to ensure that primary school environmental health conditions conform to EU standards. The fundamental step in this work is to determine the environmental health conditions in the relevant schools. Our aim in this study was to determine the environmental health status of schools located in a city centre on the European side of Turkey. **Material and Methods:** The research is a descriptive study. The environmental health conditions of 32 state primary schools in Edirne's Provincial Centre have been evaluated. We gathered data through school directors and did some measurements and observations. The standards of the European Union (EU), World Health Organization (WHO) and Turkish Standards Institute (TSI) were used in our evaluations. Additionally, improvements that must be made for better student health with regard to environmental health aspects at the schools were investigated. **Results:** There was no library in 3 out of 32 schools, and 7 out of 32 were lacking a Students' Club for Environmental Health. Ten of the schools had an inadequate number of boys' WC, 24 had an inadequate number of toilets, and 16 schools had an inadequate number of girls' WC. Only 5 of the schools provided toilet paper for students. Two schools was lacking chlorine in the drinking water. Nine of schools were over 65 dbA and 17 schools had over 55 dbA outdoor noise level (as Leq). The width of the hallways (14 schools) and stairways (11 schools) were inappropriate. The individual space for each student was insufficient in 19 of 32 schools. The doors of classes were being opened into the classrooms in some schools (18/32). In 2 schools, periodical carrier examinations of canteen workers were not being carried out. There was no shelter in 20 schools, and no fire extinguisher in 2 of them. There were coffee houses within 200 meters of 9 schools and base stations within 25 meters of 2 schools. **Conclusions:** An important number of the state primary schools in Edirne Provincial Centre are not in adherence with the standards of the EU, WHO and TSI. These standards should be carefully obeyed during the construction of new school buildings. Furthermore, poor conditions within a majority of schools at the present time should be improved.

Keywords: School Health, Environmental Health, European Union

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Introduction

The expansion of the European Union is one of the most debated subjects in EU circles in recent years. EU members are most worried about the conformity of the applicant countries regarding education, health, the environment and economy. Countries going through the EU entry process have to meet the specified standards in every area of education.[1]

The EU entry efforts of Turkey have been going on for many years and have accelerated following the decision to start negotiations in December 2004. One of the tasks to provide conformity in the field of education is to improve schools' environmental health conditions. Even tough there have been some work about this topic since 90s, propensity has increased with the onset of the EU negotiations. Evaluating the physical environment of schools will constitute the first step of this process.[2]

The basic approach to education in EU countries is the implementation of the "***Lisbon Strategy***" and "***16 Quality Indicators"*** standards. The "***16 Quality Indicators"*** include an efficient and effective educational environment and safety and health at school. This includes classrooms, stairs, corridors, school play areas, and the number and hygiene of restrooms that conform to the specified standards. Taking into account the standards used in member countries, the physical conditions required will include 24-student classrooms and 1 restroom per 35 students.[3]

The Ministry of Health is conducting "The European Network Health Promoting School Project", which is already implemented in more than 40 countries, in Turkey during the EU entry process. The project is supported by the WHO and the EU. One of its aims is to improve the physical environment in schools. The project was started at 1995 in 25 primary schools and is currently in use in 106 schools.[4]

Schools are outside houses, the noteworthy environments where outer factors can be exposed to.[5,6] The inadequate structural conditions in these environments increases the risk for accidents such as injury or fire.[7] Students stay together in small spaces for very long periods of time, which could increase the spread of infectious diseases. Due to these risks, the quality of the school environment needs to be improved.[8]

Primary education in Turkey, which covers an 8-year period and is for students under the age of 15, is a period in which students are exposed to environmental factors.

The Primary education period is a time when a young person develops both physically, psychologically, and socially. As students cannot go to school after completing the Basic Compulsory Education in developing countries, the school health services gain priority during the Basic Compulsory Education period.[9]

The impacts of environmental factors during the primary school period can have negative effects of the later development and whole life of the student.[9] One-third of their day is spent in the school environment; therefore, the environment can affect student health. This period of development is a crucial period before passing on to adulthood. The group of school ages is constituting more than 30 % of total population because the importance of this group can be evaluated. [10]

The Thrace region in Western Turkey is on the European side of Turkey. This region has more accurate health statistics than other parts of Turkey. The province of Edirne is an important residential centre in the Thrace region.[11]

In Turkey, approximately 10 million students receive Primary education in 38 674 primary schools. In Edirne province, about 47 146 students receive primary education in 354 primary schools.[11] In Edirne Provincial Centre, there are 3 private and 32 state-run primary schools.[12]

The aim of this study was to evaluate the environmental health specifications of some primary schools in a Turkish city centre that is relatively developed and

geographically within the European continent.

Material and Methods

The study is a descriptive observation-based field study. It was conducted in the 32 state-run primary schools of Edirne provincial center.[12] In these schools, the environmental health conditions have been evaluated. First of all, permission to review the schools has been granted by the provincial National Education Directorate. Every school was visited in turn, and demographic and environmental information was given by the schools' directors. Some measurements and observations about the Environmental Health conditions have been directly observed at the school locations.

Measurements of the chlorine level in drinking water were taken systematically at each location (same methods and materials), as were measurements of the classroom, stairway, and garden dimensions. A calibrated hand sound level meter (software for the Casella cel-480, United Kingdom) was used in noise measurements and noise levels were measured outside 32 school buildings. In the evaluation of the data, some standards of the European Union (EU), the World Health Organization (WHO) and Turkish Institute of Standards (TSI) 12014 (*School Environmental Health Standard*), have been used.[3,13,14] It has been found to be appropriate that the width of the corridors should be at least 3 meters, and the step dimensions should be 30-150-15 centimetres (width, length, height). Classrooms should have an area of 1.2 square meters per student, 24 students per class, and doors opening outside of the class, and the door's width should be 90 cm, and the distance of the board to the first desk should be at least 2 m.

In the washrooms, there should be 1 cabinet for every 20 girls or every 25 boys, 1 pissoir for every 15 boys, and 1 water tap for every 25 students. Acceptable trash collection standards include collection 3 times per week and a covered and leak-proof trash collection area. A school playground with at least 5 square meters per student is acceptable.[13] In addition, additional potential improvements for Environmental Health in schools have been reviewed.

Results

In the 32 state primary schools where the study has been conducted, there are 16 042 students, of whom 51.2 % are male. In addition, these schools have 814 employees, of whom 705 are teachers and 109 are other staff members. The number of students per class was 35% higher than the European standard.

As a result of the measurements and observations that were done in 32 schools, the width of the corridors in 14 schools (43.7 %) and the width of the stairs in 11 schools (34.3 %) have been found to be inappropriate. There are mobile base stations within 25 meters of 2 schools. Some of the measurements and observations are given in Table I.

Table I: Some of the Measurements and Observations from State Primary Schools in Edirne Provincial Centre

Some of the measurements and observations	SCHOOLS (n=32)	
	Number	%
Physical conditions		
With inappropriate width of corridor	14	43.7
With inappropriate stairs	11	34.3
Inappropriate area per individual in classroom	19	59.3
Inappropriate distance of first desk to the board	5	15.6
With class doors opening in to the classrooms	18	56.2
With inappropriate door width	9	28.1
Without shelter	20	62.5
Without fire extinguisher	2	6.2(2/32)
Outdoor risks		
Outdoor Noise level		
65 dbA (Leq) and above	9	28.1(9/32)
55 dbA (Leq) and above	17	53.1(17/32)
There is no green-belt	7	21.8
which are at 25 m. distance to base station	2	6.2(2/32)
Inappropriate play area (garden)	10	31.2
Coffee-house within 200 meters of school	9	28.1
Organisational insufficiencies		
Without Environmental Health club	7	21.8
Without library	3	9.3(3/32)
Without conference halls	17	53.1
Without student representative	3	9.3(3/32)
Communicable diseases risks		
Water		
Chlorine levels of drinking water		
0 ppm	2	6.2(2/32)
0,1 ppm and above	30	93.7
Without water tank	19	59.3
Toilets are outside of school building	7	21.8
Wastewater stored in cesspool	1	3.1(1/32)
Toilettes	s	
Insufficient number of boys' toilet	10	31.2
Insufficient number of pissoirs	24	75.0
Insufficient number of girls' toilettes	16	50.0
Without toilet paper	27	84.3
Without siphon in toilets	6	18.7
Without soap	1	3.1(1/32)
Without towel, hand drying apparatus	27	84.3
Trash		
Inappropriate frequency for collecting trash	7	21.8
Inappropriate trash collecting places	8	25.0
There is a place for recycling	8	25.0
Which have regular testing of canteen workers	2	6.2(2/32)

Discussion

The conditions in Turkey's primary schools fall below the required standards. Education is provided in state and private primary schools. The necessary legal regulations have been prepared during the EU conformity stage, and all newly constructed schools, whether state or private, are inspected to insure strict conformity with the standards. [4]

The non-conformity, especially of state schools, is an important problem in adapting education during the road to EU membership. This problem may be solved with "*The European Network Health Promoting School Project*" supported by the EU and WHO.[15]

Although the situation in Edirne is not positive, the recent trend regarding financial development and the EU conformity period in Turkey indicates that environmental health conditions in primary schools will be much better soon.

Coffee-houses should at least be at 200 meters from schools, and the lack of adherence to this regulation (9 of 32 schools) is a very serious problem.[16] A lack of Environmental Health groups (in 7 of 32 schools), no student representatives (in 3 of 32) in schools and the lack of even the compulsory practices is thought provoking. Apart from these deficiencies, the lack of carrier tests (for infectious diseases) among canteen workers in two schools can have dangerous effects on the spread of contagious diseases.[17] As they are the only employees that have direct contact with food, periodical investigations of canteen workers were evaluated. Problems with disposal of liquid and solid waste increases those dangers, e.g., the inappropriateness of the frequency of trash collection (21.8 %). Baharli et al. found a similar ratio (64.3 %) for rural parts of Antalya.[18] In addition, in more than half of the schools (62.5 %), there is not a shelter. This is a good example for the inappropriateness of the buildings. It is also possible to experience such similar inappropriate conditions in developed countries. For instance, in New York City, evidence from a study conducted in 39 public schools found that 30% of schools had structurally inadequate conditions.[19]

In the schools under study, the corridor widths, stairs and the class space for each student have been found to be inappropriate in 43.7, 34.3, and 59.3 % of school, respectively. Baharli et al. found these percentages to be 59, 75, and 93.2 % for the rural part of Antalya.[18]

Falling injuries are common in elementary schools. [14] Therefore, it is very important that the dimensions of the stairs and aisles must be in appropriate width in accordance with the legislations of the government. Moreover, in 53.1 % of the schools, the doors are opened to the interior. This can cause problems in emergency situations. Baharli et al. reached the same conclusion (57.6 %) for the rural part of Antalya.[18] In our sample of 32 schools, toilets for boys (31.2 % of schools), pissoirs (75.0 % of schools), toilets for girls (50.0 % of schools) and water taps (50.0 % of schools) are insufficient. Baharli et al. found similar insufficiencies: 43.7, 97.7, 86.5, and 61.4 % in the rural part of Antalya.[18] In most of the washrooms, a lack of toilet paper causes problems in meeting personal hygiene requirements. A study by the IES (Institute of Education Sciences) in the USA of 1205 public schools in the state of Colorado found 16% to be physically inadequate.[20]

Only in one of the schools in our study was drinking water determined to be free of chlorine. Free chlorine level was at a normal level at other schools, meaning that this is a problem at only one of the schools in this study.

In our study, 53.1 % of the schools under investigation have outdoor noise levels above 55 dbA and 28.1 % of the school's outdoor environment receives noise that is above 65 dbA. In Avsar and et al. it was reported that the outdoor noise levels of 15% of primary schools in Istanbul pass over 65 dbA.[21] The sound pressure level of the noise from external sources should not exceed 55 dbA (as Leq) according to

guideline values recommended by World Health Organization (WHO) for the outdoor playgrounds of schools.[22] Noise levels exceed WHO recommendation of 55 dbA (as Leq) in school playground, in 53.1 % of the schools investigated. Furthermore 28.1 % of the schools are exposed to noise events that regularly exceed 65 dbA. In our country, according to current regulation of noise control guideline values recommended were 65 dbA (as Leq) for school outdoors.[23] U.S. Environmental Protection Agency suggests; the levels of 45 decibels are associated with indoor residential areas, hospitals and schools, whereas 55 decibels is identified for certain outdoor areas where human activity takes place.[24] There are Turkish standards related to environmental regulations on school health (TS 12014-1996).[13] According to these standards, it is pointed out that educational buildings should not be on the main road and measures should be taken to prevent the outdoor noise from penetrating the school. However, any limitation value is not given in these standards regarding noise.

There have been two base stations at 25 m distance from schools, and this point attracts attention. The permission for such base stations that expose children electromagnetic radiation effect is given by the Istanbul Turkish Telecommunications Directorate. It should not be forgotten that such proximity can have negative health effects in the future. A further danger is that, in 42.9 % of the schools, there are no traffic precautions taken for the end of the school day. This can be an important risk factor for accidents, and Baharli et al. reached similar results (40 %) in rural Antalya.[18]

Conclusion and Suggestions

An important number of the state primary schools in Edirne Provincial centre are not appropriate with regards to their Environmental Health conditions as determined by EU, WHO and TSI standards. Education is one of the criteria that need to be met in the EU membership process, and school environmental health conditions play an important role within this context. It is therefore necessary to improve school environmental health conditions both for EU membership and their influence on child development. New school buildings must be in accordance with the legislations of the EU. Improvement of the previously built school buildings is also very important. In existing schools, conditions should be improved, and, if possible conditions allow, base stations and coffee–houses should be removed, toilet equipment should be improved, and traffic precautions should be taken. Due to the effect of noise especially on learning, around the present schools, precautions, particularly at school hours, should be taken to reduce the noise level to the least.

In addition, the state of the Environmental Health conditions should be examined periodically, and, if negative conditions are observed, measures should be taken immediately by the concerned institutions. Problems should be solved before negotiations start during the EU entry process. The negotiations will otherwise result in very important problems themselves.

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