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Contents

From the Editor

Dear Readers,

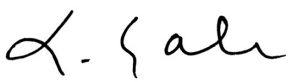
In the last issue of 2007, you will find articles about smoking, perceptions on pubertal changes, unintentional injuries at school and mental health of earthquake victims. The first three articles have a common point that the subject is school children. Many articles which dealt with school children have been published in the Journal since the beginning. New articles are being submitted regarding the different health-related problems of young people or adolescents. I believe this is due to mainly two factors; first of all, school children and youth are considered as important target groups for a wide range of health problems or health-related issues. We see that mental health, substance use, violence, unintentional injuries, nutrition, sexual and reproductive health and HIV are the main health problems that affect adolescents. Likewise, three authors in this issue are discussing some of these important problems. Another reason is that the school children make up the most easy-to-reach population.

In the fourth article, authors are investigating the effect of Marmara earthquake as one of the most severe and destructive earthquakes in Turkey, among a group of residents of temporary field settlements. Although it has been almost 10 years since the earthquake, we wanted to share findings of this research since it had deep impacts on the social and psychological behaviours of the society.

Uzuner discusses her opinion and experiences about managing a "European Union Project". In the notes from the field part of the journal and she provides us with some clues. In their review, Baran et al, are discussing the term of "advocay" from the public health point of view and propose their suggestions on how to make people participate in the decision making process.

Dear readers, we are happy to announce that TJPH will be published electronically in the next issue. We are working on the necessary technical details right now; hoping that you will get an easier access to the Journal in its new format. 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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Information for Contributors

Aim and Scope

The Turkish Journal of Public Health (TJPH) is a peer-reviewed research journal published bi-annually and serving a broad audience in the field of Public Health and Community Medicine both nationally and internationally. TJPH aims to provide a medium for the rapid communication of advances and new knowledge in this field. The editor anticipates receiving manuscripts from the following areas of research: health policy and management, biostatistics, epidemiology, environmental health, health economics, medical demography, social sciences for health, health education, public health laboratory, community nutrition, infectious diseases, disaster management, accidents, women's health/reproductive health, child health, chronic diseases, and occupational health.

Submission of Papers

The following types of contributions are welcomed:

1. Original research articles: papers reporting original research findings in a relevant area (maximum 5000 words).
2. Short reports: preliminary/short reports of research findings (maximum 1500 words).
3. Critical reviews: authors are advised to contact the editor prior to submission of critical review papers (maximum 4500 words).
4. Notes from the field: Highlighting practice-based programs, initiatives of widespread interest, experiences to share with the public health community (maximum 1000 words).
5. Letters to the editor: a limited number of letters to the editor concerning the published papers in the TJPH (maximum 300 words).
6. Data: Data from nationally or sub-nationally representative surveys (maximum 35 tables and figures).

Submissions will be considered on the understanding that they comprise original, unpublished material and are not under consideration for publication elsewhere. A cover letter to this effect should be enclosed with each submission, signed by all authors of the paper.

All papers are published in English although submission of articles in Turkish is encouraged and will not prejudice editorial consideration. The authors may use either the British or the American spelling, but they should be consistent throughout the paper. Submissions undergo a two-tiered review process. The editorial board for overall quality and interest screens them initially. Papers accepted for formal review will be sent anonymously to at least two independent referees.

Authorship

Authorship by more than 6 authors requires justification. We adhere to the criteria of the International Committee of Medical Journal Editors (JAMA. 1997; 277:927-934). For manuscripts with two or more authors, each author must qualify by having participated actively and sufficiently in the study that is being carried out and reported on. The inclusion of each author in the authorship list of a report is based only (1) on substantial contributions to (a) concepts and design, or analysis and interpretation of data and (b) drafting the manuscript or revising it critically for important intellectual content; and (2) on final approval by each author of the submitted version of the manuscript. Conditions 1 (a and b) and 2 must both be met. Others contributing to the work should be recognized separately in an Acknowledgement. In the covering letter that accompanies the submitted manuscripts, it must be confirmed that all authors fulfilled both conditions.

Manuscript Preparation

General

Manuscripts must be typewritten on one side of a white paper, page numbered, and double-spaced with 2.5 cm margins. Good quality printouts with a font size of 12 pt are required. Provide a word count for the paper and abstract. The original copy of text, tables, and figures should be sent to:

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Manuscripts should also be submitted on disk using Microsoft Word. The file on disk should be identical to the hard copy submitted. Tables and figures should follow the text.

Please label the disk with your name, the name of the file on the disk and the title of the article.

Electronic submission would be preferred.

Cover letter

All authors must sign the letter, with one named correspondent (give postal and e-mail addresses and telephone and fax numbers). Disclose all possible conflicts of interest (e.g. funding sources for consultancies of studies of products). A brief indication of the importance of the paper to the field of public health is helpful. You may suggest up to 4 knowledgeable reviewers (include postal and e-mail addresses and telephone and fax numbers).

First title page

Include:

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Type only the title (to keep authorship unknown to reviewers), and remove other obvious indications of author identity.

Text

The text of the article should include the following: Abstract (up to 250 words, followed by up to 6 keywords), Introduction, Materials and Methods, Results, Discussion, and Acknowledgments. Each section should begin on a new sheet.

Figures

All figures (photographs, drawings, diagrams, charts) should be clear, easily legible, and cited consecutively by Arabic numerals in the text (Figure 1, Figure 2, etc) and should be placed on separate sheets. Legends should contain sufficient detail to permit figure interpretation without reference to the text. Units should be indicated in the figures. All line graphs and their respective data points should accompany charts so that they can be replicated on the journal's computers. Cost for printing of color plates will be charged to the authors.

Tables

Tables must be concise, as simple as possible, and cited consecutively by Arabic numerals in the text (Table 1, Table 2, etc). Each table should be titled and typed on a separate sheet. The title of each table should clearly indicate the nature of the contents. Sufficient detail should be included in the table footnote to facilitate interpretation.

References

Cite references in numerical order and as superscripts in the text. List all authors when there are six or fewer; when there are seven or more, list only the first three and add "*et al*." Use Index Medicus (abridged) abbreviations for journal names. Do not reference papers that are "submitted"; these can be mentioned in the body of the text. Cite personal communications in text only, giving source, date, and type (if e-mail, provide sender's address). References should follow the style described by the International Committee of Medical Journal Editors (www.icmje.org). The following are sample styles:

Journal article

Feldman HA, McKinley SM. Cohort versus cross-sectional design in large field trials: precision, sample size, and unifying model. Stat Med 1994; 13: 61-78.

Book

UNICEF. State of the World's Children. New York: Oxford University Press, 1998.

Chapter in a book

Phillips SJ, Whisnant JP. Hypertension and stroke. In: Laragh JH, Brenner BM, editors. Hypertension: Pathophysiology, Diagnosis, and management. 2nd ed. New York: Raven Press; 1995. p. 465-78.

Online book or web site

Garrow A, Winhouse G. Anoxic brain injury: assessment and prognosis. In: Up To Date Cardiovascular Medicine [online]. Available at: www.UpToDateInc.com/card. Accessed February 22, 2000.

Acknowledgements

Prepare acknowledgments on a separate page. Upon acceptance, you will be asked to certify that you have listed all persons who have contributed substantially to the work but who do not fulfill authorship criteria and that you have obtained permission for listing them. Also required is disclosure of all financial and material support. If human subjects are involved, you must report approval by an institutional review board. TJPH adheres to the Declaration of Helsinki of the World Medical Association (JAMA 1997; 277: 925-926).

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Epidemiology of Unintentional injuries in the Elementary Schools of Istanbul

Kamer Gur[a], Ayse Yildiz[b]

Abstract

Background: This study aims to determine the epidemiology of unintentional injuries in the elementary schools of Istanbul.

Methods: This descriptive research has been done during the spring-autumn terms of 2003 and spring term of 2004 and universe of this study has been all of the private and state schools in Istanbul subordinate to the Ministry of Education (School N=1540 and student N=1.623.693). Data have been collected on-line through the "Student Injuries Form".

Results: During the research process, 3302 school injuries have been reported. The School injuries have been seen mostly among first, second and sixth grade students. The number of boys involving in school injuries have been twice the number of girls and the leading reasons for the school injuries have been fallings, hitting into something, and bumping into someone. It has been determined that the students have got injured mostly on their heads and extremities. Research has shown that the school injuries have resulted mostly in swelling, sensitivities, abrasion, bleedings, cuts, bruises, fractures, and twists. Because of the injuries, 24% of the injured students have retreated from the school activities for less than a day. The injured students have received first aid at school just after the injury, 15% of them have been sent to a medical institution.

Conclusions: Unintentional injuries among elementary school students should be recognized as a significant public health concern in Turkey. This study provided useful baseline information on school injuries in Istanbul and identified important risk factors that would be important in planning prevention strategies. Preventing injuries requires using a multisectoral approach and structuring safe interactions among people, objects and school environment. When every school employes a nurse, there will be fewer restricted activities of students and similarly, a fewer students will need to be transferred to hospital. In addition, injured students will be receiving first aid just after the injury. It is the nurses' responsibility to determine possible hazards and take necessary precautions by the environmental factors and personality of children. In that sense, preventing injuries is an important role of the public health nurses.

Key words: school injuries, epidemiology of injuries, school nursing

Objectives

Researches have shown that students who are happy, healthy, and adaptable to social life grow up in a safe environment. Moreover, it has been proved by the researches that students who grow up in a safe environment have a better academic performance, and they exhibit less aggressive behavior. In addition, those children are more flexible and more stable in terms of socio-emotional behaviors. On the other hand, an emotional or physical trauma that a child experiences may result in an impairment or depression.[1,2]

Childhood injuries are responsible for approximately 16,000 deaths each year in the United States, and more than 70 percent of these deaths are the result of unintentional injuries. Non-fatal unintentional injuries also are a significant cause of childhood morbidity. More than 20 million nonfatal injuries are estimated to occur among U.S. children each year, costing $347 billion. This estimate included $17 billion to be in medical costs, $72 billion in future work lost, and $257 billion in the lost quality of life.[3]

Approximately 4 million children and adolescents are injured at school each year in the United States.[4]

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Results of the other epidemiological studies indicate that from 10 to 25 percent of injuries incurred by the school-aged population, occur at school.[5] According to Limbos at all[6] the unintentional injury rate was almost five times the intentional injury rate. On the other hand injuries also lead children to stay away from school. According to National Center for Health Statistics, regardless of the number of injuries, over 10 million school days are lost each year (22 lost school days per 100 students).[7]

An injury is defined as "unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as heat or oxygen." Commonly used categories are: Unintentional (i.e. accidental),

Intentional (i.e. deliberate)[8] injuries are not accidents. They can be prevented by changing the environment, individual behavior, products, social norms, legislation, and governmental and institutional policy.[4]

Although most of the school injuries are minor cuts or bruises which can easily be recovered, there are also quite a few serious cases. These injuries unbalance the children's physical, psychological and social well being, as well as causing illnesses, disabilities, or even deaths. In addition, they result as a financial burden to the families and the society.. Therefore, childhood injuries are an important issue to focus on.[9,15,16]

Children face a lot of threats which may end in injuries and they get injured while they are going in or out of the school building, or when they are on the school buses, in the classrooms, corridors, laboratories, playgrounds, sports halls, or art and craft classes.[15,17]

A lot of researches have showed that 90% of the school injuries are preventable. If children and other related people are aware of the safety precautions and equipped with training, they improve safety behaviors, and as a result of that, most of the injuries and deaths can be prevented. It is the nurses' responsibility to determine the possible hazards and take the necessary precautions by considering the features of the child and the environment. In that sense, preventing injuries is an important role of the public health nurses.[18,19,20,21]

Methods

This study aims to determine the epidemiology of the unintentional injuries in the elementary schools in Istanbul. This descriptive research was carried out in Istanbul's private and state schools subordinated to the Ministry of Education during the spring-autumn terms of 2003 and spring term of 2004 (School N=1540 and student N=1623693). While 1337 of these schools are state schools, the other 203 are private schools. Whole population was taken into account without sampling. The data of the research was collected on-line through the 'Student Injuries Form' which was created by the researcher by considering the international literature.

In this form, injury definition is as follows; "An injury is defined as "unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as heat or oxygen." In this form's directive, 3 components are taken into consideration. These components are involved in the directive as follows. "Please fill in this form if the injury occurred unintentionally. *Do not fill in if you think that there is intention in the event. Fill in the form without taking into consideration the severity of injury* (do not think whether it is important or not).

This form includes demographical features, the length of the period during which the student could not attend school because of the injury, action taken after the injury, nature of the injury, area affected, contributing factors, period during which the injury occurred, surface, location in which the injury occurred, and activities during which the injury occurred.

'Student Injury Form' was tested during a two-week study and finalized after the necessary corrections were made.

All the schools were informed through the National Education Directorate of Istanbul about the purpose, the duration of this study, how to fill in the form, and whom to hand in the forms. The responsibility of the filling in the forms was given to the school nurses or other school staff because there was not a nurse in every school in Turkey. The schools downloaded empty injury forms from the National Education Directorate of Istanbul's web site and printed them. Right after the injury, the hard copies were filled in by the supervising teacher, school nurse or other teachers. At the end of the day, all forms were collected and handed in to the teacher who was responsible for computer issues. This teacher copied the forms to the online

form in the National Education Directorate of Istanbul's web site and to be send to the researcher. The online form was developed in such a way that all the entries had to be completed before they were sent to the researcher, in order to prevent any loss of information. The schools kept the hard copies of the student injury forms.

Data was analyzed by the percentage calculation method.

Results

During the research, 3302 school unintentional injuries were reported. The injuries were mostly seen among first, second and sixth grade students (Figure 1). The number of school injuries reached their peak in December, January and March (Figure 2). The number of boys involved in school injuries were twice the number of girls. Injuries' occurrence hits the bottom during 7.30-8.30a.m. and it goes up steadily after then, and it reaches its highest at 10.30-11.30a.m. (16%) and at 12.31-13.30p.m. (16%). The hourly injury rate starts to decrease after 14.30p.m. We have seen that injuries mostly occur during breaks (50%). The leading reasons for the school injuries were falling, hitting into something, and bumping into someone. The students seemed to get injured mostly while they were running, pushing and shoving, and playing basketball. The research show that the school unintentional injuries resulted mostly in swelling (17%), sensitivities (16%), abrasion (15%), bleedings (15%), cuts (10%), bruises (7%), fractures (5%), and sprain (5%). In addition, seven children (0.2%) had no breath (3 boy and 4 girl students) and one boy student had no pulse after the injury (Table 1). It was found out that the students got injured mostly on their heads and extremities. The school injuries mostly occurred on playgrounds (37.2%), classrooms (25.5%), corridors (14.2%), gymnasium (10.4%), sidewalks, and stairs (4.7%) (Table 2). Additionally, results show that 53.9% of the students who were involved in an injury went back to school while 24.5% were absent for less than half a day. Because of the injuries, the injured students have received first aid just after the injuries (24%). That was followed by their parents' notification (18%), checked by the school nurse (18.3%), returned to class (17.2%), and 15% of them have been sent to a medical institution.

Figure 1. Distribution of Injury by Grade (Istanbul, 2003-2004)

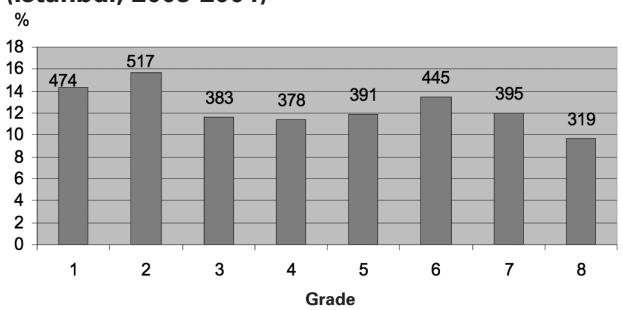
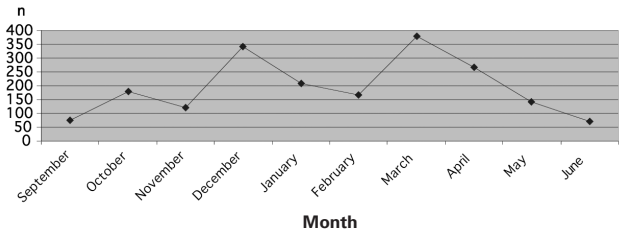


Figure 2. Distribution of Injury by Month (Istanbul, 2003-2004)



Discussion

Childhood injuries are a serious problem in our country as it is all over the world.

During the years of 2003-2004 when the research was carried out, 3302 school injuries were reported. In our country, there is no system which registers and analyzes the injuries and their results. There are only a few prospective studies in determining the epidemiology of the school injuries in Turkey. The research is the first study in Turkey in which the reports of the school injury forms were collected online from a significant number of schools over a period of one and a half years time.

There has been several limitations related to reporting of the injuries in this study. One of the reasons is that the school instructors do not pay sufficient attention to the subject, due to work overload or injuries that are considered as unimportant are not recorded although it is clarified in the survey form/questionnaire. This may lead to underestimation of the injury prevalence. Similarly, injuries could be reported in minor numbers by the managers in order to avoid "unsafe school image".

In the USA, in a study to determine the loss during the reporting of the injuries, it was stated that, in one school the proportion of the school injuries is 24% while it is 5.4% in a similar school. Such difference was seen because 3/4 of the injuries were not reported because they were considered as minor injuries.[16]

Table 1. Unintentional Injuries In Two Sexes By Reason, Type Of Activity And Nature of Injury (Istanbul, 2003-2004)

By Reason	Male		Female		*Total	
	n	%	n	%	n	%
Object / tool	120	5,0	70	6,0	190	5,0
Compression	82	3,0	65	5,0	147	4,0
Hit	254	10,0	78	7,0	332	9,0
Twisted	88	4,0	62	5,0	150	4,0
Fall	945	39,0	460	39,0	1405	39,0
Collision with person	387	16,0	161	14,0	548	15,0
Hit with thrown object	441	18,0	221	19,0	662	18,0
Others	137	6,0	71	5,0	208	5,0
Total	2454	100.0	1188	100.0	3642	100.0
Type Of Activity						
	Male		Female		*Total	
	n	%	n	%	n	%
Basketball	90	5,0	311	23,0	401	11,7
Football	132	7,0	22	2,0	154	4,5
Walking	122	6,0	105	8,0	227	6,6
Sliding	116	6,0	54	4,0	170	5,0
Gymnastics	96	5,0	87	6,0	183	5,3
Running	699	32,0	311	23,0	1010	29,5
Standing	44	2,0	56	4,0	100	2,9
Pushing and shoving	457	22,0	206	15,0	663	19,3
Others	321	15,0	200	15,0	521	15,2
Total	2077	100.0	1352	100.0	3429	100.0
Nature of Injury						
	Male		Female		*Total	
	n	%	n	%	n	%
Abrasion	435	14.2	237	15.9	672	14.8
Cut	351	11.5	125	8.4	476	10.5
Swelling	549	18.0	258	17.3	807	17.7
Fracture	159	5.2	48	3.2	207	4.6
Sprain	142	4.6	98	6.6	240	5.3
Bruise	230	7.5	107	7.2	337	7.4
Sensitivities	416	13.6	312	20.9	728	16.0
Puncture	145	4.7	55	3.7	200	4.4
Bleedings	488	16.0	183	12.3	671	14.8
No pulse	1	0.0	0	0.0	1	0.0
Not breathing	3	0.1	4	0.3	7	0.2
Others	138	4.5	65	4.4	203	4.5
Total	3057	100.0	1492	100.0	4549	100.0

* The totals are different because more than one item was marked on the student injury form.

Children are at high risk since they cannot sense danger beforehand. This risk is not very high for preschool children because they spend most of their time indoors. However, the case is just the opposite when they start primary school.[3,20]

Researches have proved that most of the injuries occur during the first and second year of the primary school (7-8 ages). Children at these ages do not have the ability and the experience to sense danger and take the right decisions to avoid dangers. It has been mentioned in the researches that children at 7-8 age group have poor vision field and sound localization, and these abilities improve as they grow up. It is known that cognitive and behavioral ability of this age group have not been fully developed, therefore they are at high risk.[14, 10,

Table 2. School Type and Injury Location (Istanbul, 2003-2004)

	Private		State		Total	
	n	%	n	%	n	%
Playground	818	39.1	410	33.9	1228	37.2
Classroom	611	29.2	230	19.0	841	25.5
Sidewalk/Stairs	97	4.6	59	4.88	156	4.7
School bus	40	1.9	85	7.03	125	3.8
Lunchroom	16	0.8	17	1.41	33	1.0
Corridor	333	15.9	136	11.2	469	14.2
Lab.	6	0.3	0	0.0	6	0.2
Gymnasium	92	4.4	252	20.8	344	10.4
Lavatory	38	1.8	7	0.58	45	1.4
Others	42	2.0	13	1.08	55	1.7
Total	2093	100.0	1209	100.0	3302	100.0

[17, 22] Injury rate peaks again at 6th grade (12-13 ages). The reason for this is that physical and psychological changes start during these years, and children are limited in adaptation to the pace of growing, body size, muscles and sudden growth.[13, 15, 17, 22]

According to Sillanpa et. al.[21], Gratz'[22], Scale et. al.[23] researches, the incidence of injuries are mostly seen among 2nd grade students, and it peaks again at 6th and 8th grades.

The research has shown that, of all the students who were involved in the injuries, 66.6% were boys and 33.3% were girls. Nearly in all studies it is stated that the injury rate of boys is 1.5-2 times higher than girls, and boys are more inclined to injuries. Moreover, it is also stated that boys' involvement in injuries is more serious. Hormone, tendency to take risk, being more active and displaying more aggressive behaviors than girls, and the harder floor that they play on, can be several of the factors that create the difference between boys and girls.[3,13,22,28,29,30,31,32,33,34,6,35]

In Figure 2, it can be seen that the monthly rate of injuries during the autumn term peaks in December and January, and it reaches the highest point in March, and starts falling down after April. Nigatu[36] states in his research that the monthly rate of school injuries are at its highest in spring (22%), and it is followed by winter (19%) and then the autumn (12%).

According to Sillanpa et. Al[22], and Lenaway[30] researches, the school injuries mostly occur in October and November, and the rate peaks in January, and it starts to fall down through the end of March. Some researchers have stated that results may vary from research to research because of the variables of the research such as injury month, day and hour. Countries or cities have different climates at different times of the year, and not all schools have the same environment.[16,22,23]

We have seen that injuries mostly occur during the breaks (50%). Forteenpointseven percent of the children are involved in an injury during the lunch break and 11.4% are involved in an injury during the class hours.

A lot of researches have proved that unintentional injuries mostly occur during the breaks.[25,27,37,38] It can be because when the bell rings, students go out of the classrooms where they are controlled and restricted, and arrive somewhere where they are free and uncontrolled.[32] On the contrary, Williams et. al.[15] stated that injuries mostly occur during class hours (90%) and lunch breaks. Nigate[36] proved that students mostly get involve in injuries during the lunch breaks.

Falling is the most common reason of the injuries (38.6%). It is followed by hitting into something with 18.2% and bumping into someone with 15%. This order is not different for boys and girls. Falling, whether on to the ground or from a particular height, is the most common reason of the injuries in unorganized games and organized sports such as athletics.[1, 2, 15, 28, 31, 33,35]. The finding of Gratz'[23], Kamel et. al.[28], and Gofin et. al.[25] studies in Israel support research findings that the most common causes of injuries are falling, bumping into someone, hitting into something.

The main reason of the injuries such as falling, hitting into something, bumping into someone occur because students have developed no sense of danger, and they are inexperienced. The children's curiosity to find out and discover, their aggressive behaviors, psychological discrepancy, emotional stress level, fatigue, and lack of personal protection are the other main factors that influence the occurrence of the injuries.[27]

The result of this study suggests that the most severely affected area is the head (48.1%), and then the extremities (48.0%), and then the trunks (3.9%) (Figure 4). The research findings are consistent with Lenaway's[25] about the area affected for each injury. In Gratz's[23], Scale et. al[24], and Laflamme at all[29] studies, it is stated that the mostly affected areas are head, extremities, and trunk respectively. This order in their findings is similar to ours. However, in some other studies it has been found out that the mostly affected areas are extremities, head, and trunk.[13,22,

[25,26,30,31,35,36,37] A possible explanation of why the most severely affected area is seen as extremities in the study can be that, the person who falls uses their extremities such as hands, arms, and legs consciously or unconsciously to protect their vital organs.

The study showed that 18% of the injuries are swellings, and 16% are sensitivities. The other types of the injuries are abrasion (15%), bleedings (15%), cuts (10.5%), bruises (7%), fracture (5%), and sprains (5%). In addition, seven children (0.2%) had no breath (3 boy and 4 girl students) and one boy student had no pulse after the injury.

Boyce[27] and Sheps and Evans[38] stated that although the primary school students mostly get involved in minor injuries, some other serious injuries can also be seen. These findings are consistent with research findings. Kamel et. al[28], unlike the other studies, found that the most common types of injuries are loss of consciousness (51%) and broken bones (23%). Schelp et. Al[37]. states that fracture, wound and sprain are relatively the most frequent type of injuries. Laflamme et. al[39] found out that the most common type of injury among boys are fracture and dislocations while it is strain, bruise and sensitivity among girls.

There are a variety of potential risks for students at school. The students mostly were injured on the playground, gymnasium, and athletic field.[27,29,31,39] The research findings suggested that injuries mostly occured on playgrounds (37.2%), classrooms (25.5%), corridors (14.2%), gymnasium (10.4%), sidewalks, and stairs (4.7%). In the comparison of the school type and injury location, it was found out that in private schools, more injuries occurred while the students were getting on and off the school bus, in gymnasiums, and lunchrooms. The reason for such a difference can be that there is not a gymnasium in every state school, and most private school students prefer to travel by school buses. A lot of researches have shown that playground is on the top of the injury location list, and gymnasium has the second place, and they are followed by classrooms, corridors, and stairs. These findings support research results.[13,17,20,24,25,26,27,29]

When the students participate in activities they grow up but they also take risks. Most of the students get injured during these activities.[16,40]. We found out that the students got mostly injured when they are running (29%). They are also involved in an injury while they are pushing and shoving (19%), or playing basketball (12%). When the sex and the activity during which injury occurred are compared, it is found out that boys are mostly injured while they are playing football.

The researchers stated that most of the injuries occur during the physical education courses or interschool sports competitions.[16,22,30,31] Hammarstrom et. al[41] state that girls are mostly injured while they are playing basketball or volleyball while boys are injured while they are playing football, which is identical with the research results. According to Chen et al. sports were the most common activities associated with the injuries[35].

The research showed that primary school students mostly got involved in an injury during unorganized activities such as running (29.5%), and pushing and shoving (19.3%), which is consisted with Gratz's, Laffamme's and Menckel's (17.23%).

Results show that 53.9% of the students who were involved in an injury went back to school, while 24.5% were absent for less than half a day. Nigatu's study[36] showed that 84.3% of the students did not stay away from school. Similarly, a study by UTAH Health Department[34] stated that 82% of the students were able to go back to school. This may mean that the injuries did not result in a very serious health outcome. Research showed first aid given by the school nurse, was sufficient (18.3%). So, it can be concluded from this that, if we have an adequate number of nurses at schools, there will be less absenteeism caused by injuries.

In the study, it was seen that the most common action taken after the injury is giving first aid (24.1%). The next is notifying the parents (17.8%) and it is followed by being checked by the nurse (18.3%), returning back to the class (17.2%) and sending to emergency 7.5% to the hospital, 4.9% to the health centre, and 2.6% to private clinics (Figure 5).

The results that we obtained from the private schools showed that 73% of the students were checked by the school nurse after the injuries, and 42.5% were given the first aid. The rate of being checked by the school nurse is very low at state schools because there are not enough nurses there. Sillanpaa et. al[22] found out in their study that 84% of the students were given first aid by the school nurse, while 13% were examined by the school doctor. Three percent of the students were sent to hospitals. In state schools, the rate of sending home (81.2%) is remarkably higher that it is in private schools

(18.8%). Moreover, the rate of sending the student back to the classroom in private schools (61.9%) is pretty higher than it is in state schools (38.1%) which means sending to the emergency is lower.

These results have proved that when there is a nurse in each school there will be less absenteeism, restricted activities and being sent to hospitals. Another result of the study is that, in state schools 71.7% of the student's parents were notified while 28.3% of the student's parents were notified in private schools. The rate is higher in state schools because the first aid is given by the teachers and they cannot decide how serious the injury is and sent them to the hospital. This result is consistent with the result that 71.4% of the state school students were sent to hospitals, whereas 28.6% of the private school students were sent to the hospital.

In conclusion, learning about the epidemiology of injuries makes it easier to take precautions. Such epidemiologic studies are important to have a local vision of injuries and to improve injuries prevention programs.

Preventing injuries require multisectoral approach and structuring safe interactions among the people, objects and environment of school.[17,42]

The public health approach to injury prevention steps

* The first step is to determine the magnitude, scope, and characteristics of the problem
  (i.e. it is necessary to look at when, where, what and how the injury happened).
* The second step is to identify the factors that increase the risk of injury or disability
  and to determine which factors are potentially modifiable (i.e. understand how and why injuries happen).
* The third step is to assess what measures can be taken to prevent the problem, by using the information acquired in step 2, to design pilot-tests and evaluate interventions.
* The final step is to implement the most promising interventions on a broad scale[42,43]

Nurses should focus on three main targets while performing the injury prevention programs; environmental change, behavioral change and to inspect and to form politics. To reach these targets, health education, security education and providing the guidance service for the students' development periods are recommended.[1,17]

References

1. Vosskuhler M.: Bringing the ends together: Learning, unintentional injury & Violence prevention, productivity and academic performance. Occupational Safety and Health Council, 12th International Safe Communities Meeting, Hong Kong 18-20 March 2003.
2. Children's Safety Network National Injury and Violence Prevention Resource School Safety, Center Education Development Center, 2001
3. Schnitzer, P. G. Prevention of Unintentional Childhood Injuries, Am Fam Physician 2006;74:1864-9
4. Danseco ER, Miller TR, Spicer RS. Incidence and costs of 1987-1994 childhood injuries: demographic break downs. Pediatrics 2000;105(2).
5. Rivara, F.P., Calonge, N., and Thompson, R.S., "Population-Based Study of Unintentional Injury Incidence and Impact During Childhood," AJPH 79(8):990-994, 1989
6. Limbos MA, Peek-Asa C. Comparing unintentional and intentional injuries in a school setting. J Sch Health. 2003 Mar;73(3):101-6.
7. Benson V., and Marano, M.A., Current Estimates from the National Health Interview Survey, 1992, National Center for Health Statistics, Vital Health Stat 10 (189), 1994.
8. U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. 2 vols. Washington, DC: U.S. Government Printing Office, 2000
9. CDC, National Center for Injury Prevention and Control, Office of Statistics and Programming. Web-based Injury Statistics Query and Reporting System (WISQARS). Online at http://www.cdc.gov/ncipc/wisqars/. Accessed June 8, 2006.
10. World Health Organization: The Injury Chartbook, 2002
11. Dirican R., Bilgen N.: Kazalar ve Onemi, Halk Sagligi II. Baski, Uludag Universitesi Yayini, 1993; 481-491.
12. World Health Organization: Psychosocial factors related to accident in childhood and adolescence; Report on a WHO Technical Group, WHO regional office for Europe, Copenhagen, 1981.
13. Junkins E.P., Knight S., Lightfoot A. C., Cazier C.F.: Epidemiology of school injury in Utah: A Population-Based Study. J Sch Health, 1999; 69(10): 409-413.
14. Laflamme L. Svanström L. Schelp L.: Safety Promotion Research. Karolinska Institute Department of Public Health Sciences. Division of Social Medicine. ISBN 91-630-7856-2, Sweden, 2000.
15. Risk to Student in School, U.S. Congress, Office of Technology Assessment, OTA-ENV-633.Washington, Government Printing Office, September 1995.
16. Williams W.R., Latif A.H.A., Sibert J.: Secondary school accident reporting in one education authority. School of Care Sciences, University of Glamorgon, Pontypridd, 2001.

17. Posner M.: Preventing School Injuries. A Comprehensive Guide for School Administrators, Teacher, and Staff. Rutgers University Press. New Brunswick, New Jersey, and London.2000
18. Cantez T., Omeroglu R.E., Baysal S.U., Oguz F.: Cocuk Sagligi ve Hastaliklari. Ed: Baysal S.U., Sosyal Pediatri, Nobel Tip Kitapevi, Istanbul, 2003; 58-66.
19. Cowan M., Children's Health. Ed: Stanhope M., Lancaster J., Community Health Nursing., Fourth Edition: 1995; 521-544.
20. Laflamme L., Petersson E.E.: Brief communications and research notes. school injury patterns: a tool for safety planning at the school and community levels. Accid. Anal.and Prev., 1998; 30(2):277-283.
21. Children's Safety Network National Injury and Violence Prevention Resource School Safety, Center Education Development Center, 2001.
22. Sillanpaa M., Terho P., Westeren H., Pısırıcı H.: Accident in schoolchildren: epidemiologic, etiologic and prognostic considerations. Acta Paediatr Hung, 1983;24(2):119-130.
23. Gratz R.R.: School Injury: What We Know, What We Need. J. Pediatr Health Care, 1992; 6: 256-262.
24. Scala C., Gallagher S.S, Schneps S.E.: Cause and outcomes of pediatric injury occurring at school. J Sch Health 1997; 67(9): 384-389.
25. Gofin R., Donchin M., Schulrof B.: Motor ability: protective or risk for school injuries. Accident Analysis and Prevention, Israel, 2002; 36: 43-48.
26. Gore G.C., Mangdalonos H., Pless I. B.: School injuries and preventive policies and programs. CJ PH, 2004.; 95 (6): 424-428.
27. Boyce T. W., Sprunger L. W. Sobolewski S., Schaefer C.: Epidemiology of injuries in a Large, Urban School District. Pediatrics, 1984; vol.74, No. 3.
28. Kamel M.I., Kamel N.M., Khashab F.S., Aziz N.A.: Epidemiological and risk predictors of school injures. East Mediterr Health J. 1999; 5 (4): 676-683.
29. Laflamme L. Menckel E.: Injury in Swedish schools during recesses: distribution and patterns, Safety science, 1999; 33:.89-101.
30. Lenaway D.D.et al.: The Epidemiology of school related injuries: New perspectives. AJPM. 1992; 8(3): 193-198.
31. Laflamme L. Menckel E.: Injury to boys and girls in Swedish schools: different activities, different results? Scand J. Public Health. 2000; 28:132-136.
32. Stark C., Wringht J., Lee J., Watt L.: Two years of school injuries in a Scottish education sub-division., Public Health, 1996; 110: 229-235.
33. School Health Guidelines to Prevent Unintentional Injuries and Violence, Center for Disease Control. Morbidity and Mortality Weekly Report (MMWR): U.S. Department Of Health And Human Services, Vol. 50 / No. RR-22, Atlanta, 2001.
34. UTAH Health Status Update: School Injuries in Utah. Utah Department of Health, June, 1999.
35. Chen G, Smith GA, Deng S, Hostetler SG, Xiang H. Nonfatal injuries among middle-school and high-school students in Guangxi, China. : Am J Public Health. 2005 Nov;95(11):1989-95. Epub 2005 Sep 29
36. Nigatu E.B.: Okul Cocuklarında Kazalarin Epidemiyolojik Arastirmasi, Istanbul Universitesi, Saglik Bilimleri Yuksek Lisans Tezi. 1997
37. Schelp L., Ekman R., Fahl I.: School accident during a three school- years period in a Swedish municipality. Public Health, 1991; 105, pp: 113-120.
38. Sheps S.B., Evans G.: Epidemiology of school injuries: A 2- year experience in municipal health department. Pediatrics, 1987; 79(1):69-75.
39. Laflamme L. Menckel E., Aldenberg E.: School- injury determinants and characteristics: developing an investigation instrument from a literature review. Accid. Anal. And Prev., 1998; 30 (4): 481-495.
40. Injuries in the School Environment. A Resource Guide, Children's Safety Network National Injury and Violence Prevention Resource Center Education Development Center, 1997.
41. Hammarström A., Janlert U. Epidemiology of school injury in the Northern Part of Sweden. Scand J. Soc. Med., Sweden, 1994; 22 (2).:120-126.
42. Preboth M.Preventing unintentional injuries and death in schools. Am Fam Physician Kansas City, 2002; 65(10):2167-2168.
43. Sethi D, Habibula S, McGee K, Peden M, Bennett S,Hyder AA, Klevens J, Odero W, Suriyawongpaisal P.; Guidelines For Conducting Community Surveys On Injuries And Violence, World Health Organization Geneva 2004.

Knowledge and perceptions of young adolescents' about pubertal changes

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Abstract

Objectives: Rapid psychosocial, physical and emotional changes observed during puberty are not always easy for adolescents, their families or their doctors to respond. The aim of this study is to explore adolescents' knowledge and beliefs about the physical changes during puberty.

Material and Methods: Nine statements about the most generalized definitions related to puberty found in literature, are included in this descriptive study. Three of them were mainly focused on physiological changes, and the others on perceptions and myths. A 0-9 point scale was used to assess the total number of correct answers. A total of 374 students in two (public and private) schools in Kadikoy, Istanbul responded to the statements.

Results: The mean age of the study population was 11.38 years and 47.3% was female. Female adolescents' knowledge about the physical changes during puberty were found to be more than male adolescents', whereas the truth in the statement, "Growth of breasts signals the onset of adolescence in girls" is known better by males. Five of the 9 statements were answered correctly by at least 75% of the study population. When we allocated 1 point to each correct answer of nine statements, we had a scale from 0-9 points to evaluate the total score of the given correct answers to the statements. The study group's overall level of the knowledge in terms of mean value and standart deviaton was 5.88±1.27 points. Considering the age groups, the only statistically significant difference was observed between 11 and 12 years (p=0.009) regarding the total correct answer score.

Discussion: It seemed beneficial to start education programs at 10-11 years of age with a focus on the physiological changes. Our results might be reference points for the curriculum design of sex-education programs.

Key Words: puberty, adolescence, perceptions and beliefs, knowledge, sexual development

Introduction

Puberty is a corridor from childhood to adulthood, which is in twilight. The rapid psychosocial, physical and emotional changes observed during this period are not always easy to respond to, not only for adolescents and their families, but also for their family doctors. Adolescents' sensitivity towards the changes in their own body, reluctance of the families to transfer their knowledge and experiences to their children, and false information and beliefs existing among the population, implicate the need for a severe consultation[1]. Ryan et al. surveyed 159 early adolescent (mean age: 12.1 years) students and the main question of this survey was, "What adolescents want to know about puberty"[2]. They found that biological questions concerning puberty predominated over psychosocial topics, and that the gender, race or ethnicity, and stage of development, determined the kind of questions that early adolescents have about puberty. It is clear that physical and sexual development during adolescence has individual differences and other factors than the wide range of age, ethnicity, nutrition, body fat distribution, genetic, and socioeconomical factors, affect the changes during this period[3]. With the dominant theme in early adolescence being the biological process of pubertal change, comprehensive sexual health education

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programs have the potential to positively influence an adolescent's experience, during both the physical and psychological development, characterizing this age period[2].

While the children move through adolescence, families and school professionals look for help to instruct and counsel them. Educational programs will be more successful if adolescents are involved in the planning of the content. Major medical organizations recommend calls upon primary care physicians, to provide comprehensive sexual risk reduction counseling to adolescents. However, it has been reported that physicians have many concerns and barriers regarding adolescent sexual counseling[1].

Myths about puberty are common. These misconceptions create needless anxiety in parents[4]. If precise data were available regarding the pubertal concerns, knowledge and perception of the adolescents, it would be easy to prepare adolescent sexual health education tools that optimize the achievement of their goals. Because it was believed that patient educational tools that provided patient-specific risk information to the physician would serve as powerful prompts[1].

This study was designed to explore to what extent adolescents know about the physical changes stimulated by hormonal changes occurring during puberty, what are their prejudices and beliefs about these physical changes, and how much gender, age and educational-level of parents affect their level of knowledge, prejudices and beliefs.

Material and methods

The study design is descriptive. After a literature search, 9 descriptive decision statements were selected from among "the most generalized definitions related to puberty" found in articles[4,5,6,7,8] (Table 1). Three of these statements were mainly focused on physiological changes (stages of sexual development), so they are accepted as questions related to knowledge (S5, S6 and S8), whereas 6 of them were more focused on perceptions and myths (S1, S2, S3, S4, S7, S9). A survey was prepared including these statements and also socio-demographic variables.

As a prerequisite, the research protocol was evaluated by the Local Directorate of Education under the governorship of Istanbul and it was approved ethically.

A total of 374 students, in class 6 (age 10-11), 7 (age 11-12) and 8 (age 12-13) in two primary schools on the Anatolian side of Istanbul, were asked to answer the survey. Of the 374 initial subjects, 349 generated a total of 9 statements. From this 349, 13 subjects did not specify their gender, but answered all the statements. For this reason gender based analysis were performed on a total of 336 students. Subjects ranged in age from 10 to 13 years, with the mean age of 11.38±0.84 years. A total of 47% of the subjects (age range 11-13) were from a private school and 53% of the subjects (age range 10-12 except 0.5% 13 year olds) were from a public school. Female students were 47.3% (n=159) of the study population. Students were surveyed under supervision of researchers and schoolteachers. Informed consents were given by the school directors after learning about the aims and methodology of the research. There were neither sex-education classes or courses nor health education classes in these two schools.

In each school surveys took place at the same time in all classes and applied to all students present in the classes. Participants were told that they

Table 1. Descriptive Decision Statements of the Survey (Istanbul, 2004)

No	Statement	Assessment
S1	Adolescence is a period of time in which childhood ends and transition to adulthood begins.[7]	True
S2	The changes that happen to our body hormones affect this period.[5]	True
S3	Puberty begins at the same age for every child.[4,8]	False
S4	It is an indication of a health problem if, during the period of adolescence, a child remains shorter then his peers.[6]	False
S5	Appearance of pubic hair is an indication that adolescence has begun.[6]	False
S6	Growth of breast signals the onset of adolescence of girls.[6]	True
S7	The beginning age of adolescence of girls has gone back to younger ages than it was in the past.[6]	True
S8	Menstruation signals the end of adolescence in girls.[6]	False
S9	It is risky for a young person to use hormonal drugs to solve his problems during pubertal development, even if recommended by a doctor.[4]	False

would not be asked to mention any private data, and would be asked to mark these items as true or false. An emphasis on "senses" more than knowledge was made. Surveys that were not completely filled were excluded from the final analyses. Written notes, such as, "I do not know" or "I am not sure" were accepted wrong as they were not sure about the correct answers.

All data were analysed using statistical package SPSS for Windows, release 11.0. Comparisons of categorical variables were analysed by chi-square test and for interval variables t test w used. All statistical analyses at the $p<0.05$ level were accepted as significant. When the two schools were compared, only 11 and 12 year-old subjects were included in the analyses, since they were the only common age groups in both of the schools.

Results

Of 374 initial subjects, 349 generated a total of 9 statements. Thirteen subjects did not specify their gender, but answered all the statements. They were included in the analysis except the subgroup analysis for gender. Information on age (years), gender and parents' educational status can be found in Table 2.

Among the whole study population, the highest percentage of correct answers were given for the first three statements (94%, 88% and 86% for S1, S3 and S2 respectively) (Table 3). S5, S9 and S7 were the statements known less by the adolescents (24%, 30% and 35% respectively). According to the given answers, there were statistically significant differences between girls and boys for statements S3, S6 and S8. Among girls there were more correct

Table 2. Socio-demographical Properties of Study Population (Istanbul, 2004)

	Total (n=349)	Private school (n=164)	Public school (n=185)
Sex (%)(male)	52.7	50.0	55.0
(female)	47.3	50.0	45.0
Age (year) (Mean(SD)	11.38±0.84	11.85 ±0.70	10.97±0.74
Age subgroups (%)			
10 yrs (only from public school)	14.9	0.0	28.1
11 yrs	40.4	32.9	47.0
12 yrs	35.8	48.8	24.4
13 yrs (only from private school)	8.9	18.3	0.5
Maternal education (%) (high school + university)	56.4	74.5	17.8
Paternal education (%) (high school + university)	65.9	80.0	35.7

Table 3. Percentage of the Correct Answers and Their Distribution According to Gender (Istanbul, 2004)

Statements	CORRECT						INCORRECT						p value
	Boys		Girls		Total		Boys		Girls		Total		
	n	%	n	%	n	%	n	%	n	%	n	%	
S1	164	92.7	151	95.0	315	93.7	13	7.3	8	5.0	21	6.3	>0.05
S2	148	83.6	141	88.7	289	86.1	29	16.4	18	11.3	47	13.9	>0.05
S3	148	83.6	148	93.1	296	88.1	29	16.4	11	6.9	40	11.9	**0.007**
S4	122	68.9	119	74.8	241	71.7	55	31.1	40	25.2	95	28.3	>0.05
S5	40	22.6	41	25.8	81	24.1	137	77.4	118	74.2	255	75.9	>0.05
S6	152	85.9	106	66.7	258	76.8	25	14.1	53	33.3	78	23.2	**0.000**
S7	64	36.2	55	34.6	119	34.7	113	63.8	104	65.4	217	65.3	>0.05
S8	107	60.5	127	79.9	234	69.6	70	39.5	32	20.1	102	30.4	**0.000**
S9	60	33.9	41	25.8	101	30.1	117	66.1	118	74.2	235	69.9	>0.05

Total number of subjects who specified their gender is 336 (boys = 177, girls = 159).

answers for S3 and S8 compared to boys (p<0.05), whereas boys answered S6 correctly with a higher percentage than girls (p<0.05).

When age differences were taken into consideration, the answers given to two statements (S4 and S8) were statistically significant among age groups (p<0.05). For both of these statements, the percentage of correct answers was higher as the age got older. As far as 11 and 12 year-old adolescents were concerned, significant differences between the given answers were detected for the statements S3, S4 and S8 (p values 0.034, 0.005, 0.004 respectively). Among the 11 and 12 year-old subgroup, there were significant differences for S3, S6 and S8 between girls and boys (p<0.05- S6 on behalf of boys and S3, S8 on behalf of girls). When the same age group was analyzed for schools separately, girls knew S8 better than boys. In public school 81.5% of the girls answered S8 correctly (p=0.004), whereas in private school 79.0% of the girls answered the same statement correctly (p= 0.042). There was no gender difference in both schools for the answers of S3.

The most well-known statements were S1, S2 and S3 in the private school and the public school.

Table 4 presents the percentage of correct answers according to type of school (only 11 and 12 years old students, n=266). S5, S9 and S7 were the statements known less by the adolescents. The least known statements were S5 in the private and S7 in the public schools.

When we allocate 1 point to each correct answer of nine statements, we have a scale from 0-9 points to evaluate the total score of the given correct answers to the statements. The study group's overall level of the knowledge in terms of mean value and standart deviaton was 5.88±1.27 points.

Table 4. Percentage of the Correct and Incorrect Answers According to Schools Among 11-12 years old students (n=266) (Istanbul, 2004)

		Private School		Public School		p value
		n	%	n	%	
Q1	Correct	129	96.3	121	91.7	>0.05
	Incorrect	5	3.7	11	8.3	
Q2	Correct	122	91.0	110	83.3	>0.05
	Incorrect	12	9.0	22	16.7	
Q3	Correct	122	91.0	108	81.8	**0.028**
	Incorrect	12	9.0	24	18.2	
Q4	Correct	106	79.1	87	65.9	**0.016**
	Incorrect	28	20.9	45	34.1	
Q5	Correct	20	14.9	44	33.3	**0.000**
	Incorrect	114	85.1	88	66.7	
Q6	Correct	98	73.1	106	80.3	>0.05
	Incorrect	36	26.9	26	19.7	
Q7	Correct	57	42.5	34	25.8	**0.004**
	Incorrect	77	57.5	98	74.2	
Q8	Correct	93	69.4	90	68.2	>0.05
	Incorrect	41	30.6	42	31.8	
Q9	Correct	28	20.9	46	34.8	**0.011**
	Incorrect	106	79.1	86	65.2	
Total		134	100	132	100	

There were statistically significant differences for total correct answer score between 10-11 (p=0.044) and 11-12 years (p=0.009). As there was no data for 10 years in the private school, this significant difference between ages 10-11 was thought to be influenced by the 11 year-old subjects (Table 5).

There were no stastistically significant difference among the parental and maternal education groups for total level of knowledge determined by mean correct answer score (p>0.05).

Table 5. Mean Score Differences between the Study Subgroups (Istanbul, 2004)

Class	Groups	All Population			Private School			Public School		
		Mean ± SD	t	p	Mean ± SD	t	p	Mean ± SD	t	p
6	10 yrs	5.48±1.33	**0.211**	**0.044**	No data for 10 yrs			5.48±1.33	0.950	>0.05
	11 yrs	5.52±1.26						5.68±1.20		
7	11 yrs	5,52 ±1.26	**2.627**	**0.009**	**5.25±1.33**	**4.248**	**0.000**	5.68±1.20	0.456	>0.05
	12 yrs	5,93 ±1.28			**6.13±1.05**			5.57±1.25		
8	12 yrs	5.93±1.28	0.702	>0.05	6.13±1.05	0.967	>0.05	limited data for 13 years		
	13 yrs	6.38±1.22			6.36±1.24					
	Male	5.67 ±1.39	1.165	>0.05	5.98±1.23	0.649	>0.05	**5.42±1.47**	**2.02**	**0.044**
	Female	5.84 ±1.17			5.86±1.21			**5.82±1.13**		

Discussion

As talking about puberty is a particularly sensitive issue, and has special difficulties depending on cultural differences, a limited number of statements were included in this survey. However, our findings yield to a number of conclusions. Primarily, female adolescents' knowledge about the physical changes stimulated by hormonal changes occurring during puberty was found to be more than the male adolescents'. But the statement, "breast development signals the onset of adolescence in girls" (S6) was known better by males. It was also reported that the impact of pubertal maturation on self-image was qualitatively very different between the two sexes[9] and adolescent males had a more positive self-concept related to physical appearance than did the females[10]. However, in a Brazilian study[11] the level of knowledge about adolescence, puberty and sexuality of females was found to be more unsatisfactory. A Nigerian study which supported female unawareness, showed that in a group of secondary school girls 84% were not prepared for their first menses[12]. Ryan SA et al, found out that early female adolescents wanted to learn more about the opposite gender and sexual dimorphism, and asked more questions about puberty than males.[2]. Socio-cultural factors may be responsible for this difference in knowledge or in motivation to learn. In another study made by Vicdan K et al in Ankara-Turkey with girls between 13-18 years of age, 88.8% of the participants wanted to have sex-education at school[13]. Combining these findings with ours, we may suggest two possible explanations of gender difference with respect to knowledge: 1) girls are more curious about puberty and their willingness to learn makes the learning process easier 2) since pubertal development is more likely to be in advanced stages in females compared to their male peers, this could be considered as a study sample effect. On the other hand, breast development is the major change of puberty for girls that could be easily observed by boys, whereas for girls breast development could be just one of the many changes occurring during puberty and could be ignored more easily. In a study conducted on early adolescents puberty was defined as an emotional, body and social experience. Most of the students told that their primary source of knowledge were their peers at school[14].

According to our results, the most well known statements are S1, S2 and S3. It is important to realize that the statement "puberty does not begin at the same age for all children" is known very well by early adolescents. Although they are certain about the different pubertal timing for everyone, prior research indicates that adolescents' satisfaction with body image and physical self is still related to pubertal timing in peers. This may be accepted as knowledge which is not yet sufficient to change the adolescents' behavior[10,15]. Education methods which facilitate behavioral change may be used to transfer the knowledge that normal puberty has many benign variants. The anxiety of children and parents can be relieved by recognizing this, and unnecessary referrals may be avoided[4].

One of the least known questions was S5; "appearance of pubic hair is an indication that adolescence has begun". Self-assessment of pubic hair distribution was shown to imply a good agreement with the doctors' examination depending on the Tanner stages, to determine the pubertal status[16]. Adolescents may be informed about pubic hair distribution and its relation to pubertal development to improve their self reports. Although, boys were known to under-rate their pubic hair development[8] more emphasis on boys' education would be necessary. Finally, five of the 9 statements were answered correctly by at least 75% of the study population. This showed a strong possibility that our study population will benefit from sexual education. It has been shown that sexuality education programs affect positively the overall sexual knowledge[17]. As a facilitating method, boys' interest in girls' puberty (boys had more correct answers related to S6 and S7) may be used to educate them effectively, on basic sexual issues. In a study by Campbell and Campbell[18], younger students (7th graders) showed more interest in understanding how their bodies are constructed and function. These findings are not surprising when one considers that physical maturation, which highly incorporates visible changes, occurs primarily in early adolescence. Taking into account these results, it seems necessary to start education programs with the physiology of counter-sex and then respective-sex, to have their interest and to educate adolescents about sexuality immediately, as they will be the knowledge sources for peers. Training about social skills and decision making about sexuality and reproduction may be more appropriate after more basic information has been provided[19]. Education may also allow adolescents to follow their own

sexual maturation and reduce problem behavior in early adolescence[20]. Ten-11 years of age seemed to be beneficial for Turkish children to start sexual education regarding the significant difference between these age groups, and a piece of Turkish research that reported onset of puberty as 11.6±0.15 years[21].

Not assessing pubertal maturation could be considered as a limitation of this study. Besides some studies showing that adolescents generally tended to underestimate their stage of pubertal development[16,22], it was also reported that there is a tendency among adolescents to overestimate their pubertal development at early stages of maturation and underestimate development at later stages[23]. We were unable to determine the effect of pubertal maturation on adolescents' knowledge and perceptions relating to puberty. Besides in our study we could not find any effect of parental education on adolescents' level of knowledge on puberty. A possible explanation of this finding could be a small sample size of the study or accumulation of parents in the group of primary school graduates (71.5% of mothers, 55% of fathers).

Further studies are needed to provide basic information about pubertal knowledge and perceptions, expectations and attitudes concerning physiological areas and psychosocial topics regarding age, gender, ethnicity and socio-economical differences. Topbas M et al conducted a survey on high school students, about physical changes in adolescent period and they concluded that the problems arising in the adolescence period might be solved by encouraging the young people to learn more about their body changes that would occur[24]. Studies to identify early adolescents' anxiety and experience about puberty and pubertal changes may provide data to understand the behavioral aspect of this life stage. The results of this study and further ones about puberty and adolescent sexuality will be the reference points for the curriculum design of sexual education programs.

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References

1. Boekeloo BO, Schamusa LA, O'Connor KS. The effect of patient-education tools on physicians' discussions with young adolescents about sex. Acad Med 1998; 73 Suppl 10:84-7.
2. Ryan SA, Millstein SG, Irwin CE Jr. Puberty questions asked by early adolescents: what do they want to know? J Adolesc Health 1996;19(2):145-52.
3. Shore WB, Braveman PAI, Mellin L. Health maintenance for adolescents. In: Taylor RB, editor. Family Medicine, 5th ed. New York: Springer-Verlag; 1998.p.162-9.
4. Sadovsky R. Common myths about pubertal development. Am Fam Phys 2000;62:1406-10.
5. Sizonenko PC. Preadolescent and adolescent endocrinology: physiology and physiopathology II: Hormonal changes during abnormal pubertal development. Am J Dis Child 1978;132(8):797-805.
6. Nakamoto JM. Myths and variations in normal pubertal development. West J Med 2000;172:183.
7. Cotton NC. Normal Adolescence. In: Sadock J. B, Sadock V, editors. Comprehensive Textbook of Psychiatry, 7th Ed. Philadelphia: Lippincott Williams & Wilkins; 2000.p.2550-7.
8. Berg-Kelly K, Erdes L. Sexual maturity by mid-adolescents based on a global question. Acta Paediatr 1997;86:10-7.
9. Bariaud F, Rodriguez-Tome H, Cohen-Zardi MF et al. Effects of puberty on self-concepts of adolescents. Arch Pediatr 1999:6(9):952-7.
10. O'Dea JA, Abraham S. Association between self-concept and body weight, gender, and pubertal development among male and female adolescents. Adolescence 1999:34(133); 69-79.
11. Gomes W de A, Costa MC, Sobrinho CL et al. Adolescents' knowledge about adolescence, puberty and sexuality. J Pediatr (Rio J) 2002;78(4):301-8.
12. Abioye-Kuteyi EA. Menstrual knowledge and practices amongst secondary school girls in Ile Ife, Nigeria. J R Soc Health. 2000;120(1):23-6.
13. Vicdan K, Kukner S, Dabakoglu T et al. Demographic and epidemiologic features of female adolescents in Turkey. J Adolesc Health 1996;18(1):54-8.
14. Altiparmak S, Karadeniz G, Teksar T et al. The review of teenagers to the teenage. Saglik ve Toplum 2005;15(3):76-81.
15. Siegel JM, Yancey AK, Aneshensel CS et al. Body image perceived pubertal timing and adolescent mental health. J Adolesc Health 1999;25:155-65.
16. Taylor SJ, Whincup PH, Hindmarsh PC et al. Performance of a new pubertal self-assessment questionnaire: a preliminary study. Paediatr Perinat Epidemiol 2001;15(1):88-94.
17. Song EY, Pruitt BE, McNamara J et al. A meta-analysis examining effects of school sexuality education

programs on adolescents' sexual knowledge. J School Health. 2000;70(10):413-6.

18. Campbell TA, Campbell DE. Adolescent interest in human sexuality: the questions kids ask. J Sex Educ Ther. 1986:12(2);47-50.
19. Roth B. Fertility awareness as a component of sexuality education. Nurse Prac. 1993;18:40-54.
20. Laitinen-Keispijn S, Vander Enee J, Hazebroek-Kampschreur AA et al. Pubertal maturation and the development of behavioral and emotional problems in early adolescence. Acta Psychiatr Scand 1999;99(1):16-25.
21. Yenioglu H, Güvenc H, Aygun AD et al. Pubertal development of Turkish boys in Elazig, Eastern Turkey. Ann Hum Biol 1995;22(4):337-40.
22. Wu Y, Schreiber GB, Klementowicz V et al. Racial differences in accuracy of self assessment of sexual maturation among young black and white girls. J Adolesc Health 2001;28(3):197-203.
23. Schlossberger NM, Turner RA, Irwin CE Jr. Validity of self-report of pubertal maturation in early adolescents. J Adolesc Health 1992;13(2):109-13.
24. Topbas M, Can MA, C, et al. Knowledge level of students in some high schools in Trabzon about physical changes in adolescent period and the male-female genital systems anatomy. Saglik ve Toplum 2005;15(1):101-105.

Prevalence of Smoking in Secondary Schools and Associated Factors in Mersin, Turkey: A School-Based Cross-Sectional Study

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Abstract

This study aims to present the prevalence of smoking among adolescents attending secondary schools in Mersin city center and associated factors.

This school-based, cross-sectional study was performed in 2002. Eighteen schools were included in the study after multi-stage stratified cluster sampling method (12 junior high schools and 6 senior high schools). A total of 4143 students underwent evaluation. Possible risk factors leading to increased rate of smoking were analyzed with Binary Logistic Regression.

Of the students, 9.8% were regular smokers and 25.5% had experienced smoking at least once previously. The smoking rate was increased with grade (chi-square for trend p=0.001). Alcohol abuse, substance addiction, domestic punishments within the household, parental problems, man sex, older age, were found to be associated with increased rate of smoking among students attending junior high schools. On the other hand, for those attending senior high schools, alcohol abuse, parental problems, older age, being subject to humiliation at school, absenteeism, and higher CBDI scores were found as possible risk associated factors.

As a result, the secondary school period is important since smoking addiction starts at these ages. Smoking rates increase with school grade. Our children should be taught about the harms of smoking in their pre-school ages.

Key words: schoolchildren; smoking; risk factors; risk behaviors

Introduction

It is the number one cause of all early and preventable deaths. Three out of four smoking triers become an addict.[1] In the world; one out of every ten deaths is due to smoking. If the tobacco epidemic continues to rise, it is estimated that by the year 2030, 1.6 billion people (90% of which were from developing countries) will be smoking and yearly deaths due to smoking will raise from 4.9 million to 10 million. Chronic illnesses and early deaths due to cigarette smoking decrease the life expectancy by 20-25 years.[2,3]

According to the Global Youth Tobacco Survey (GYTS), in the results from 2004-2005, of adolescents aged 13-15 years, 23.1% have already been acquainted with cigarettes before the age of 10, 26.1% have tried smoking, and 9.8% smoke regularly.[4] According to the 2003 Turkey results of the same survey, it was reported that 29.3% of the students have tried smoking and 9.1% still smoke. Of the triers, 29.5% were acquainted with cigarettes before the age of 10.[5] Surveys from Turkey report different rates on prevalence of smoking, ranging between 3.5% and 33.7%.[1,6-11] Tot et al.[12] have reported smoking rates of 4.7% for 6th grade students, 25.3% for 10th grade students and 38.3% for university students in the city of Mersin. It is estimated that 90% of smokers start smoking before the age of 20 and addiction become established by

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the age of 20.[13] In their study Erbaydar et al.[7] have evaluated 6012 adolescents from 15 different cities in Turkey and found the age at which smoking is begun to be 12.3±2.5.

Adolescence is the period of life in which mental and physical changes occur and individuals encounter substances that have addiction potential such as cigarettes and alcohol.[14] At this age, in which risky behavior is intense, it is difficult to give up addictions.[15] Sex, age, curiosity, risky behaviors, desire to fascinate others, trying to act like adults, failure at school or sports, acquaintance with cigarettes at early ages, socioeconomic status of the parents, living with step-parents, and having relatives and friends with addictions play important roles in one's decision to start smoking.[8,11,12,14,16-19] According to the results of 14 different studies on adolescents performed in Turkey between 1993 and 2004, the rate of smoking is higher among the man sex, high school students, individuals that can easily have access to cigarettes, individuals that have positive thoughts about smoking, and individuals with smoking teachers and friends. It is stated that a curriculum containing anti-smoking campaigns would help reduce the smoking habit.[20]

The data of this study were gathered from a multi-purpose study named 'depression, violence and substance addiction among students' performed in Mersin, Turkey. Two different articles were published from this study: "*Prevalence and characteristics of depression as Measured by the CDI in a predominantly adolescent school population Turkey*"[21] and "*Suicide attempts and risk factors among children and adolescent*"[22] The present study evaluates the prevalence of smoking, associated factors, and changes in smoking trends with increasing grades among adolescents in secondary schools of Mersin.

Materials and methods

Study procedure: This school-based, cross-sectional study was performed in 2002 at primary education junior high schools (6th, 7th and 8th grades) and senior high schools (9th, 10th and 11th grades) of Mersin. Official permissions were received before the study from Mersin Governorate and Mersin University Rectorship.

Sample size: There were a total of 81676 students in 86 junior high schools and 36 senior high schools in Mersin. Since previous studies had reported smoking rates among children and adolescents in a wide range, we decided to use smoking prevalence of 50%. Using EPI 6 INFO software,[23] it was estimated that a sample size of 3946 will represent the study universe with 99% confidence interval.

Sampling method: Multi-stage, stratified cluster sampling was used to determine the study group. At the first stage, schools were divided into three groups as high, middle and low according to the socioeconomic features of the region. At the second stage, schools were selected randomly according to the weight of each group. As a result, 12 of the 86 junior high schools and 6 of the 36 senior high schools were selected. At the third stage, the number of students form each school was determined according to the total population of the schools. Classes were randomly selected and all students in class were included. Considering the grades, number of students from classes was selected according to the weight of that class.

It was calculated that a sample size of 4500 (5.5% of the study universe) would represent the universe most accurately. Due to absenteeism and unanswered parent questionnaires, 244 students were excluded. Additionally, due to significant data deficiency in their questionnaires, 113 students were excluded. Overall, data from 4143 (92.1%) students were analyzed.

Questionnaire preparation: Two separate questionnaires were prepared for students and their parents. In order to obtain more accurate information, no questions regarding personal identity were asked. The student questionnaire consisted of questions on the socio-demographic characteristics; and cigarettes, alcohol or substance use. Additionally, students were required to fill the Child Beck Depression Inventory (CBDI). The CBDI focuses on how the subject has been feeling over the past 2 weeks, and some items emphasize symptom intensity over frequency or persistence. The validity and reliability of the CBDI was approved by the Turkish Health Ministry, and as a result of investigations involving Turkish children, the cut-off point was determined as being 19 for both genders.[24]

The parent questionnaire consisted of questions on socio-demographic characteristics, cigarette, alcohol or substance use, and the characteristics of working life.

Students and parents were informed about the study and their written consents were obtained. Students were given parents questionnaire after they filled their own questionnaire. The next day

schools were visited again and parent questionnaires were collected. Questionnaires from the same family were incorporated with same code number.

State of smoking was determined as follows: having smoked at least once (tried), at least one cigarette per day (smoker/current daily smoker), had never smoked in their life (non-smoker)

Statistical analysis: Descriptive statistics were used to summarize the data. The relationship between the age of smoking and sex was determined by Mann-Whitney U test. The relationship between grade and smoking was determined by the "χ^2 for trend test", associated factors leading to smoking were analyzed by binary logistic regression (BLR) analysis.

Results

A total of 4143 students were included. Of these 2252 were men (54.4%). Of the students, 2557 (61.7%) were attending junior high schools, whereas 1586 (38.3%) were attending senior high schools. The mean age of the subjects was 14.5_1.9 years (ranging from 11 to 20). It was found that 1057 (25.5%) of the students had tried smoking and 404 (9.8%) were smokers. Smoking rate was 12.9% for men and 6.0% for women (χ^2=54.787, p=0.001). Other demographic characteristics are demonstrated in Table 1.

The age at which smoking had begun was 12.5±2.7 years. The mean age of starting to smoke for men (11.9±2.8) was lower than that of women (13.6±2.0) (p<0.001). The mean age of starting to smoke for junior high school attendees (11.4±2.2) was lower than that of senior high school attendees (12.9±2.8) (p<0.001, Figure 1).

The mean age of the father was 44.6±6.4, while the mean age of the mother was 40.0±5.9. Almost eighty percent of the fathers (78.2%) and 41.2% of the mothers were defined as smokers (Table 2).

There was an increasing trend in smoking rates through classes. It was observed that the odd's ratio

Table 1. Socio-demographic features of students (Mersin, 2002)

Features		Mail		Femail		Total	
Age		*14.7_1.9		*14.4_1.9		*14.5_1.9	
		n	%	n	%	n	%
Junior school (6-8th grades)		1371	60.9	1186	62.7	2557	61.7
Senior school (9-11th grades)		881	39.1	705	37.3	1586	38.3
Being failed in school	yes	278	12.3	121	6.4	399	9.6
(Losing a education year)	no	1974	87.7	1770	93.6	3744	90.4
Punishment at home;	yes	753	33.4	541	28.6	1294	31.2
	no	1499	66.6	1350	71.4	2849	68.8
Beaten at school;	yes	935	41.5	676	35.7	1611	38.9
	no	1317	58.5	1215	64.3	2532	61.1
Junior high school							
Smoking	smoker	124	9.0	23	1.9	147	5.7
	tried	176	12.8	81	6.8	257	10.1
	never	1071	78.2	1082	91.2	2153	84.2
Alcohol	drinker	209	15.2	105	8.9	314	12.3
	never	1162	84.8	1081	91.1	2243	87.7
Substance	tried	28	2.0	6	0.5	34	1.3
	never	1343	98.0	1180	99.5	2523	98.7
Senior high school							
Smoking	smoker	166	18.8	91	12.9	257	16.2
	tried	227	25.8	169	24.0	396	25.0
	never	488	55.4	445	63.1	933	58.8
Alcohol	drinker	413	46.9	290	41.1	703	44.3
	never	468	53.1	415	58.9	883	55.7
Substance	tried	39	4.4	17	2.4	56	3.5
	never	842	95.6	688	97.6	1530	96.5

*; mean±Sd

Figure 1. Age of onset of smoking in students according to their level of education and gender (Mersin, 2002)

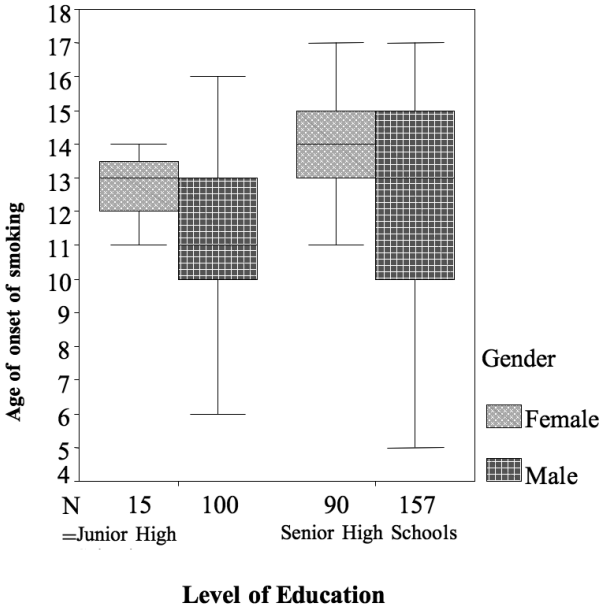

Table 2. Socio-demographic features of parents and families (Mersin, 2002)

Features			
Father			
Age		3054	*44.6_6.4
		n	%
Education;	<8 year	1305	42.6
	≥8 year	1761	57.4
State of smoke;	smoker	2378	78.2
	non-smoker	661	21.8
Alcohol;	drinker	1171	39.3
	non-drinker	1812	60.7
Employment state;			
	unemployed	461	15.0
	employed	2607	85.0
Mother			
Age		3164	*40.0_5.9
		n	%
Education;	<8 year	2019	63.4
	≥8 year	1164	36.6
State of smoke;	smoker	1310	41.2
	non-smoker	1868	58.8
Employment state			
	unemployed	2627	83.1
	employed	535	16.9
Socioeconomic states			
Family income monthly;			
	minimum wage ≥	1632	56.8
	minimum wage <	1242	43.2
House ownership state;	no	1034	32.4
	yes	2154	67.6

*; mean_ Sd

Table 3. Smoking trend through classes (Mersin, 2002)

	Smoker		Non-smoker				
Grades	%		%		OR	%95 CI	p
6th	21	2,4	850	97.6	1.00		
7th	49	5,5	836	94.5	2.37	1.41- 3.99	0.001
8th	77	9,6	724	90.4	4.31	2.63- 7.05	0.000
9th	124	17,6	579	82,4	8.67	5.39-13.93	0.000
10th	71	14,9	406	85,1	7.08	4.29-11.68	0.000
11th	62	15,2	344	84,8	7.30	4.38-12.15	0.000

Chi Square for Trend; _2=121.3, p=0.000

value for smoking was increasing two-fold every year between the 6th and the 9th grades. During the 10th and the 11th grades, this OR maintained its level without an increase (p<0.001, Table 3).

BLR analysis was used to evaluate the associated factors with smoking. For students attending the 6th, 7th, and the 8th grades, age, alcohol abuse, substance addiction, father's smoking, domestic discipline type of punishments, parental problems, man sex, father's age were found to be the associated factors. On the other hand, for those attending the 9th, 10th, and the 11th grades, age, alcohol abuse, parental problems, unemployed mother, being subject to humiliation at school, absenteeism, and higher CBDI scores were found to be the associated factors (Table 4).

Discussion

Lack of a national surveillance program and a national database restricts generalization of the study results and impedes the understanding of the real extent of the tobacco epidemic. According to the 2004 - 2005 results of the Global Youth Tobacco Survey (GYTS), the smoking rate among adolescents is 9.8% worldwide. This ratio increases to 16.2% in the region of Europe, which includes Turkey.[4] According to the 2003 results of the GYTS, 9.1% of the students in Turkey smoke.[5] In our study, we found this ratio as 9.8%. This ratio is the same as the world average. However, it is much lower than the ratio in Europe (%16.2).

Palanci and Saka have reported,[25] the prevalence of smoking as 5.8% in junior high schools and 23.7% in senior high schools. Bilir et al.[1] have reported these ratios as 3.5% and 28.3%, respectively. Tot et al.[12] have performed a study in Mersin and reported that the smoking prevalence increases from 4.7% at

Table 4. Factors associated with smoking among junior and senior High School Students (Binary Logistic Regression Analysis) (Mersin, 2002)

	Junior High Schools					Senior High Schools				
	n	_	OR	95% CI	p	n	_	OR	95% CI	p
Student age (1 year of age)	2557	0.762	2.142	1.60-2.86	**0.001**	1586	0.228	1.257	1.01-1.55	**0.035**
Sex (baseline: female) Male	786	0.705	2.025	1.06-3.84	**0.031**	532	0.290	1.336	0.88-2.02	0.170
Drinking of alcohol (baseline: no) Yes	167	0.955	2.598	1.24-5.41	**0.011**	417	1.269	3.558	2.17-5.82	**0.001**
Trying addicting substance (baseline:no) Yes	18	0.995	13.855	3.92-48.95	**0.001**	29	0.568	1.764	0.66-4.65	0.252
Punishment at home (baseline:no) Yes	525	0.904	2.468	1.40-4.35	**0.002**	244	0.273	1.314	0.84-2.04	0.225
Exposed to mockery at school (baseline:no) Yes	773	-0.104	0.901	0.29-2.74	0.855	523	0.121	1.900	1.13-3.17	**0.014**
Discontinuity to school (baseline: no) Yes	2557	-0.004	0.996	0.91-1.08	0.933	1586	0.180	1.197	1.11-1.28	**0.001**
High depression point (baseline: no) Yes	2557	0.024	1.024	0.97-1.07	0.298	1586	0.043	1.044	1.01-1.07	**0.011**
Conflict with parents (baseline:no) Yes	196	0.915	2.497	1.26-4.92	**0.008**	753	0.669	1.952	1.23-3.08	**0.004**
Father' smoking (baseline:no) Yes	1177	1.653	5.223	1.86-14.59	**0.002**	763	0.095	1.099	0.66-1.80	0.709
Father age (1 year of age)	1849	0.062	1.064	1.00-1.12	**0.032**	1205	-0.004	0.996	0.94-1.04	0.884
Employed mother (baseline: employed) Unemployed	1308	-0.004	0.996	0.34-2.84	0.994	747	0.711	2.036	1.14-3.63	**0.016**

6th grade to 25.3% at 10th grade. In our study, the rate of smokers was found as 5.7% for junior high school students and 16.2% for senior high school students. These results are concordant with the current literature. The striking common point of these studies is that the ratio of smoking among senior high school students is 4 - 8 fold higher than that of junior high school students.

According to the "risky behavior among youth" 2003 report of the Center for Disease Control and Prevention (CDC), there is no difference between men and women regarding smoking.[26] This equality is not the result of the decrease in smoking ratios among men; on the contrary, it is the result of the increase in smoking ratios among women. The higher smoking ratio among men in Turkey is believed to be the result of the differences in traditional socio-cultural characteristics.[6,7,9-11,18,27-29] According to the global youth tobacco survey's 2003 Turkey results, 11.9% of the male students and 5.0% of the female students regularly smoke.[5] These ratios are 25.3% and 17.4% for the boys and the girls attending secondary education schools in Edirne, respectively.[11] Erbaydar et al.[7] reported that men smoked twice as much as women. In their study, Uçar et al.[30] found smoking ratios for men and women attending secondary education schools as 11.4% and 3.8%, respectively. The present study also demonstrates that men smoke almost twice as much as women ($p<0.05$).

Adolescents who do not try smoking during high school training usually do not start to smoke in the later periods of their lives.[31] For this reason, the age of getting acquainted with smoking is very important. According to the GYTS 2004-2005 results, 23.1% of adolescents were acquainted with cigarettes before the age of 10[4]. The age of starting to smoke in our country was reported as 12.39±2.5 years by Erbaydar et al.[7] 13.2±2.7 years by Çelik et al,[9] 13.2±2.7 years by Karlıkaya et al,[10] and 13.02±2.7 years by Yorulmaz et al.[11] In our study, the age of starting to smoke was found to be 12.5±2.7 years, similar to the other studies. Age of start to smoking was smaller among junior high students than that of senior students; this may indicate an earlier start of smoking in young generation. Considering these facts, the fight against smoking should target primary education.

According to the "risky behavior among youth" 2003 report of CDC, 15.5% of the students smoke regularly in the USA and this ratio is increasing with grade.[26] Lloyd-Richardson et al.[32] have studied 20747 adolescents between the age of 12 and 18 and reported that the behavior of "trying" to smoke progresses to "intermittent" or "regular" smoking from the 7th grade to the 12th grade. Other studies and the present study also verify this finding with similar results.[19,26,28,29] In our study, the rate of smoking doubles each year after the 6th grade. This rate maintains its level at the 10th and the 11th grades, and this can be interpreted as the period of establishment of the addiction.

A higher age of the student is an important risk factor increasing the rate of smoking.[7,9,17,18,26,27,33] After BLR analysis, the higher age of the student increases the risk of smoking 2.1 old in junior high school and 1.2 old in senior high school. The influence of the age on smoking ratio decreases after the 9th grade. One of the explanation would be that, this is the result of establishment of the addiction.

In our study, various individual and familial factors were found to increase the rate of smoking in students attending to secondary education (Table 4). Many studies have demonstrated that having parents and siblings who smoke, increases the drive by adolescents to try or start to smoke.[7,18,19,27,29,34] In our study it was demonstrated that smoking rate was higher among junior high school students who has smoker fathers; however, this relation was not found among senior high school students.

While parents' care toward their children decreases the inception of smoking,[35] parental problems increase it.[6] In our study, the presence of parental problems was found as another important factor for both junior and senior high school students. Domestic discipline type of punishment increased smoking 2.4 times in junior high school students, whereas being subject to humiliation at school increased smoking 1.9 times in senior high school students. These situations indicate that the adolescent is affected by domestic issues at younger ages and by issues outside the household at older ages.

In a study conducted in Indonesia on male adolescents, it was reported that students who skipped school, smoked 1.8 times more and students who were late for school smoked 2.3 times more.[17] Similarly it was found in our study that adolescents with absenteeism smoked 1.2 times higher in the high school years. It is believed that performing a forbidden behavior encourages performing another. Abuse of alcohol and addictive drugs increased the rate of smoking in adolescents.[28,36] It was found in our study that trying addictive drugs was a factor which increased smoking in junior high school students, whereas alcohol was a similar factor both in junior and senior high school students.

Tercyak et al.[37] detected high depression scores in smokers in a study in which they evaluated smoking and depression symptoms by The Center for Epidemiologic Studies-Depression Scale (CES-D). Similar results were found in our study. Protection of the adolescent from depression at home and at school will decrease the number of adolescent smokers. To oppose the detected risk factors, we recommend that parents decrease their smoking and manage parental problems, whereas we recommend schools to increase social and psychological back-up, and employ full-time health personnel at school for preventive medical services.

Conclusions

The results of this study showed that junior high school and senior high school periods are extremely important regarding the behavior towards smoking. A lifestyle without smoking should be imposed on children in the preschool period in the context of basic health behaviors.

References

1. Bilir N, Dogan BG, Yildiz AN. Sigara icme konusundaki davranislar ve tutumlar (Ankara-Turkiye). Ankara: Hacettepe Halk Sagligi Vakfi Yayinlari, 1997. p. 16-41.
2. Building blocks for tobacco control: A handbook. WHO Geneva 2004. p. 4-8.
3. Curbing the Epidemic: Governments and the Economics of tobacco Control. The World Bank Washington DC 1999. p. 1-19.
4. Global tobacco surveillance system collaborating group. Global tobacco surveillance system (GTSS): Purpose, production, and potential. J Sch Health 2005; 75(1): 15-24.
5. Erguder T, Soydal T, Ugurlu M, Cakir B, Warren W. Kuresel genclik tutun arastirmasi, 2003 Turkiye. Available at: http://www.cdc.gov/Tobacco/global/gyts/factsheets/2003/ Turkey.htm. Accessed January, 2007.
6. Herken H, Ozkan I, Cilli AS ve Bodur S. Ogrencilerde alkol kullanim sikligi ve sosyal ogrenme ile iliskisi. Dusunen Adam 2000; 13: 87-91.
7. Erbaydar T, Lawrence S, Dagli E, Hayran O, Collishaw N. Influence of social environment in smoking among adolescents in Turkey. Eur J Public Health 2005; 15(4): 404-10.
8. Goksel T, Cirit M, Bayindir U. Izmir ili Ogrencilerinin Sigara Aliskanligini Etkileyen Faktorler. Toraks Dergisi 2001; 2(3): 49-53.
9. Celik P, Esen A, Yorgancioglu A, Sen FS, Topcu F. Manisa ilinde lise ogrencilerinin sigaraya karsi tutumlari. Toraks Dergisi 2000; 1(1): 61-6.
10. Karlikaya C. Edirne'de lise ogrencilerinde sigara icme prevalansi. Toraks Dergisi 2002; 3(1): 7-12.
11. Yorulmaz F, Akturk Z, Dagdeviren N, Dalkilic A. Smoking among adolescents: relation to school success, socioeconomic status, nutrition, and self-esteem. Swiss Med Wkly 2002; 132: 449-54.
12. Tot S, Yazici K, Yazici A, Metin O, Bal N, Erdem P. Psychosocial correlates of substance use among adolescents in Mersin, Turkey. Public Health 2004; 118: 588-93.
13. Sigara ve saglik ulusal komitesi bildirisi. Saglik Icin Sigara Alarmi 1996; 3(1-2): 9-10.
14. Parry-Jones WL. Adolescens. In: Detels R, Holland WW, McEwen J, Omenn GS, editors. Oxford Textbook of Public Health (3th ed). New York: Oxford University Press, 1997. p. 1397-1413.
15. Akturk Z, Tazeyurt Y, Dagdeviren N, Sahin EM, Ozer C, Turk F, Ilicali G: Edirne il merkezindeki ergenlerin sigara, alkol ve madde kullanim durumlari ve ebeveynlerin etkisi. 9. Anadolu Psikiyatri Gunleri Bildiri Kitabi 13-17 Haziran 2000. Edirne: Alemdar Ofset, 2000. p. 815-20.
16. Ogel K, Taner S, Yilmazcetin C. Ergenlerde madde kullanim bozukluklarina yaklasim kilavuzu. IQ Kultur Sanat Yayincilik. Istanbul: Kilim Matbaasi, 2003. p. 12-23.
17. Smet B, Maes L, Clercq LD, Haryanti K, Winarno RD. Determinants of smoking behaviour among adolescents in Semerang, Indonesia. Tob Control 1999; 8: 186-91.
18. Emri S, Bagci T, Karakoca Y, Baris E. Recognition of cigarette brand names and logos by primary school-children in Ankara, Turkey. Tob Control 1998; 7: 386-92.
19. Proescholdbell RJ, Chassin L, MacKinnon DP. Home smoking restrictions and adolescent smoking. Nicotine Tob Res 2000; (2): 159-67.
20. Ertas N. Factors associated with stages of cigarette smoking among Turkish youth. Eur J Public Health 2007; 17(2): 155-61.
21. Toros F, Gamsiz Bilgin N, Bugdayci R, Sasmaz T, Camdeviren H, Kurt O. "Prevalence and charecteristics of depression as Measured by the CDI in a predominantly adolescent school population Turkey. Eur Psychiat 2004; 19; 264-71.
22. Toros F, Gamsiz Bilgin N, Sasmaz T, Bugdayci R, Camdeviren H. "Suicide attempts and risk factors among children and adolescent", Yonsei Med J 2004; 45(3): 367-74.
23. Dean AD, Dean JA, Burton JH, Dicker RC. A Word Processing, Database and Statistics Program for Epidemiology on Microcomputers. Centers for Disease Control. Atlanta, GA, 1990.
24. Öy B. Çocuklar için Depresyon Ölçeği: Geçerlik ve güvenirlik çalışması. Türk Psikiyatri Dergisi 1991; 2(2): 132-136.
25. Palanci Y, Saka G. Diyarbakir İl merkezindeki ilkogretim 6., 7., 8. siniflari ile lise ogrencilerinde sigara, alkol ve madde kullanimi ve etkileyen faktorler IX. Halk Sagligi Kongresi Bildiri Ozet Kitabi. 3-6 Kasim Ankara 2004. p. 411.
26. Grunbaum JO, Kann L, Kinchen S, et al. Youth Risk Behavior Surveillance-United States, 2003. MMWR 2004; 53(SS-2): 9-12.
27. Bozkurt AI, Bostanci M, Catak B. Denizli'de uc ilkogretim okulu 6,7,8'inci siniflarda sigara kullanimi. 8. Halk Sagligi Gunleri Bildiri Kitabi. 23-25 Haziran 2003 Sivas. 2003. p. 178.
28. Herken H, Ozkan I, Bodur S, Kaya N, Turan M, Askin R. Genclerde sigara kullanimi ile anne-baba tutumu ve sosyodemografik ozelliklerin iliskisi. Genel Tip Derg 1997; 7(4): 189-93.
29. Luleci E, Calik B, Turgul O. Manisa'da bir lise ve bir ilkogretim okulunda sigara, alkol, uyusturucu ve ucucu madde kullanimi IX. Halk Sagligi Kongresi Bildiri Ozet Kitabi. 3-6 Kasim Ankara 2004. p. 423.
30. Ucar B, Kilic Z, Colak O, Oner S, Kalyoncu C. Coronary risk factors in Turkish schoolchildren: Randomized cross-sectional study. Pediatr Int 2000; 42: 259-267.
31. Cocuklarin ve genclerin tutun urunlerinden korunmasi (ABD Saglik Bakanligi raporu 1994). Saglik Icin Sigara Alarmi 1994; 1(2): 46.

32. Lloyd-Richardson EE, Papandonatos G, Kazura A, Stanton C, Niaura R. Differentiating stages of smoking intensity among adolescents' stage-specific psychological and social influences. J Consult Clin Psych 2002; 70 (4): 998-1009.
33. Braverman MT, Svendsen T, Lund K, Edvard L. Tobacco use by early adolescents in Norway. Eur J Public Health 2001; 11(2): 218-24.
34. Herken H, Ozkan I. Sigara ve sosyal ogrenme. Genel Tip Derg 1998; 8(1): 45-7.
35. Cohen DA, Richardson J, Bree LL. Pediatrics 1994; 94(3): 368-375.
36. Townsend J, Wilkes H, Haines A, Jarvis M. Adolescent smokers seen in general practice: health, lifestyle, physical measurements and response turnover antismoking advice. BMJ 1991; 303(19): 947-50.
37. Tercyak KP, Goldman P, Smith A, Audrain J. Interacting effects of depression and tobacco advertising receptivity on adolescent smoking. J Pediatr Psychol 2002; 27(2): 145-154.

Assessment of Mental Health of Earthquake Victims with GHQ-28 Just After the Earthquake

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Abstract

Turkey has experienced a powerful earthquake with a magnitude of 7.4 on 17 August 1999 with severe damage and losses. In this descriptive research, two newly formed temporary field settlements, composed of tents, which have similar characteristics with respect to numbers of tents, numbers of people living in those areas, and location of the settlements, were determined as the research area. One person older than 18 years of age, whom could be easily communicated with, was selected from each tent, interviewed, and was administered the 28-item GHQ (GHQ-28).

Out of 202 tents, residents of 164 tents (%81.2), that could be reached and accepted to participate in the study were all included. Only one person, older than 18 years of age whom could be easily communicated with, was selected from each tent. The mean GHQ-28 score was 12.75 ± 7.36. The variables "sex" and "education status" were determining factors for being included into the "high risk" group in our research group. Scores of 5 or more on the GHQ were 8.77 (3.27-23.48) times higher in females and 2.63 (1.10-6.33) times higher in the illiterate/literate/primary school graduate group

The GHQ-28 is a powerful tool identifying those in need of psychological support and application of such screening tests should be integrated into the basic "primary health care services" package provided after catastrophes.
Key words; 28-item GHQ, earthquake, mental health, Turkey

Introduction

The World Health Organisation (WHO) defines disaster as "situations and events, which have sudden, serious and unexpected results on public health"[1]. A disaster is an event that occurs suddenly, unexpectedly, and uncontrollably, that is catastrophic in nature, involves threatened or actual loss of life or property, disrupts the sense of community, and often results in adverse psychological consequences for the survivors[2]. Disasters have deep impacts on the social and psychological behaviours of society[3]. Experiencing a disaster is one of the most serious traumatic experiences one might face. Disasters have important short-term and long-term effects on the mental health of the people who lived the experience.

Many studies confirm that mental health problems would be expected to emerge immediately after natural and technological disasters. A panic situation would appear in a few minutes immediately after catastrophes. Panic reaction can be seen more in crowded places and/or buildings and closed environments. In some cases, there would be confusion accompanied with fear and a sense of helplessness. Within a few hours, a common psychological reaction would emerge in many cases. The main features of the reaction include spending extraordinary efforts to do something, trying to communicate and contact with close relatives and friends and joining spontaneously to life saving works. Social barriers as well as psychological barriers, which control and even restrict the behaviours of persons, disappear under such circumstances[4,5]. The psychological problems developed after catastrophes, include particularly posttraumatic stress disorder, depression, neurosis, alcohol dependency (alcoholism), anxiety and somatisation can be mentioned. In many cases, depression is accompanied by insomnia, bed

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wetting in children (nocturnal enuresis), anxiety and psychosomatic disorders (e.g. palpitation, sweating, and dyspnoea)[3,4,5].

One of the most severe and destructive earthquakes in Turkey occurred on 17 August 1999, at 3.02-a.m. local time. It struck almost the whole Marmara region where approximately 25 per cent of the Turkish population (16 million) live and it caused 6 per cent reduction (shrinkage) in the Turkish economy[6]. The region itself had a high population density and urbanisation rate. There were 17,480 casualties and 43,953 injuries as a result of the Marmara earthquake with severe material damage and losses: 3,891 people died and 5,180 persons were injured during the earthquake in the province of Sakarya where the study was conducted[7].

The people who experience earthquakes often have emotional and/or psychological problems and these problems generally last for many years. This study was carried out 3 months after the earthquake and aimed assessing the mental health status of the people who lived in temporary field settlements formed in the region after the earthquake. But, during the data gathering stage, on 11 November an earthquake with a magnitude of 5.7 and on 12 November another earthquake with a magnitude of 7.2 occurred in the region: 845 people died and nearly 5000 persons injured and these new earthquakes caused a significant panic and fear in the settlements like all other places of Sakarya, in which the research was done.

These unexpected new disasters caused a change in study objectives and the study aimed to define the mental health status of victims with 28-item General Health Questionnaire (GHQ-28) just after the earthquake. The GHQ-28 has been used in evaluating post-traumatic stress following a variety of disaster situations[8,9].

Material and Method

Following the 17 August Marmara earthquake, 42 temporary field settlements of tents were established in the province of Sakarya where 27,900 persons were sheltered in the city centre in a total of 6,836 tents. A descriptive research study was conducted in two newly formed temporary field settlements in the same district 3 months after the earthquake. Out of 202 tents, residents of 164 tents (%81.2), that could be reached and accepted to participate in the study were all included. Only one person, older than 18 years of age whom could be easily communicated with, was selected from each tent. This person was interviewed, using a standard questionnaire that consists of questions about socio-demographic information, as well as a GHQ-28.

The standard questionnaire included questions about socio-demographic features of the person interviewed, loss of close relatives and friends, injuries in his/her family due to the earthquake and material losses and damages they faced after the earthquake.

The GHQ-28 is a short and practical screening test, which can be easily applied outside psychiatry clinics and in collective community screenings in different countries. It aims at measuring mental health status of people in their last 15 days and identifying disorders that could not be diagnosed for a specific illness[10]. The GHQ-28 was found to be a valid instrument for defining the presence of psychiatric disorder in a disaster-effected community[11]. The validity and reliability of the GHQ-28 is also tested and have been used in many settings in Turkey[12]. Individuals who scored 5 or more on this test were classified as a "case" with mental health problems in our research[10].

Statistical analysis included frequency and percent distributions; bivariate analysis using chi square test or Fisher exact chi square test, as appropriate. We also computed odds ratio and 95 percent confidence limits using multivariate logistic regression analysis. Backward elimination method was used to select statistically significant predictors of GHQ score, at alpha=0.05. All covariates that were found significant in bivariate analysis (sex, education status employment/work status, self-reported loss of relatives/friends in the earthquake, self-reported material loss and damage) and age were tested in models as predictors of GHQ score, and/or as potential confounders. SPSS Version 10.0 statistical software package was used for analysis.

Results

Age distribution of the interviewed persons in the study ranged between 18 and 75 years old and their mean age was 41.2 years. When distribution of persons in the two settlements was examined by their sex, 59.8 percent of them were female, while 40.2 percent was male. As regards to their education level, those who were primary school graduates constituted half of the study population and the

second largest group was those who were secondary school graduates (15.2%). Of the interviewed persons 18.9% had lost a relative and 7.9 % of them had an injury during Marmara Earthquake. Almost all families (92.7%) had lost their monetary; nearly half of houses were destroyed. Even those, who had no damage in their apartments/houses and were capable of using their housing facilities in daytime, were using tents at nights due to fair that the earthquake might repeat,.

The mean score for the interviewed persons on the GHQ-28 was 12.75 ± 7.36, and the values ranged between 0 and 24. Within this framework, 79.3 % of the interviewed people scored 5 or more on the GHQ-28.

Data analysis revealed a statistically significant relationship between scores on the GHQ-28 and the socio-economic background of the people. (i.e., education and employment status, the loss of relatives and the material damage experienced during the earthquake of the interviewed persons) (Table 1). The proportion of individuals with scores of 5 or more on the GHQ were 8.77 times higher among females and 2.63 times higher in the illiterate/literate/primary school graduate group (Table 2).

Discussion

People may be under shock immediately after earthquakes. After this immediate shock, they experience strong emotional feelings such as fear, concern and anxiety, guilt, regret, anger, pessimism, panic, nervousness, resentment, helplessness and shame. These reactions may follow each other and change in time[13]. In addition, posttraumatic stress disorder may arise in people who face a seriously threatening event.

The percentage of mental health problems in society during extraordinary times such as disasters is expected to increase. In this research, 79.3 per cent of the study group had some mental health problems immediately after the earthquake. The last two earthquakes might have had the highest percentage of the mental problems. The mean GHQ-28 score in the whole country is 1.37 (0.86 in males and 1.60 in females)[14]; whereas GHQ-28 scores in various risk groups vary between 2.42 and 6.27 in the studies of ordinary times[15]. When the values are evaluated, it is evident that the GHQ-28 scores obtained in the study are much higher than the country average and risk groups' average. It is known from the different studies that GHQ-28 scores of the residents in a disaster area were markedly higher than control groups[16,17]. Furthermore, all studies done in the earthquake regions indicate that psychological (mental health) problems constitute a considerable part of the reasons for individuals applying to a health institution[18].

In the research, a score of 5 or more, i.e. those mostly to have a psychiatric problem was 8.77 times more likely in females than males. Almost half of the males (42.4 per cent) in the group got less than 5, while 93.9 per cent of the females got point 5 or more, in 28-item GHQ scores. It may be concluded that nearly all of the women were affected. Similarly, in different studies, it has been found that psychological problems are much higher in female population than in males[17,19-21]. In a survey with its two sequential phases conducted after 10 weeks and 16 months after the 1995 Dinar Earthquake (Turkey), females on average were found to report more emotional distress. Moreover, signs and symptoms such as stress, somatic signs, depression, phobic anxiety, fury and tension were observed more in females than males and stress levels of females were significantly higher than males' levels[22]. In spite of similar results and statistically significant relationship between sex and GHQ 28 scores, it should not be ignored that 3 out of every 5 males had scores that could be considered as a "case" in the research (Table 1).

Another factor affecting the GHQ score was educational status of the person. The risk in the illiterate/literate/primary school graduate group is 2.63 times higher than that in individuals with secondary school or higher education. The outcome was that high GHQ points generally belong to the persons who have low education status as in other some studies[17,19,21]. Thus, the GHQ scores decrease as the education status of people gets higher. In different studies it was revealed that education is an imported factor affecting mental health. High ratio of simple depression, general anxiety, hysteria, somatic signs of concern and depression are seen in the persons who have no education[23]. GHQ scores show a negative relationship with educational qualification and uneducated group have 2.16 (1.45-3.23) times greater risk of a high GHQ than those educated for 12 years or more[24].

Table 1. Distribution of the GHQ-28 Scores Characteristics Of The People Living In Temporary Field Settlements After The 17 August Marmara Earthquake (Sakarya, November 1999)

	28-item GHQ					
	5<		5≥		χ^2	p
	n	%	n	%		
Sex					31.60	<0.05
Male	28	42.4	38	57.6		
Female	6	6.1	92	93.9		
Age Groups (year)					6.55	>0.05
15-24	5	21.7	18	78.3		
25-34	8	20.5	31	79.5		
35-44	8	17.4	38	82.6		
45-54	9	39.1	14	60.9		
55≥	4	12.1	29	87.9		
Education status					20.23	<0.05
Illiterate/literate	–	–	22	100.0		
Primary school graduate	12	14.6	70	85.4		
Secondary school graduate	12	48.0	13	52.0		
High school or more graduate	10	28.6	25	71.4		
Employment/Work status					7.29	<0.05
Yes, employed	13	37.1	22	62.9		
No, unemployed	21	16.3	108	83.7		
Loss of relatives/friends in the earthquake					4.74	<0.05
Yes	2	6.5	29	93.5		
No	32	24.1	101	75.9		
Material loss and damage					6.75*	<0.05
Yes	28	18.4	124	81.6		
No	6	50.0	6	50.0		
Total	34	20.7	130	79.3		

* Fisher exact chi square test

Table 2. Associations between the GHQ-28 and Sex and Educational Status in People Living In Temporary Field Settlements After The 17 August Marmara Earthquake (Sakarya, November 1999)

	28-item GHQ					
	5<		5≥		Odds ratio	%95 Confidence Interval
	n	%	n	%		
Sex						
Male	28	42,4	38	57,6	1,00*	
Female	6	6,1	92	93,9	8,77	3,27-23,48
Educational Status						
Illiterate/Literate/ Primary School	12	11,5	92	88,5	2,63	1,10-6,33
Secondary School and More	22	36,7	38	63,3	1,00*	

* Reference category

According to the results of the chi-square analysis, employment situation, loss of relatives & friends and material damage and losses were determining factors for being included into "high risk" group with respect to their 28-item GHQ scores in the research group. It is stated that, disasters had a deeper psychological impact on individuals if society could not provide sufficient physical and emotional support for victims[5,25]. Facing and/or experiencing the possibility of death, seeing many dead and injured people, losing relatives and friends, material damage and losses as well as unemployment, are reported as the most influential factors in arising individual reactions towards trauma[25,26]. These findings are similar to some other studies[17,19,21] but were not significant in multivariate logistic regression analysis. The sample size of the study can cause some limitations, leading to a Type II error. It is noteworthy that this study was designed as a descriptive study, thus, may provide "limited" evidence in studying the association between potential risk factors and GHQ-28 score status of study participants. Thus, analyses should be interpreted as "hypothesis-generating", rather than "hypothesis testing" and further studies are clearly warranted to confirm our findings in analytic studies of larger populations. In conclusion, this study, as well as all the previous studies, clearly showed to what extent mental health status of the society could be deteriorated after a series of earthquakes. Some chaos inevitably followed catastrophes as it was observed during the two earthquakes. During the last decade, Turkey has experienced many significant earthquakes since its geography occupies an earthquake belt/zone. For this reason, a variety of studies on different topics, including mental health status of earthquake victims, have been carried in the earthquake regions over the last 10 years. One of the most important findings from these studies is that these people who have mental health problems need to be informed that their psychological symptoms are natural reactions of people who face this kind of disasters. Better preparedness and use of data from previous disaster[27] could be used to avoid from mental affects of disasters. On the other hand, psychological support and mental health services are generally missing part of emergency health care services provided at supply in those chaotic times. Psychological support should be integrated into the basic health care service package provided after catastrophes.

References

1. Lechat MF. The Epidemiology of Disasters, Section of Epidemiology& Community Medicine, 1976.
2. Mahoney LE., Reutershan TP. Catastrophic disasters and the design of disaster medical care systems, Ann Emerg Med, 1987, 16:1085-91.
3. Noji EK. The Public Health Consequences of Disasters. New York: Oxford University Press, 1997.
4. WHO. Action by the local health personnel, coping with natural disasters: The role of local health personnel and the community. World Health Organization, Geneva, 1989.
5. Amato Z. The influences of extra-ordinary situations on psychological health, health care services in extra-ordinary situations. The handbook of health service providers. Turkish Medical Association, Izmir, 1996.
6. Turkish Union of Architects and Engineers'. Chambers Engineering Report of Marmara and Düzce Earthquakes, The Chamber of Civil Engineers&METU, Department of Civil Engineering, Ankara, 2000.
7. Prime Ministry Crisis Centre. Republic of Turkey, Earthquakes 1999, Activities Carried Out by Ministries and Other Public Institutions After the 17 August and 12 November Earthquakes, Ankara, 2000.
8. Sin SS, Chan A, Huak CY. A pilot study of the impact of the Asian Tsunami on a group of Asian media workers. Int. J. Emerg. Ment. Health. 2005; 7(4):299-305.
9. Hagh-Shenas H, Goodarzi MA, Debozorgi G, Farashbandi H. Psychological consequences of the Bam earthquake on professional and nonprofessional helpers. J. Trauma Stress. 2005; 18(5):477-83.
10. Kilic C. Validity of General Health Questionnaire in Turkey, Hacettepe University Faculty of Medicine, Department of Psychiatry, Expertise Thesis, Ankara, 1992.
11. McFarlane AC, Clayer JR, Bookless CL. Psychiatric morbidity following a natural disaster: An Australian Bushfire. Soc Psych Psych Epid, 1997; 32 (5): 261-8.
12. Kilic C, Rezaki M, Rezaki B, Kaplan I, Ozgen G, Sagduyu A, Ozturk MO. General Health Questionnaire (GHQ12&GHQ28): psychometric properties and factor structure of the scales in a Turkish primary care sample. Soc Psych Psych Epid. 1997; 32(6): 327-31.
13. Turkish Association of Psychologists. Workshop specific to Earthquake, Recognition and Minimizing the Psychological Consequences of the Earthquake, 4th Edition, Ankara, 2000.
14. Minister of Health. Turkish Mental Health Profile, Preliminary Report, Ankara, 1997
15. Tezcan S, Aslan D. The evaluation of the general psychological health among several occupational groups in Ankara. Kriz. 2000: 8(1): 1-8.
16. Araki K, Nakane Y, Ohta Y, Kawasaki N. The nature of psychiatric problems among disaster victims. Psychiatry Clin Neurosci. 1998; 52 (Suppl):317-9.

17. Catapano F, Malafronte R, Lepre F, et. al. Psychological consequences of the 1998 landslide in Sarno, Italy: A community study. Acta Psychiatrica Scandinavica. 2001; 104 (6): 438-42.
18. Carr VJ, Lewin TJ, Carter GL, Webter RA. Patterns of service utilization following the 1989 Newcastle earthquake: findings from phase 1 of the Quake Impact Study. Aust J Public Health. 1992; 16(4): 360-9.
19. Basoglu M, Salcioglu E, Livanou M. Traumatic stress responses in earthquake survivors in Turkey. J. Traum. Stress. 2002; 15 (4): 269-76.
20. Karancı N. The psycho-social dimensions of earthquakes: Erzincan, Dinar, and 17th August Marmara Earthquake. Turkish Bul Psychology, Special Issue on Earthquake, 1999; 5 (14): 55-58.
21. Livanou M, Basoglu M, Salcioglu E, Kalendar D. Traumatic stress responses in treatment-seeking earthquake survivors in Turkey, J Nerv. Ment Dis. 2002; 190(12):816-23.
22. Alkan NU. The stress reactions of people who experienced Dinar Earthquake in 1st of October 1995: The examination of coping with stress within the context of information theory, Master Thesis, METU, Dept of Psychology, Ankara, 1998.
23. Ozsahin A. Health care services in disasters (earthquakes as an issue of public health). Istanbul University, Institute of Health Sciences, Dept. of Public Health, Master Thesis, İstanbul, 1998.
24. Belek I, Social class, income, education, area of residence and psychological distress: Does social class have an independent effect on psychological distress in Antalya, Turkey?. Soc Psych Psych Epid, 2000; 35:94-101
25. Freddy JR, Saladin ME, Kilpatrick DG, Resnick HS, Saunders BE. Understanding acute psychological distress following natural disaster. J. Traum. Stress. 1994; 7 (2):257-73.
26. Erol N, Oner O. The psychological reactions to trauma and the approaches towards them. Turkish Bul Psychology, Special Issue on Earthquake. 1999; 5 (14):40-4.
27. Guha-Sapir D, Carballo M. Medical relief in earthquakes. R Soc Med. 2000; 93(2): 59-61.

What is advocacy according to Public Health?

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Abstract

Advocacy is explained as pleading in support (of a cause or somebody) and advocate means a person who speaks in favour of somebody or something. It is not very easy to make people participate in the decision making process. It needs a planned, disciplinary and long term effort. During this time, it is necessary to obey the principles and rules. A message is a form of expressed information which is disseminated for a specific purpose. A well-formulated message can be the basis for a successful advocacy campaign. One of the most important tools that are used in advocacy is media. Another tool is website planning that should be established by the professionals. Also lobbying is one of the methods which are used by advocates. Lobbying is a group of methods and techniques which will be able to influence public opinion and decision making mechanisms through the lobbyist's or organization's gains. Consequently, both in general and in advocate actions, resources are limited so, they are used carefully. The purpose of this paper is to elaborate on the details of advocacy according to public health perspective.

Key words: Advocacy, Public Health, Coalition, Message, Media, Lobbing

1. What is Advocacy?

According to Oxford Advanced Learners' Dictionary of Current English, advocacy is explained as "pleading in support (of a cause or somebody)" and advocate means "person who speaks in favour of somebody or something[1]".

In another dictionary, advocacy is the act of advocating support, the act of pleading for. In the same dictionary, advocate is explained as the one who publicly supports or urges[2,3]. However, nowadays, there are also definitions which handle advocacy in political and social views. One of the most frequently used is that advocacy is the process which effects the policies. In Bond Guidance Notes Series 3, advocacy is the process to use the knowledge strategically in order to change the policy that will affect the life of disadvantageous people who are not in the administrative state[4].

Advocates are the ones who are gathered by the meaning of vision and mission[6]. The advocates and the volunteer organizations that they form aim to make some revolutions in economical, political, social and cultural structure to reach the ideal world that they define as the necessity of their existence. Their main purpose is to create the social transformation that removes this problem[5].

2. Principles of Advocacy

Advocates and their organizations should encourage the decision makers about making laws and executing them, by taking their attention to the case they defend about the politics which approach positively to their case.

Social justice advocates can play a role in helping amplify other people's voices, as well as organizing people so they become their own confident advocates[6]. They lead people to define their problems and aims and determine their strategies based on their needs and wants. In other words, they make them realize their power and use it to affect the decision making process. Nevertheless, it is not too easy to make people participate in the decision making process. It needs a planned, disciplinary and long term effort.

To reach the highest point for advocacy, a set of core values that is believed to create an innovate

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learning organization is identified. The acronym- THE RAMP- symbolically means reaching greater heights.

a. Transparency: Members of both the leaders and the others that take place in social justice advocacy should be transparent in relationships both with each other and with the other organizations especially with the decision makers.
b. Hope: Advocates and the other people they work with should believe that people's advocacy efforts will create change.
c. Exchange: In advocacy movements exchanging the missions among peers and colleagues should be realized. Everyone has something to offer and share with the others.
d. Respect: In advocacy organizations, people should respect for members and leaders alike, given in one-on-one relationships and in group settings.
e. Affirmation of people doing the work. This means not only the leaders, but also those who provide administrative and logistical support, and those who are relatively inexperienced should be supported.
f. Modeling, People taking place in advocacy organizations should be setting a good example. They should be true to their words.
g. Pragmatism. Actions are based on long-term and short-term objectives that are realistic, achievable, and practical[6].

3. What is the Strategy of Advocacy and How it is Planned?

When embarking on a journey, planning the trip and directing its course is necessary. Travellers move forward, consulting maps or other sources that inform them about what is ahead, and keeping a fixed point- a mountain peak, the stars, or a compass heading- a reference for guidance along the way. Advocates especially the initiators of action should develop strategies to protect and improve their goals to take them to the target, like travellers. From this point strategy planning in advocacy is just like trip planning[6].

When framing an overall approach to strategy planning we introduce the steps that orient advocates to the process of navigating among the tools, resources and knowledge that they have at hand. The first questions to be answered by any advocacy effort should be; what do we want? What are our goals? The objectives for the advocacy campaigns should be multi-dimensional. Small changes occur simultaneously, ultimately building towards long term, transformative change. If the changes take a long time, people can lose their motivation. Advocates should focus on the problem at local, national and international level. To build a strategy about a subject, there must be integrated approach and general view. In other words, structure of the subject should be defined. While defining these, some questions can be asked, such as:

Who are we? Why are we doing this work? What are our values? What perspectives and identities do we bring to our work? Do we represent someone besides ourselves? If so, what is our accountability to these people? Do we have good relationship with the decision makers'? What are our sources of legitimacy and credibility? What are our sources of power? What risks do we face[6]?

Another group of questions can be arranged as: What are our sources? How can we use our sources effectively? What do we need to improve? From the answers of these questions, deficiencies should be determined and completed. How can we start? Who can give this to us? In this way, the people and the institutions that are needed to activate should be determined. By gathering appropriate people, short term objectives should be determined and in other words, to reach long term objectives, a strong foundation should be formed[6].

Most of the time, advocates think that they are not the dominant side in the relationship between the decision maker about the power relation. There are myths about power in everybody's minds[6]. For instance; the other side/they have the power etc. Nevertheless, power is a concept that can change. It can be infinite, unregistered, shared or limited. Moreover power balances are also dynamic and can change abruptly (immediately). It is not guaranteed that the person/institute that have power today will have it tomorrow. Advocates know from their experiences that power is not given, but it will be taken at the end of a certain resistance and struggle.

The other two questions that should be thought while improving the strategy are; Where are we? Where are we going to? Advocacy is mostly based on creating awareness. The place and the situation that the advocates are in, should be assessed and then the next step should be chosen. These

assessments should be made frequently along the whole process and then the next step should be considered.

Advocates often struggle with questions of effectiveness. They think about "How do they plan better; how do they deliver their message more powerfully?" In seeking to be more effective, the answer may lie not in "how", but in "who". The person who has the leadership role should have some certain properties. The leader should be visionary, strategy expert who can estimate of people, be experienced, and outside sparkling.

4. Research for Advocacy

Advocates should have a good knowledge about the subjects they defend. In some cases, it is not easy to reach enough information and data. Moreover, in some cases, information and data are hidden intentionally. For this reason, one of the best ways for the advocates to have enough information and data, is doing research for advocacy. The difference between the researches for advocacy and the other researches is that, these researches are not only done for the purpose of taking the attention to the problem and supporting it, but also for the purpose of changing the policies and laws about the subject.

While planning the research for advocacy, there are some questions that must be kept in mind. These are: What is the problem? What policy goal does this research address? Is this research appropriate for the policy goal? Will the research be done in time to meet the policy objectives? How will the results be used to advocate for that policy goal? Are there any other (cheaper, easier, more effective) ways to get the same results[6]?

Types of Research for Advocacy;

Opinion Polls/Surveys: Opinion polls can be useful to show the general public support and knowledge. Generally the objective is to gain the public support for the actions that is realized against the problem and to activate the ones that make the laws. If the public is not supportive, then it is the advocates' task to educate people about the importance of the subject.

Economic research: The researches like, cigarette consumption per capita and its costs, health care costs for the cigarette-attributed illnesses are the examples of economics researches. These researches are used to convince the public and politicians.

Qualitative Research: To determine the quotes and interesting stories from the real life and to show them to the public by the help of media are some examples for the qualitative researches. The story of a person who has lost his leg and then his job because of tobacco consumption can be a good example for it.

At the end of all researches, the report that will be prepared and presented should be short and include charts and graphs that illustrate the findings. While explaining the results, attractive sentences should be used in the report. It should focus on the subject and be objective, rather than give detailed information. Where, how, to whom the presentation which will be made is as important as the preparation of the research report. First of all, the report including the results of the research which was prepared at the end of the research, should be directly presented to the policy makers. While presenting the report, one of most frequently used and beneficial method is to hold a press conference by inviting well-known people in the field covered by the research. The members of the press should be invited to come to the meeting to discuss the results. A press release and fax which explain the importance of the subject and research should be written to various media[6].

5. The Organization of Advocacy and Establishing Coalitions

In the advocacy movement, advocacy coalitions have an important role. Coalition means strength not only in numbers and diversity but also in cohesion and solidarity. In coalition, workload and resources are shared and a micro-model of a just, decent society can be created. For this reason, every advocacy movement should think it important to find partners/form coalitions and should struggle.

Coalitions exist for joint actions. To reach a specific goal, members invest significant resources, share decision making power and coordinate their strategies, messages and action plans. In addition to a common interest, coalition members must share a high level of trust.

As starting the coalition, each group should discuss these questions and share the answers with other groups that they form the coalition. These questions are: Who are we? Whom do we each represent? Why do we care about the issue? Why do

we need or want to join the coalition? What is our objective? What is our perspective-individual and organizational? What are our resources? What can we do? What are our strengths and limits? In the same way, before building a coalition, these questions should also be answered: What are the properties, leadership, type of management of the stakeholders? How is the infrastructure of the organization? Does the organization have a sound financial base? What is the skill and capacity of the organization? Does the organization have productive relationship with other non- governmental organizations, the decision makers and the media[6]?

Diversity is one of the important components of coalition power and the ability to form society power. While forming a coalition, it should be asked why instead of with whom. Considering the strategy of the organization, coalition can be formed with the right group. Advocates should be ready to spend more time, power and be flexible. It should be known that if the perspective is more different, development of strategy and analysis and movement plan would be much better. There are some important components of a workable coalition. Those are; it should have a clear, significant certain structure. An open communication and a unified platform should be created. Movement should have measurable objectives and frequent assessments should be made to reach the objectives[6].

However, the differences between members and organizations can cause problems in a coalition. Sharing decision making power can cause problems. Working in coalition can cause loss of time and energy. The coalition can grow up to an extend that it does not function. The expenditure can be more than the profit. In such cases, coalition should be assessed again.

6. Formation and Giving Messages

One of the most important tools that are used in advocacy is messages. The first step of formulation of a message is seeking the answer to these questions: What do people need to hear? All of the messages that are wanted to be given should be established on the same true basis and also presented in a way that will persuade the target audience. From whom do they need to hear it? As much as the content of the message, who gives the message is important. The messages and information that are given by a specialist about that matter are more effective.

No media advocacy campaign can succeed without a powerful, coherent message, the message that is, at the same time, logically persuasive, morally authoritative, and capable of evoking passion. The message must speak to the brain and to the heart at the same time. Messages bring clarity and focus to specific issues and campaigns and allow advocacy practitioners to frame public debate on their terms. A good message is simple, to the point, easy to remember and repeated frequently.

People need to hear a message again and again to retain it. Simple repetition also builds comfort and familiarity with ideas and issues in time. Using the same message repeatedly promotes retention more effectively than using multiple messages.

There are basic principles of a message development. These are:

* A message should be easy to grasp, short and uncluttered.
* Frame of the message should be put around the issue: Audience attention should be shifted through perspective of the message by highlighting specific aspects of an issue, such as who is responsible for the cause and who offers possible solutions[7] (Former chairman of one of the largest international tobacco companies in the world, told that he did not smoke cigarette and he confesses that smoking is harmful)[8].
* Target audience should be known: Their values, beliefs, feelings, needs and priorities.
* The audience should be invited to "fill in the blank" and thus to take ownership of the message.
* A solution should be presented (People are more responsive if solutions are the focus, versus focusing on the problem's cause)[7]. Also instead of negative messages, if positive messages are used, it would be more appropriate and effective.

The messages which were used by public health advocates are most important for constitution of public opinion and policies. Emotionally evocative symbols-more than logic-frame the public policy issues for the broad public audience. The industries understand this all too well. For example, advertising and marketing symbolism of the tobacco industry is designed to associate smoking with positive personal values, while its public policy

propaganda is designed to associate smoking with positive public values[9]. Moreover, a tobacco company organized "no smoking" campaign in a country[10]. In fact, the situation is different. A decade ago, a former of one of the campaigns sneered that his company had built its fortune by marketing to "the young, poor, black, and stupid"[11].

Tobacco Companies threw on the market "light" and "ultra light" cigarettes when people began to become conscious about harms of cigarette in 1950-60s. In the following years consumption of the cigarettes like these increased extremely[12]. In recent years "organic", "natural" and "additive-free" cigarettes are increasingly popular, appealing to health-conscious addicted consumers in much the same way as "light" cigarettes did a few decades ago[13]. In fact, tests on some brands indicate that, higher amounts of tar and nicotine than the ones in the "regular" cigarettes are taken to fit the situation, under the smoking-machine, into a "realistic smoking condition"[12,13].

The advocates should overcome all these problems and should form messages that will make the public perceive smoking and something else as a health problem. This is difficult but it can be achieved. In a one-year follow-up study aimed to evaluate the maintenance of the abstinence from smoking among the participants in International "Quit and Win" Campaign 2002 in Turkey, the one month abstinence and one year complete abstinence rate was 73.5 % and 44.7 %[14].

Advocates often develop a media campaign around a core message, which typically includes: Their analysis of a problem, the problem's cause, whom they hold responsible for solving the problem, the proposed solution and the action that they ask others to take in support of the solution.

Some messages may appeal more strongly to specific audience than others. A message developed with a specific audience in mind is called a tailored message. Tailored messages can be developed for voters in specific districts, for politicians, or for other constituent demographics.

After the message is formulated, the second important question is "How do we get them to hear it?". There are a lot of ways to do it. This may be a talk which is face to face or reaching the community by the way of media. While the work goes on, "Is the target audience selected in the correct way?" and "Do the messages reach them?" should be controlled.

7. Making Advocacy in the Media

First of all, advocates should gather information about the operating policies, audience, deadlines, and key personnel of the local media, especially that might be interested in covering their story and, also, note who is writing or reporting about their issue and where.

Basic principles of media advocacy should be flexible, spontaneous, and creative. Advocates should seize the initiative; stay focused on the issues; make sure the media know and trust them; choose best spokesman (especially who is intelligent and merry).

If the media is concerned with the issue, that should be significant, interesting and new; stand out and be "newsworthy." Furthermore, advocates should search continuously for new pegs, angles and hooks for their issue.

For increasing the chance of the issue for media; it should be timely. Advocates should localize the issue (broad national issues may be important but try to use local examples and statistics instead of, or in addition. These may be more interesting for the community), explain how the issue affects real people, accent the human interest angle (personal stories), demonstrate support for their issue by quoting or having someone of prominence in their community or state as a spokesman and always make sure that the sources are credible and the information is correct and consistent with the facts.

Advocates do not have to wait for media to come to them. If they have a new take on their issue, it is worthwhile to call (or write to) a columnist or reporter (or talk show host) and pitch their idea. They get to know who would be likely to do a story covering these issues. They should explain concisely why their issue would make a good story or column right now — why it is interesting, important, and timely.

Frame of press should be positive; negativity and defensiveness make message less appealing and identifiable. Advocates should present issue as pro-safety, pro-health, and pro-freedom from public hazards and death and speak on behalf of the "public," "citizens," and "community," not "supporters of specific action or legislation."

News Releases

News releases are short, clearly written accounts of an event, accomplishment, or report. Ideally, the 5

"W's" and an "H" — who, what, when, where, why, and how — should be covered in the first two paragraphs because this part is the most interesting part for editors.

In a new release, the time should be put on the left, and organizational contacts on the right; using a headline, bold and centered, summarizing the contents of the release briefly so that journalists can decide immediately whether they are interested; make the story factual and accurate; use short words, short sentences, short paragraphs; use active verbs that move the reader forward and it should be no longer than one and a half pages.

Broadcasting facilitates the aim of attaining the target audience. At the first phase, advocates should send a pitch letter to the program's producer introducing their organization, their spokesman and the issues that s/he can discuss, which will interest the given audience. Before the interview, advocates should watch or tape several shows and study them for interviewing style, setting, and degree of audience participation; organize their information; writing a script if necessary to develop a strong lead point; practice giving responses in 30 to 60 seconds "sound bites" that can easily be quoted.

During the interview, the advocate should answer the questions honestly and clearly (if s/he doesn't know, s/he should say so.); use vivid language, examples, and statistics; keep the time frame of the interview in mind in order to ensure that all topics are covered, and select two or three basic points or themes to stress and keep going back to them.

Before the interviewing with press, the advocate should learn as much as s/he can about the interview; such that how long it will be, and whether others are to be interviewed for the same article. During the interview, the advocate should stop to think through the answers carefully; rephrase or clarify statements when necessary; provide background information that will set comments in context, rather than assuming that the reporter can do so and as much as possible and keep the reporter on her/his track. After the interview s/he should ask the reporter to check facts and quotations together[7].

With the support of the EU, the Turkish Ministry of Health has launched a campaign in using mass media, started on October 3, 2007, entitled "Bebeğim sağolsun" (Long Live My Baby) in order to reduce the ratio of maternal and neonatal mortalities. Mobile vehicles would pay visits to particular 15 cities, which were attached specific importance by the Ministry of Health. The cities are: Istanbul, Izmir, Ankara, Kayseri, Mersin, Sanliurfa, Diyarbakir, Siirt, Van, Agri, Kars, Artvin, Erzurum, Mus, Elazig. In the framework of the campaign, the objective was to raise awareness amongst women of 15-49 age group, their spouses, families and next-of-kin about reducing maternal and neonatal mortality ratios[15].

The first step in any website planning should be to determine who the target audience was and what the extend of it is. Its tone should be suitable for the target audience. This should not be forgotten. The web site should be reviewed many times and should be designed in the most appropriate way.

The readers were already in information overload. Consequently, they were unlikely to read everything advocates present, no matter how important it was. So advocates should keep their key points prominent. Also, website should be brief. Unless advocates had a very specific audience, language should be simple, clear, consistent and universal.

The technology level of the pages of the website should be tailored to the needs and desires of the target audience and no video or audio should be run for more than 5 minutes without warning[7].

8. Lobbying

Lobbying is one of the methods which is used by advocates. Lobbying is a group of methods and techniques which will be able to influence public opinion and decision making mechanisms through the lobbyist's or organization's gains[16]. Lobbying organizations or coalitions urge decision makers to take a specific action e.g., cast a vote, adopt a regulation, write an editorial.

Effective social justice lobbyists should identify strong supporters in elected bodies for the organization's objectives and appreciate their own limits[7].

Public decision is a game within which a lot of actors play. There are a lot of actors, a lot of approaches and a lot of gains that are mostly adverse. Every actor wants a final decision that is as close to her/his expectations as possible. So this requires coming to an agreement in an unavoidable way. The final conclusion is an average solution[16].

Lobbyists should know about the legal and illegal processes. They should make all obscure procedures and practices of legislative bodies and government understandable for the people. Lobbyists should listen to others including the opposition to identify possible advantages (Sometimes a good idea or proposal gain a support in unexpected ways.).

Homework should be done very well while visiting a bureaucrat. The meeting should be started as positively as possible. Lobbyists should focus on one issue, keep the presentation short and focused and also know what they want to ask the decision maker and help the decision maker with information and support[7]. Decision makers always want to know more information. Lobbyists have this information; therefore they have the chance to bargain.

Briefly, the first rule of lobbying is the necessity of being ready to present something before taking something. The second, lobbying is communication. , and the third, lobbying is alliance, while the fourth, lobbying is cocktail. The last point is; lobbying is a thing that should be spread to time. So, certainly a strategy is necessary to be successful[16].

9. Conclusion

In an ideal world, governments would always try to act in the best interest of the population, carefully weigh the effects of their policies and actions, and choose those most likely to contribute to the public good. In a more realistic scenario, NGOs and individuals encourage governments to act in the public interest, and plan their work, so as to increase the chances of the government adopting positive policies and programs[6].

Moreover and mostly enforcements of the laws, takes more time than make ing the laws. In most of the countries it has been observed that whereas the laws can change, the people do not change at the same speed. While doing advocacy, a definition for the level of changes should be made.1. At political level; is the existing law or policy appropriate/ adequate for today's context? 2. At application level; can the existing written law or policy be implemented as it is planned? 3. At cultural level; do the people know that they have rights to take what they request from the system and to force them to get solutions[6]?

Resources are restricted so they are used carefully. Therefore, resources have to be used with planning in detail. The key of a successful campaign is an action that sees the overall the situation and plans it. First of all, advocates should assess their particular situation, including the current reality, their sources of power and current capacity, and possible starting points for creating change. They should select achievable targets for getting started, then create an action plan, including how to use their resources, what capacities to build, and which actions, tactics, and tools to use and navigate the little victories, setbacks, compromises, unexpected opportunities, and uncertainties that line the road to the long-term change they want to achieve. As a result, all of these are necessary for a successful campaign[7].

References

1. Oxford Advanced Learners' Dictionary of Current English. New York: Oxford University Press; 1996.
2. Available at: www.seslisozluk.com. Accessed September 12, 2006.
3. Available at: /en.wikipedia.org/wiki/Advocacy. Accessed October 15, 2006.
4. BOND Guidance Notes Series 3 [online]. Available at: www.bond.org.uk/pubs/guidance/2.1howwhyadvocacy.pdf. Accessed October 24, 2006.
5. Available at: www.hyd.org.tr/tr/lnk. Accessed October 14, 2006.
6. Anderson P. Advocacy Training Course Handouts, Barcelona, May, 2006.
7. Anderson P. Advocacy Training Course Handouts. Denmark; February 2006.
8. Yesilay. 2006 Yesilay Haftasi Raporu. Available at: www.yesilay.org.tr/2006_raporu_07.asp+sigara+%C5%9Firketleri+ve+itiraflar%C4%B1&hl=tr&gl=tr&ct=clnk&cd=3. Accessed October 15, 2006.
9. Capturing the Symbols of Debate Smoke Signals. In: The Tobacco Control Media Handbook. Advocacy Institute Washington, DC; 1997. p. 17-31.
10. Available at: www.radikal.com.tr/1998/09/24/ekonomi/mar.html+sigara+kar%C5%9F%C4%B1t%C4%B1+kampanyalar&hl=tr&gl=tr&ct=clnk&cd=6. Accessed October 15, 2006.
11. Washington HA. Burning Love. Big Tobacco takes aim at LGBT youths. American Journal of Public Health 2002; 92(7): 1086-95.
12. Ozkan M. "Light" Sigara - Zararsiz Sigara [online]. Available at: www.toraks.org.tr/sub/sigarasiz/Light_sigara_Metin_Ozkan.pdf. Accessed October 15, 2006.
13. World Health Organization. Tobacco: Deadly in any Form or Disguise. France: WHO Press 2006. p.18-20

[online]. Available at: http://www.who.int/tobacco/communications/events/wntd/2006/Tfi_Rapport.pdf. Accessed October 10, 2006.

14. Erguder T, Soydal T. Birak Kazan 2002, Uluslararasi Sigarayi Birakma Kampanyasi Bir Yillik Degerlendirmesi. Uluslararası Katilimli 3. Sigara veya Saglik Kongresi Ozet Kitabi, 2006. s. 17.
15. Delegation of the European Commission to Turkey. News Archieve, October 10 2007 [online]. Available at: www.avrupa.info.tr/News_Archieve/Eki_2007, Eki_05.html?LanguageID=2. Accessed October 10, 2007.
16. Bovard A. Politikalari Etkileme Sureclerinde Sivil Toplum Kuruluslarinin Rolu. STK Yonetimi Konferans Yaziları no 2. Istanbul Bilgi Universitesi Sivil Toplum Kuruluslari Egitim ve Arastirma Birimi; 2003 [online]. Available at: //stk.bilgi.edu.tr/docs/bovard_stk_2.pdf. Accessed October 15, 2006.

How to manage a European Union Project: from the perspective of a project coordinator

Arzu Uzuner[a]

European Union Projects are a new interest area for the academicians and non-governmental organizations of our country. Many health parameters in our country need investigation. The contribution of the universities and the NGOs will provide support to the Ministry of Health. Provision of numerical data to the health problems, making situation analysis, determination of the problems that need improvement and planning, intervention against them, and the assessment of their effectiveness, can only be performed by using scientific methods and the EU projects are opportunities to provide financial support to realize researches and interventions.

Writing a project

Procedures: For a new writer, the procedures of EU projects seem complicated and this can be a barrier to apply for a project. Learning the rules of the game will help to overcome this obstacle. The writing technique is the most important part of the project.

The aim is the cause that guides to plan the selected study and constitutes the basics of the project. Believing in the aim will help to deal with any obstacle that will be faced during the project.

Methodology, is the main body of the project. The success of the study lies on the strength of its construction and on the prior analysis performed before the writing phase.

The place and the population of the study: The collection of adequate information about the study area and about the socio demographic characteristics of the population living in this area should be completed before writing the project. If this information gathering activity takes place inside and especially at the very beginning of the project, the team will face some troubles such as being treated as foreigners among local population and societies. It is preferable to work in an area that you know the population and this will enable and facilitate the acceptance of the project. Local leaders and officers is are of great importance, for getting acquinted in the field and finding acceptance among local people, because these people are supposed to act as stakeholders during the realization of the project.

Being new in the field would constitute a barrier especially in an intimate subject such as sexual and reproductive health. People would not be willing to talk since the sexuality is still a tabu for them. Women are always more familiar with reproductive health; but men, the other partner of the sex, prefer not to participate in the interactive meetings and the focus groups where they have to share their ideas. The focus groups revealed that men avoided talking in such intimate issues or they tried to generalize it, instead of individualizing. Women were more open hearted; they could easily share the events from their own lives with others. The most difficult attempt in our project was trying to reach couples. It ended with failure. Our team's comments were such that men did not want to talk with their partners on this sort of issues or being with them in places where these issues were being talked. The focus groups' results showed that men did not like to talk about feelings even in family relations.

Timing of the project: Every project has an estimated timetable. The completion of the project at the predicted time is not always easy to realize. In our project we spent considerable time to produce the ICE material. The data gathered from the focus

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groups to make the population analysis did not help much, as was expected. The references were standard and ready to be used for preparing the material at the first month of the project and this would allow us to realize the opening ceremony and to present our project to the public interest which would allow us to be known by the leaders of the population. Workshops are always important activities to share ideas between selected persons for the subject, but it is more timesaving to delegate the work to some people who could handle the subject. It is better to make workshops to gather different ideas and then delegate the work to a person or to a team.

Statistical analysis and writing reports: The presence of a person who would work in the data entry and reporting would also be timesaving. If there is nobody assigned for such a position, other employees of the project should have the ability for the data entry and writing reports. Otherwise all this work should be completed by the co-ordinator him/herself which would be time consuming for the project.

Some permissions must be taken

The activities in need of permission from governmental offices and some legal papers must be prepared at the beginning of the project.

Writing team-realizing team relations: The writing team of the project must run the project or must be in close contact with the running team, especially at the beginning but all along the project. The philosophy and the objectives of the project need to be transferred to the team members.

Realization of the project: A presentation or an opening ceremony at the beginning of the project would be beneficial to enter the field; such an activity would affect positively the partners who are assumed to support you. Otherwise any time you need their help, at every attempt, you will have to present yourself and your project. Brochures and posters will legalize your presence in the field; without them you are left on your own communication skills. Municipalities are usually helpful for the EU projects. It is also important for them to support such population based events. But they are very busy to work together. They provide their help if you do not ask their time. In our project we could not get an appointment from the mayor despite all our efforts, although he was a medical doctor, our colleague. Other teams and departments tried to be helpful in their limits of responsibility.

Patient education-training courses: The project can include some educative activities such as courses, seminars, trainings. The most difficult part of the project was to gather people to inform them, because generally they do not like to attend such activities, they have no time and their priorities are always different. One should remember that adults learn what they need, when they need it; so it is necessary to meet people who really need this information at a critical time when they feel its need. Otherwise the other alternative is to force them to come. They come but they do not stay till the end. Entertaining activities that help much to draw their attention should be selected to transfer any information.

Relation with other EU projects: One project must be in close contact with other EU projects that are going simultaneously in the same area. Connection of the forces creates a synergistic effect; with the support given to each other allows a striking effect on the population. Also, the project members who entered the field before are always more experienced than the others who come next. They are expected to give support to the other projects. At that point, project owner NGOs must be aware of the presence and the activities of the other NGOs and/or their projects.

Project coordinator

The person who will lead the project preferably must be experienced in research projects and should be expected to have a considerable knowledge about the subject of the project and also about research and methodology, to be able to supervise the progress of the project, to give sufficiency for the ICE material and to assess the results. A satisfactory level of English is also requested for writing the project reports.

Project management is the art of human management and the soul of the team must be kept alive during the project. The coordinator is the leader of the team and should know the art of conducting people with good communication skills.

The characteristics that should be inquired for the other workers of the project:

In a project the most important part of financial sources must be spared for the human resources, as qualified personnel do not work unless they are

paid a good salary. The skills basically required for all the workers of the project are communication skills and hard working; and also they are expected to have special information and experience in the project area, which will make the work easier. Project secretary is of great importance. Every project must have at least one secretary. This person is expected to be skilled in excel and word programs because in every project there are a lot of data to enter and letters and reports to write. The secretary can be responsible for all the office work such as the following of the timetable and the legal proceedings and of whole data entry.

Conclusion: As a conclusion, scientific projects should continue to support our health targets. As the parts of a puzzle every project influences health system positively. In the near future Non Governmental Organizations, the academicians, scientists, and project designers will be more experienced in writing and realizing health projects. This will provide an economical alternative to overcome public health problems and to achieve the targets of the health system.

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IARC Summer School in Cancer Epidemiology - Cancer Registration	11 - 15 June 2007	Lyon	France	cor@iarc.fr
IARC Summer School in Cancer Epidemiology - Introduction to Cancer Epidemiology	18 - 29 June 2007	Lyon	France	cor@iarc.fr
Turkish Society of Psychiatry 5.th Phttp://www.globalhealth.org/conference/ological Trauma Meeting	7-9 Dec 2007	İstanbul	Turkey	www.ruhsaltravma.org
1st Women Health Congress	20-22 March 2008	Ankara	Turkey	http://www.ttb.org.tr
35th Annual International Conference on Global Health (Global Health Council 2008 Annual Conference)	27-31 May 2008 DC	Washington,	USA	http://www.globalhealth.org/conference/
American Medical Informatics Association-Spring Congress	28-31 May 2008	Arizona, Phoenix	USA	http://www. amia.org
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