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Contents

From the Editor

Dear readers

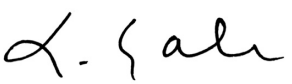
In this issue you will find five original articles which discuss different problems of public health. Kurcar et. al. in their research showed that physicians' smoking status effect their attitudes and practices towards smoking cessation. The practical implication of this information is that physicians' smoking status - sensitive strategies are required to support cessation activities. In another article, Ogur et. al. showed that the seminar type education and brochures may also be used together as an effective tool in changing the knowledge and attitudes of the young people in family planning issue.

Tanir et. al. draw our attention to the traffic noise in their article as one of the important public health problems of the people living in metropoltans. One of the other two original articles is about digit sucking habits of preschool children. Egemen et. al. discuss why digit sucking habit was more prevalent in children from families of lower maternal educational level and poorer economic status. The last original research of this issue undertakes the economic aspects of the health services and discusses the aspects of out-of-pocket health expenditures.

In this issue Asefzadeh et. al. is presenting their exciting experience regarding mentorship program that was applied for the first-year students in Qazvin University of Medical Sciences in Iran. You will also find interesting short reports in this issue; one is about consanguineous marriages and the other is about surveillance of malaria.

As you will find some examples on the Announcements page of the Journal, there will be a number of activities in the year of 2006 regarding the different topics of public health. We hope you enjoy the last issue of the year 2005. We are now very close to meet the New Year. Considering the vast health problems of our country, we will continue doing our best to achieve the protection and development of public health and to decrease inequalities in this area.

Editor



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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.

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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).

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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.

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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.

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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:

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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.

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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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Attitudes and practices of physicians, who have different smoking habits towards smoking cessation counselling in hospitals

Mehmet Ali KURCER[a], Zeynep SIMSEK[a], Gulsen GUNES[b]

Abstract

Introduction: Physicians' adherence to clinical practice indicates barriers to arise from physicians' smoking status on smoking cessation intervention. The aim of this study is to determine if there are any differences in smoking cessation attitudes and practices by individual characteristics of physicians.

Methods: This descriptive study was performed to find attitudes of physicians with different smoking status about counselling their smoking patients in all the hospitals situated at the center of Sanliurfa Province.

Results: Smoking cessation practices did not differ by physicians' gender, working duration, marital status, or title. But some practices differed by their residency, working hospitals and smoking status. Assessing/Assisting and arranging were more often performed by never and occasionally smoking physicians than regular and ex smoking physicians. To get people to quit seemed more difficult for regular smoking physicians compared to occasionally, ex and never smoking physicians. Regular and occasionally smoking physicians less believed that, it made them feel useful to patients compared to ex and never smoking physicians.

Conclusion: Physicians' smoking status -sensitive strategies to support cessation activities are recommended.

Key words: Smoking, cessation, counselling, physician

Introduction

Smoking remains the single most important remediable cause of premature death in the Western world[1]. As in most other countries, smoking is a major public health problem in Turkey because of its high prevalance (57%), and causal relationship to preventable illnesses and death.[2]

Physicians are a special group of people who face most of the smokers during clinical setting. In Turkey, over 120 million consultations are provided in the hospitals every year. Thus, the physician's potential to reduce smoking prevalence is high.[3,4] Furthermore physician-patient relationship contains many opportunities for the physician to motivate and to assist the smoker. In contrary to studies which indicate that physicians may not discuss smoking with their patients as often as might be expected,[5] a recently published review of physicians' adherence to clinical practice indicates different barriers.[6] Previous studies have pointed out, such as too time consuming of smoking cessation, effect of clinical practice guidelines on smoking cessation, the efficacy of physicians' advice, effective smoking cessation techniques, gender of physicians.[7-11] Although there are some studies on smoking cessation intervention according to physicians' smoking status (smoke or not), further studies are needed which involve the difference among daily, occasionally, ex and never smoker physicians. In programmatic terms, if physician's smoking status were separated daily-occasionally instead of smoker, and ex-never instead of non smoker, this separation may be influence their enthusiasm for counselling on smoking cessation of physicians.[12.13]

The American Public Health Service recommends the "5A's approach to treat smokers: (1) Ask every patient their tobacco use status; (2) advise all smokers to quit; (3) assess every smoker's willingness to quit; (4) assist those who are willing to quit with a

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quit plan; (5) arrrange follow-up visit or call for all smokers. Building on this framework, the clinical practice guideline on smoking cessation includes several recommendations for clinicians, smoking cessation specialists, and administrators of health care systems aimed at improving efforts to help smokers quit.[14]

This study aimed to assess smoking cessation attitudes and self-reported performance of the 5A's of smoking cessation practice of the physicians working at Harran University Hospital, Social Security Insurance Hospital and State Hospital, Sanliurfa. The aim of this study is to determine if there are any differences in smoking cessation attittudes and practices by individual characteristics of physicians.

Materials and Methods

Setting, subject and data collection

This descriptive study was carried out on specialists and general practitioners who provide outpatient clinics for adults in all the hospitals situated at the center of Sanliurfa Province. Between the period of April-May 2002, 62 physicians from Harran University Research Hospital, 51 physicians from Sanliurfa State Hospital and 28 physicians from Sanliurfa Social Insurance Institution Hospital were interwieved. The researchers visited the physicians who participated in the study and had to be present in the offices during the investigator's visit where they implemented using face to face interview technique. Thus the overall response rate was 80.5% (141/175).

The questionnaire consisted of two sections: The first section included items about demographic characteristics (age, marital status,) practice characteristics (years as health care provider, medical residency and title) and smoking status of the physicians. For smoking status, questions recommended by World Health Organization were used.[15] The second section asked about physicians smoking cessation practices during the past month and attitudes about efficiency and effectiveness of cessation counselling and their perceived success as a counsellor. In this study, a 5 point Likert-type scale was used ranging from "Strongly Disagree" to "Strongly Agree" to indicate their level of agreement with the statements. Example items are "If patients cannot quit on their own, there is nothing that I can do". A 7- point Likert-type scale was also used ranging from "never" to "always" to indicate their level of agreement with the statements. Example items are "I ask all my patients whether they are smoking or not?" For the smoking cessation practices of the physicians, the indicators of each of the "5A's" recommendations of the American Public Health Service[14] were used.

Traditionally smoking cessation outcome has been viewed as a dicotomy. Smoker and nonsmoker categories have been used almost exclusively to represent physicians' counselling smoking cessation, whereas the present study's clasification was carried out as daily, occasionally, ex and never smokers. On the basis of self reported smoking behavior, the respondents' habits were grouped into four categories: (1) Daily smokers; "those who smoked at least one cigarette a day". (2) Never smokers; "not even a puff". (3) Occasional smokers; "those who smoked less than one cigarette in a day". (4) Ex smokers; "those who used to smoke more than six months".

Analysis

Data entry and statistical analysis were performed using SPSSWIN 10.0 program. Data were presented as means for each likert type question by adding values marked by the respondents. Comparison of means between two groups was done. ANOVA variance analysis was used for more than two groups. A p-value of <0.05 was considered statistically significant for the hypothesis tests.

Results

14.2% of the respondents reported that they always asked their patients if they smoked. Those who always advised their smoker patients to quit were less (22.0%).

Background characteristics:

The number of research assistants were 40 (28.4%), specialists were 62 (44.0%), academic staff were 25 (17.7%) and general practitioners were 14 (9.9%). In the study, 83.6% of the physicians were male and the mean age was 35.2±6.1.

The responses of 141 hospital physicians indicate that 42.4% of male physicians and 34.8% of female physicians were smokers (daily and occasionally) ($p=0.332$). Thirty percent physicians were daily smokers, 12.1% were occasional smokers, 15.6% were ex smokers and 41.8% were never smokers.

Smoking cessation practices

As seen in Table 1, the mean point of asking about tobacco use was 4.11±0.15 and advising to quit was 4.24±0.16. Always assessing the patient's willingness to quit and assisting those who were willing to quit with a quit plan were practiced by 3.5%. Always arranging a follow up visit were practiced by 1.7%. The mean point of assessing/assisting and arranging willingness to quit were 2.00±0.13 and 1.45±0.09 respectively.

As seen in Table 2, smoking cessation practices did not differ by physicians'gender, working duration, marital status, or title (p>0.05). But some practices differed by their age, residency, working hospital and smoking status. Asking and advising were more often performed by 29 year old and younger than 30 years and older physicans. Asking, advising and assessing/assisting were more often performed by physicians of internal medicines than surgical medicines. Assessing/assisting and arranging were more often performed by never and occasionally smoker physicians than regular and ex smoker physicians.

Attitudes about smoking cessation counselling

When the physicians were asked to evaluate their effectiveness in changing their adult patients' behaviour with respect to smoking cessation; 23.4% considered themselves minimally, 45.4% somewhat, 16.3% quite, 10.6% effective, and 4.3% extremely effective. Physicians' perceived self confidence about their skills and knowledge in counselling their patients tobacco use were evaluated and the mean confidence point was determined as 2.82±0.09 where 5 was the highest point (very confident) and 1 was the lowest point (not at all confident).

Smoking cessation attitudes of physicians by smoking status was presented in Table 3. To get people to quit seemed more difficult for regular smoking physicians compared to occasionally, ex and never smoking physicians. Regular and occasionally smoking physicians less believed that made them feel useful to patients compared to ex and never smoking physicians.

Discussion

Physicians have an important role as models for people both in preventing smoking inititation and in promoting smoking cessation. Physician-patient relationship contains many opportunities for the physician to motivate and to assist the smoker.[16] Many studies from different countries reported a higher prevalence of minimal intervention (asking and advising).[13,17,18] In contrary to other studies, in this study it is indicated that physicians did not discuss smoking with their patients as often as might be expected and physicians did not inquire about their patients' smoking behaviour sufficiently in Sanliurfa, Turkey. Furthermore, physicians who assessed their patients' willingness to quit and assisted them by setting a quit date were very few.

Smoking cessation practices did not differ physicians' gender, working duration, marital status and title. But some practices differed by their age, their medical residency, their studying hospital and their smoking status.

Physicians, who were 29 years old and younger were more active in providing smoking cessation interventions with their patients. Similarly Franks et al. shows that younger physicans were more prevention oriented than older physicians.[11] Our study showed that smoking cessation counselling was practiced more by physicians working in the internal medicine departments than in the surgical medicine departments. As in Goldstein's study, physicians in internal medicine departments were most active in providing smoking cessation interventions with their patients.[19] Asking was more often practiced by

Table 1. Percentage of physicians by ranking smoking cessation practices

	N	1[a]	2	3	4	5	6	7[b]	Mean±S.E.
Ask	141	5.7	17.7	22.7	11.3	12.8	15.6	14.2	4.11±0.15
Advise	141	8.5	14.2	21.3	12.8	9.2	12.1	22.0	4.24±016
Assess/assist	141	62.4	12.8	7.8	5.7	5.0	2.8	3.5	2.00±0.13
Arrange	141	80.7	7.9	5.0	2.1	2.1	0.7	1.7	1.45±0.09

(a) 1 indicates never

(b) 7 indicates always

Table 2. Physicians' smoking cessation practices by some background characteristics (mean rankings) (1-7)[a]

Background characteristics	n	Ask	Advise	Assess/Assist	Arrange
Age					
≤29	92	4.37	4.33	1.72	1.47
30-39	28	4.16	4.12	2.37	1.39
≥40	21	3.86	3.72	1.23	1.31
p[c]		0.022	0.014	0.332	0.294
Gender					
Men	118	4.01	4.12	2.00	1.38
Female	23	4.60	4.82	2.00	1.78
p[b]		0.165	0.129	0.982	0.128
Marital Status					
Married	116	4.15	4.29	2.18	1.53
Single	25	3.92	4.00	2.00	1.14
p[b]		0.570	0.512	0.587	0.061
Title					
Research resident	40	4.47	4.27	1.97	1.40
Practitioner	14	4.28	4.07	1.85	1.23
Specialist	60	3.83	4.18	1.90	1.50
Faculty staff mem.	25	4 .48	4.44	2.36	1.48
p[c]		0.054	0.814	0.803	0.636
Residency					
Internal medicines	67	4.85	4.76	2.32	1.59
Surgical medicines	74	3.44	3.77	1.71	1.31
p[b]		0.0001	0.003	0.028	0.147
Years Worked					
≤5	22	4.02	4.12	1.77	1.31
≥6	118	4.57	4.33	2.05	1.42
p[b]		0.535	0.633	0.157	0.228
Hospitals					
Harran University	62	4.56	4.37	2.09	1.40
State	51	3.58	3.94	2.17	1.64
Social Security	28	3.62	3.58	1.50	1.21
p[c]		0.006	0.265	0.803	0.295
Smoking Status					
Regular smoker	47	4.10	4.00	1.68	1.00
Occasionally	17	4.14	4.52	2.05	1.35
Ex smoker	20	3.95	4.45	1.50	1.00
Never smoked	57	4.15	4.28	2.43	1.44
p[c]		0.728	0.911	0.001	0.0001

(a) 1 indicates never, 7 indicates always,

(b) t-test,

(c) ANOVA

Harran University Hospital physicans than State and Social Security hospital physicans. There seemed to be a difference among hospitals and there were many reasons for this difference which needs further investigation. University Hospital physicans may be more concerned with patients' smoking status due to their busy schedule of research studies for which smoking status should be inquired

Table 3. Smoking cessation attitudes of physicians by their smoking status (mean rankings) (1-7)[a]

	Physicians' smoking status				
	Regular smoker	Occasionally smoker	Ex smoker	Never smoker	p
If patients cannot quit on their own, there is nothing that I can do	3.53	2.76	2.89	2.78	0.017
It is difficult for me to get people to quit	3.39	3.29	3.52	3.23	0.812
Counselling for cessation is not an efficient use of my time	2.60	2.43	2.10	2.36	0.615
Cessation counselling improves my relationship with patients	3.17	3.76	3.84	3.71	0.066
Helping with smoking cessation makes me feel useful to patients	3.44	3.82	4.04	4.10	0.032
I find counselling patients about smoking cessation to be frustrating	2.50	2.17	2.10	2.37	0.593

(a) 1 indicates strongly disagree, 5 indicates strongly agree

(b) ANOVA

for every case. On the other hand, public (State and Social Security) hospital physicians may have more concerned diagnosis and treatment than counselling studies. Our results showed that smoking cessation practices were significantly differed according to the smoking status of the physicians. Assessing, assisting and arranging were less often practiced by regular and ex-smokers compared to never and occasionally smoking physicians. This study shows that regular and ex-smoking physicians did not inquire about their patients' smoking behaviour sufficiently. Our findings for never smoking physicians with assessing, assisting and arranging were similar to the study realized by Kawakami in Japan.[13] There was a difference in physicians' smoking status from the mentioned study, occasionally smoking physicians applied assessing, assisting and arranging more than daily and ex-smokers in this study. This discrepancy may have emerged due to the study design. Their study was carried out among smokers or non-smokers. Whereas the present study's classification was carried out as daily, occasionally, ex and never smokers.

Overall physicians have high rates of opinion that "It is difficult for me to get people to quit". This result indicates that major obstacles for counselling smoking cessation were lack of self-confidence about knowledge and skill and pessimism regarding the outcomes of their efforts. This may indicate that there is a need for programme of training physicians on smoking cessation counselling. Most studies have shown that physicians increase their counselling efforts when trained to do so.[13]

Most of all physicians stated that providing smoking cessation counselling for patients was not an efficient use of their time. Smoking cessation lacked of counselling time as stated in the study done by Polyzos in Greece.[20] Some physicians believe that counselling on smoking cessation in routine repetition is frustrating and ineffective.[21] Counselling time is an important problem for physicians in their routine services. Humair et al suggest that mechanisms should be developed to reimburse physicians for the time they spend counselling patients about health promotion.[10]

Some attitudes related to smoking cessation differed among physicians according to their smoking status. Regular smoking physicians more agreed that "if patients cannot quit on their own, there is nothing that I can do" while never and ex smoking physicians more agreed that "helping with smoking cessation makes me feel useful to patients".

In conclusion, the study showed that physicians smoking cessation counselling practices differed by their smoking behaviour. Furthermore the smoking status of physicians influences their enthusiasm for counselling on smoking cessation to their patients against smoking. Therefore, in order to support cessation activities, physicians' smoking status sensitive strategies are recommended.

Acknowledgement

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Knowledge and Attitudes of Young Adults About Family Planning After Different Techniques of Education

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Summary

Objective: To determine the effects of different education techniques in knowledge and attitudes of young male adults, about family planning and contraceptive methods.

Materials and Methods: Enlisted personnel in a military base were educated about family planning by using three different means; 1. Booklet, 2. Brochure and 3. Lecture. Knowledge and attitude changes were determined by using questionnaire form before and after the education. Data were evaluated with Paired-Samples T test and ANOVA test.

Results: All of the education methods caused statistically significant differences in the knowledge levels of participants ($p<0.001$). In groups of brochure and lectures, attitude changes were also determined as statistically significant ($p<0.01$). It was determined that knowledge level change was highest in the brochure distributed group, while highest attitude level change was observed in the seminar group. While the most preferred contraceptive method for the participants was using condom (%75.2), we did not determine anyone who preferred surgical sterilization.

Conclusions: When public education about family planning is aimed, seminar type education programs should be planned and brochures should be distributed to participants. Studies regarding the approaches and attitudes of people towards family planning services, and its effects on the preferences of contraceptive methods, should be planned.

Key words: Family planning, education, young adults.

Introduction

Although man and woman decide to use family planning and contraceptive methods together, approaches and expectations of men, about family planning and contraceptive methods, direct practices about these subjects[1-4]. So it is very important to have men having enough knowledge and getting responsible about family planning [5].

In this study, a research on the knowledge and attitudes of enlisted people in a military service base was made about family planning, and the effects of the education performed, by using educational materials, which were developed together with the University of Johns Hopkins, on the knowledge and attitudes of the participants [6, 7].

Materials and Methods

Study was conducted in a military service base in Ankara in the year of 2004. The universe of the study was 2300 people and it was composed of enlisted personnel. During the study the booklet, brochure and lecture notes of family planning and contraceptive methods which had been developed together with the University of Johns Hopkins were used[6]. Questionnaire form which had been developed for the study composed of 20 questions of knowledge, 9 questions of attitude and several demographic questions. Six of the questions about attitude were Likert type and adapted from a previous study[8]. After the pretest, the questionnaire form was completed and carried out under our supervision simultaneously before starting the educational practice.

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Taking into account of the educational materials, 33.0% of the participants took booklet, 36.9% of them took brochure and the rest (30.1%) was lectured by medical doctors trained as educators. It was considered that brochures and booklets could be carefully studied within two days and at the end of this period all participants were given a questionnaire form (with small changes in the order of items and the order of questions) simultaneously under our supervision. For questions regarding knowledge; the correct answers were scored as five points while wrong answers were not scored. Likert type questions were scored through 1-5, and analyzed apart from knowledge questions. After data was transformed into the computer, SPSS for Windows version 11.0 was used for statistical analyses. Statistical significance was investigated by using Paired-Samples T test and ANOVA (with post hoc) test wherein suitable.

Results

All of the participants answered all of the questions in the questionnaire form. All of the participants were male and mean of their ages was 20.51 ± 1.45. Demographic characteristics of the participants are summarized in Table 1.

When they were investigated for statistical significance; no statistically significant difference was determined between groups, for the answers of knowledge related questions in the questionnaire which was performed before education practices ($p > 0.05$). After education, it was shown that the highest increase was in the group who took brochures (%90.8) ($p < 0.001$). Statistically significant increase in the knowledge levels of other two education groups, ($p<0.001$) was also determined. Mean values of knowledge level points (before and after) and the net point increase are shown in Table 2.

Table 1. Demographic characteristics of the participants (N=230)

Characteristics	%
Age	
20	84.3
21 and above	15.7
Marital status	
Single	88.7
Married	11.3
Education level	
Middle school or below	81.3
High school or above	18.7
Population of birthplace	
< 5,000	51.8
5,000-100,000	24.3
>100,000	23.9
Population of living place	
< 5,000	44.4
5,000-100,000	25.2
>100,000	30.4
Sibling number	
≤ 4	56.5
5-9	38.7
≥ 10	4.8
Education level of father	
Middle school or below	89.6
High school or above	10.4
Education level of mother	
Middle school or below	93.9
High school or above	6.1

Relationship between the various properties of participants and knowledge level scores was investigated. There were no statistically significant relationship between the education levels of father and of mother and knowledge level scores of the participants ($p>0.05$). Also we did not find any statistically significant relationship between the number of brother or sister and knowledge level scores of the participants ($p>0.05$).

Table 2. Scores of participants before and after education (N=230)

Education materials	Before education		After education		t*	p	Increase (%)
	Mean scores	Standard deviation	Mean scores	Standard deviation			
Booklet	47.7	22.6	58.7	27.4	-4,233	<0.001	54,7
Lecture	47.6	19.9	55.5	21.2	-3,438	< 0.01	37,0
Brochure	48.9	23.2	66.0	20.9	-8,128	<0.001	90,8
Total	48.1	22.0	60.4	23.6	-9,023	<0.001	62,8

* Paired-Samples T test

Table 3. Knowledge scores of the participants related to their different properties (N=230)

	Before education		After education		t*	p
	Mean scores	Standard deviation	Mean scores	Standard deviation		
Education level						
Middle school or below	44,0	21,4	56,2	23,8	-7,511	<0.001
High school or above	65,9	14,4	78,7	11,0	-6,895	<0.001
Population of birthplace						
< 5,000	42,3	21,5	54,2	24,6	-5,770	<0.001
5,000-100,000	54,8	20,4	67,6	21,5	-5,015	<0.001
>100,000	54,0	21,4	66,6	19,9	-5,141	<0.001
Population of living place						
< 5,000	39,5	19,9	51,8	24,8	-5,410	<0.001
5,000-100,000	53,3	21,9	66,2	20,6	-5,451	<0.001
>100,000	56,3	20,7	68,2	20,1	-5,082	<0.001

* Paired-samples T test

A statistically significant increase of knowledge levels was determined when we took into account the education level, and population of birthplace and living place of the participants (p<0.001) (Table 3).

In order to determine how education techniques affected the knowledge levels of the participants, relative efficiency (RE), confidence interval, attributable efficiency (AE) and efficiency ratio (ER) were calculated. After preparing a frequency table for the knowledge scores of the participants, the midpoint score value[55] was accepted as successful/unsuccessful limit.

Attributable efficiency shows how much of the success should be attributed to the related method, and when we examine attributable efficiency values, it was shown that brochure method has the highest value (%22.3). The other values are shown in Table 4.

The participants were asked about six sentences related to family planning and their thoughts were recorded from strongly agree to strongly disagree. The situations and means of the answers of the participants are shown in Table 5. Paired-sample T-test was used to investigate the statistical significance between means of the correct answers of pre- and

Table 4. Relative efficiency, attributable efficiency and efficiency ratios for education methods (N=230)

Educational material	Successful (%)*	Unsuccessful (%)	Relative Efficiency (RE) (Confidence 95% interval)	Attributable Efficiency (AE)	Efficiency Ratio (ER)
Booklet					
Before education	47.4	52.6	1.42 (0.32-0.73)	15.8	30.0
After education	63.2	36.8			
Lecture					
Before education	43.5	56.5	1.44 (0.28-0.71)	17.4	30.7
After education	60.9	39.1			
Brochure					
Before education	51.8	48.2	1.86 (0.17-0.58)	22.3	46.0
After education	74.1	25.9			

* The percent of the participants who get 55 points or more

Table 5. Likert type attitude items and responses (mean values) (N=230)

Item / Question	Before education	After education	t*	p
1. The whole idea of birth control is embarrassing to me.	2,99	3,18	1,65	>0,05
2. If I needed to go to a doctor or clinic for birth control information, I would feel comfortable about it.	2,35	1,90	4,44	<0,001
3. I think it is very important to use birth control after marriage until you have decided to start a family	2,56	2,01	5,02	<0,001
4. I would not have sexual intercourse without using birth control.	3,06	2,84	1,82	>0,05
5. I would have sexual intercourse without birth control, if my partner wanted me to.	3,75	3,42	-2,94	<0,01
6. Sometimes when a birth control method is not available, I believe you just have to take a chance and hope for good luck to avoid causing a pregnancy.	2,03	2,30	2,69	<0,01
Family planning scale score	2.81	2.59	4.84	<0.001

* Paired-samples T test

Item scales: 1= strongly agree, 2= agree, 3= neither agree nor disagree, 4= disagree, 5= strongly disagree

post-education. Taking into account all of the answers it was determined that the difference recorded after education was significantly important ($p<0.001$). After education, the percentage of participants who agreed to use contraceptive methods and to apply to related services for family planning consultation was significantly increased ($p<0.001$). Although a statistically significant difference was determined after education ($p<0.01$), most of the participants expressed that they could intercourse without using any contraceptive method if their partner wanted they behave so; also most of them prefered their partners to decide whether they use contraceptive method or not.

When the Likert type questions and their answers were investigated, it was shown that the greatest difference was achieved in the lecture group (-13.7%) ($p<0.01$). There were no statistically significant difference in the book delivered group ($p>0.05$) (Table 6).

Other questions which were asked to participants were their preferences about having babies (number and gender), their thoughts about using contraceptive methods for married couples, and the effect of condom on sexual pleasure. While 27.1% of the participants thought that number and gender of the babies were not important, this ratio decreased to 18.3% after education. The percent of the participants who were thinking that married couples should or may use contraceptive methods was 62.1 at the beginning of the study, whereas this value increased to 86.5% after education. While 66.5% of the participants were thinking that condom may affect sexual pleasure, this percent decreased to 52.6% after education. For all of these three questions no statistically significant difference was determined between pre and post education values ($p>0.05$).

Participants were asked "What is your main source of knowledge about family planning?". The top knowledge sources were media (newspapers, journals, radio and television) (26.7%), parents (25.1%), school (21.3%), health personnel (10.5%) and other sources (friends, courses etc.) (15.5%).

Table 6. Mean values for Likert scores of the participants for education materials (N=230)

Education material	Before education		After education		t[a]	p	Difference (%)
	Mean scores	Standard deviation	Mean scores	Standard deviation			
Booklet	2,81	0,69	2,69	0,57	1.455	>0.05	-4.3
Lecture	2,85	0,62	2,46	0,58	4.224	<0.001	-13.7[b]
Brochure	2,79	0,64	2,60	0,69	2.718	<0.01	-6.8
Total	2,81	0,65	2,59	0,62	4.849	<0.001	-7.8[b]

a Paired-Samples T test

b Statistically significant difference ($p<0.01$)

For the question of "Which contraceptive method do you prefer for yourself or your partner?". 54.3% of the participants said that they preferred condom, and this value increased to 75.2% after education. After education we determined decreases in preferences of rhythm and coitus interrupt methods, 51.9% and 65.5% respectively. There was no one who preferred surgical sterilization.

For the question of "What do you thing about the contraceptive pills?" 43.9% of the participants answered that they have no significant harmful effect, while 37.4% of them said that contraceptive pills have many and, frequently shown side effects, before the education. After education these values decreased to 38.7% and 20.4% respectively.

Discussion

Family planning education activities generally were focused on females. But in our culture generally men are predominant in decisions and at least it is a well known fact that it would be more effective to educate partners together than educating females alone[4, 5, 7, 9-13].

The people who constituted the target of the study were young adult males who were mostly single (88.7%) and between 20-24 years old (96.9%) (Table 1). The average age of marriage is 26.3 in Turkey, and it could be said that they would marry in a few years period; so it was considered that this group needed education about family planning [6, 14].

The period between education and questionnaire form application is 2 days. One could think that this period is short, but we performed this study in order to select the education method, and because of limited time availability of the enlisted personnel together we could not perform a later evaluation. And we also accept that we need to determine long term effects of education as mentioned before[15].

As shown in Table 3, the means of knowledge level scores of the participants whose education level were lower and population of birthplace or living place is smaller than 5000 are smaller than the other groups. But there were no statistically significant difference for knowledge and attitude levels between groups. And this shows that constituted groups were homogenous.

Taking into consideration the current cultural structure of the country, it was asked "Is it suitable to use contraceptive methods for the families which do not want to have babies?". After the education the ratio increased to 86.5%, while this ratio was 68.8% in a similar study [6]. The ratio of those who thought that it was not applicable decreased to 3.9% from 10.9%. One of the aims of the educational activities about family planning is to constitute request for family planning consultation services, and after the education we determined an increase of 39.3% in participants who thought using contraceptive methods was acceptable; so we consider this aim was achieved. But educational activities should be continued in order to widespread this affirmative effect.

Although in similar studies the participants are asked generally their preferred contraceptive method, we asked their or their partners' preferred method, because of limited possibility for sexual intercourse of the participants during duty and for most of them being single. The ratio of those who preferred condom was quite high (54.3% and 75.2% for pre and post education respectively). Emphasizing condom as a protective method for sexually transmitted diseases other than a classical contraceptive method in education materials might be effective on the increase of condom preferences. In a similar study performed in US Navy the condom preferring ratio was determined as 46.8%[8]. It was also observed that surgical contraceptive methods like tubal ligation or vasectomy was preferred in 10.7% of the participants in the current study while there was no one who preferred these methods in our research[8]. This situation seems to originate from cultural and social differences of these countries. Some of the participants declared that they did not and would not use any contraceptive methods (4.8 and 3.5 respectively before and after education), this may result because of their health problems or cultural beliefs. A significant portion of the participants (32.2%) preferred natural contraceptive methods (like rhythm and coitus interrupt methods). But as educational activities and family planning services increase, it could be hoped that modern methods would be used more commonly.

More than half of the applicants marked answer "yes" to "does using condom effect the pleasure during the sexual intercourse?" question both before and after education. Using this question in future studies with the inclusion of other contraceptive methods, can help to understand the persons' attitudes about family planning better.

At the end of the training period, 20.4 % of applicants believe oral contraceptives can be harmful and

only 4.3 of them prefer to use oral contraceptives as a family planning method.

Percent of oral contraceptives preferance among male soldiers was found as 32.7% in the American Navy Forces. Condom can be accessed easily but pills and other contraceptive methods need professional medical support to use and access. This can be the explanation of this difference.

The methods we used to prepare questions, regarding to knowledge level of family planning are generally related definitions of family planning, modern birth control methods and its usage. The highest increase of knowledge level after education was encountered from the brochure given group (90.8%). Lectures (classroom lessons) appeared a method which caused the lowest knowledge increment, in spite of the fact that all issues which are present in books and brochures were mentioned in classroom lessons and discussion part, was available at the end of all classes (37.0%). All books, like brochures distributed to participants are also printed on glossy paper and have colored pictures and have much more data than brochures; whereas, the knowledge increment in book distributed group appeared as 54.7%. Its small size which makes the brochures' portability easier, thus giving the opportunity to read in spare time and little words on pages leading to easy reading, may affect the high success ratio of the brochure distributed group. Relatively large size of books do not permit carrying in pockets, thus books may be read only in planned sessions and special places. So, documents which will be used for health education should be prepared small in size in order to fit pockets or wallets.

"Attributable efficiency" is a widely used parameter to show the efficacy of used education methods on "interference" research field[16]. To calculate this criterion, we grouped the participants' scores as successful and unsuccessful. Scores taken from grouping are arranged from little to big and the score which fit to 50% was accepted as the edge of success and this number was almost 55. Attributable efficiency was greatest among brochure delivered group (22.3). Attributable efficiency related to lecture type education was much more than booklet delivered group.

Attitudes of participants about family planning in six different items/situations was tried to determine. Different results were obtained for some of the items when we compared to the reference study[8]. For example, in our study participants declared no idea about the item of "The whole idea of birth control is embarrassing to me", and there was no difference after education, but the study performed in the US Navy participants stated that they were comfortable about talking of family planning[8]. Our participants stated that they could go to the services or clinics about family planning in a comfortable manner, and it should be considered that this situation is a big success for Turkey where family planning education activities started at 1980's and widely applied in 1990's[17]. The mean value for this item (1.90) is better than mean values of US Navy (2.28)[8]. The other attitude related item was "Sometimes when a birth control method is not available, I believe you just have to take a chance and hope for good luck to avoid causing a pregnancy" and almost all of the participants checked the items of "strongly agree" or "agree"; so it could be stated that men do not perceive involuntary pregnancy as a risk. Also it could be emphasized that involuntary pregnancies as a risk.

When we compared the alterations in attitudes related to education methods, the greatest alterations were observed in the lecture group (-13.7%) ($p < 0.001$). Also statistically significant difference was determined in the brochure delivered group (-6.8%) ($p<0.01$).

As a result, if someone aims to change knowledge level and attitudes of population on family planning education, they need to give lecture type of education and these activities must be supported by delivering brochures.

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The Effect of Highway Traffic on the Noise Pollution in Adana Province, Turkey

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Abstract

Noise pollution, which is the most widespread among other types of pollution in developed countries, is regarded as the symbol of the general lack of quality in individual and social life. Noise, as a social health problem has potential negative effects on people, some of which are insomnia, anger, carelessness and stress.

Our research took place between the dates 20 April 2001-30 November 2001, on the avenues and points that were appropriate to the definition of the area of dwelling in a city centre. Measurements were made with a noise measurement device of the Brüel & Kjaer Type 2238, for each Fleq value, automatically, by waiting for 10 minutes and then evaluating.

Over all the dwelling regions, it was determined that noise level was over the consented maximum noise level (based on the Noise Controlling Instructions), Fleq:70 dBA; for industrial regions and highways on which heavy vehicles travelled. In the city centre, in the morning (7:00-9:00) we have never determined a level under maximum limit level. The determined maximum noise level for Seyhan district was Fleq:82.7 dBA and for Yuregir district Fleq:82.3 dBA.

When the sources of noise were examined, it was seen that the most important noise source was the E-5 highway where the noise level was higher than the highest limit levels, affecting people's health.

We viewed that this finding is either 1) a result of the increase in the number of vehicles parallel to the migrations to Adana city, and the fact that the existing highways cannot supply the demand or 2) a result of the inappropriate behaviors of the drivers who are lacking of education.

Key Words: Noise, highway traffic, environment, health

Introduction

During the process of urbanization, and reaching nowadays, crowded cities, throughout the evolution of civilization, increasing population and industrialization have brought problems that are hard to solve. As a result of industrialization that began to develop in the beginning of 20th century, while the sound of industrial machines was being consented as a symbol of power, development and a better life, nowadays it is defined as one of the negative factors of development. One of the most important among those negative factors is noise. During the production, usage and other activities of developing production technologies, noise is also constituted except production and waste, peculiar to activity and this situation causes noise to become the most intensive factor of environmental pollution.[1,2]

As the most widespread kind of pollution in the developed countries, noise is regarded as a sign of a decrease in the quality of life and in the Noise Controlling Instructions published in 1986, it is defined as "sound spectrum that has a structure at random, unwanted voice".[3,4] Nowadays, one of the most important problems of environmental health is noise which threatens people's health.

Loss of hearing, insomnia, anger, aprosexia and stress caused by noise pollution, effect people's lives seriously. Especially, loss of hearing caused by noise is a health problem which is impossible to be cured by either medical or surgical methods. For this reason, it's obvious that noise is a social health

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Table 1. Maximum noise levels permitted for provinces on regional basis*

Basic criteria	
Definition of the region	Leq : 35 dBA-45 dBA
Region I: Housing area out of the city	0 (Away from traffic)
Region II: Housing around the city	+5
City housing area, 100 meters away from the traffic flow	+10
City housing area, main roads, workplaces (60 m. Away from traffic flow)	+15
Region III: City center housing area, main roads, business places (20 meters away from traffic flow)	+15
Region IV: Industrial area or main roads used by heavy load vehicles and coaches	+25
Time of the day	
Daytime (06.00- 19.00)	0
Evening (19.00- 22.00)	-5
Night (22.00- 06.00)	-10
Note: The basic criteria for the areas sensitive to the noise and the future planning is 35dBA.	

* NCI: Noise Controlling Instructions= Gürültü Kontrol Yönetmeliği[4]

problem where its effects can be prevented with necessary protective precautions.[5-8]

Our study is planned with the aim of determining the dimensions of highway traffic noise in one of the big cities of Turkey, the most important source of the noise pollution, and determining the precautions to be taken.

Materials and Methods

The research took place on 62 avenues (52 of which were in Seyhan district) and on 270 points to determine highway traffic noise, in the borders of municipality in Seyhan and Yüregir districts and in the points where there were traffic jams. On these points, noise measurement was done by sorting out Fleq (Equivalent Noise Level), FL Max (Maximum Noise Level), and FL Min (Minimum Noise Level). The Leq here is the noise measurement scale of noise energy and noise pressures which display continuity in a given period, in the form of dBA unit.

Those measurements were observed between the dates 20 April 2001-30 November 2001 on the avenues and points that were appropriate to the definition of the dwelling area in the city centre defined in the Noise Controlling Instructions. Measurements were taken by Brüel Kjaer Type 2238 Sound Measuring Instrument and by waiting 10 minutes per each Fleq level. During the measurements, the device automatically provided the mean value of measurement on 10 minutes basis. Measured noise levels were repeated during the day, to determine a change in the noise level in the morning between 7:00-9:00 and in the evening between 17:00-19:00 when traffic was highly dense. The evaluation and interpretation of the measurements were done by utilizing the designated levels in the Noise Controlling Instructions (Table 1). We used the traffic control tables of 2001 that were obtained from the Adana Police Headquarters Traffic Official Registration and Control Branch Office Directorship, to determine the increase in the number of vehicles due to years.[9]

Results

According to the information obtained from the Adana Police Headquarters Traffic Official Registration and Control Branch Office Directorship, when the registered motor vehicles in 1990 were 103189, this number increased to 286359 in 2001 (Table 2).[9] Because of the increased density of traffic between the years 1990 and 2001, noise showed a 3 DBA increase throughout the city.

When the increase in the number of motor vehicles between 1990-1994 was examined, it was seen that automobile was the most increased kind of vehicle by 154.6%. Motorcycle takes the second place, by 67.9%. It was determined that, when the number of automobiles in 1990 was 37088, it was 94453 in 1994 and when the number of motorcycles was 36531 in 1990, it was 61350 in 1994. If we examine the years from 1994 to 2001, the most increased kind of vehicle is panel trucks by 143.2% and automobile takes the second place by 45.8%. Between these years, the number of panel trucks has increased from 10704 to 26033; whereas the number of

Table 2. The total number of motor vehicle in Adana in 2001

Vehicle kind	Official (Number)	Personal (Number)	Commercial (Number)	Total
Motorcycle	919	60806	98	61823
Automobile	1179	132276	4279	137734
Minibus	340	3020	4629	7989
Bus	187	324	2074	2585
Paneltruck	924	24603	506	26033
Truck	1039	2889	8986	12714
Tractor	127	35059	27	35213
Wrecker	19	112	156	287
Private -vehicle	153	20	0	173
Tanker	29	1	819	849
Jeep	151	589	277	1017

automobiles has increased from 94453 to 137734, and there has been no serious increase in the number of motorcycles.[9]

Discussion

When the noise levels that we found in our study were compared to the limit levels consented by the Noise Controlling Instructions between 6:00-19:00 in cities, it was determined that in all dwelling regions, industrial regions and the regions of heavy vehicle highways, all the levels were higher than the consented maximum level Fleq:70 dB).[4,10]

In the city centre in the morning (7:00-9:00), nearly no point with a level under maximum limit level was determined. The highest noise level in Seyhan district was determined on Atilla Altıkat Bridge and the road in front of Seyhan Hotel by Fleq:82.7 dBA and in Yüregir district on Police School Crossroad by Fleq:82.3 dBA. These levels were in harmony with the traffic sourced highest noise level determined in İzmit with 80-85 dBA[9]. In a research in 1995 in our city, the determined traffic sourced noise levels were approximately 65-86 dBA and the levels that we found in results were harmonious.[11,12]

When the highway noise sources were examined, it was seen that the most important noise source was E-5 highway and also it was seen that there were important differences between the north and the south sides of E-5 highway.

In the region that is called the new city centre, there are lots of wide boulevards and avenues; however in the region on the south side of E-5 highway, called the old city centre, there are small avenues. The old city centre, with 74.3-81.8 dBA, is noisier compared to new city centre with 72.6-79.8 dBA. The reason for the high condition of noise in the old city centre is this region's being a shopping and a trade centre and the avenues' being insufficient and narrow.

In the Adana city centre, the increasing population because of the migrations from the vicinity regions of Adana to city centre and the insufficient urban infrastructure coming along with the migration caused the highway transportation noise to be the most important kind of noise pollution. Among the transportation noises, highway traffic noise is the most significant contributing source of environmental noise. The main reason for this is the increasing number of motor vehicles, failure to fulfill the obligation of periodic care of vehicles, insufficiency of the roads' inappropriateness to standards and the lack of education for the drivers' improper behaviors.

Conclusions

To decrease or stop the level of the highway noise in the city, the precautions recommended are as follows:

1- To focus on mass transportation (such as metro and bus) rather than minibuses for transportation inside the city,
2- In order to provide the fast flow of traffic inside the city in future, to reorganize bus stops, traffic lights and routes.
3- To build the necessary crosswalks for pedestrians and passageways for vehicles,
4- To provide the building of protective shields throughout the roads wherever needed to decrease the effect of the highway noise and air pollution,

5- To cultivate plants along the streets to prevent the noise pollution,
6- To perform strict controls on people not obeying traffic rules,
7- To make the public conscious about noise by using various press and publication agencies and to observe these precautions continuously.

We believe that, after those precautions are taken, public health of our city will be effected less from highway vehicles noise and air pollution.[2,8,13,14]

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Frequency of Digit Sucking Habit and Associated Factors in Preschool Children

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Abstract

Digit sucking is the most prevalent oral habit. Malocclusion, high arched hard palate, periodontal diseases, oropharyngeal and gastrointestinal system infection and parasitic diseases are reported to be more common in children who have digit sucking habit. The aim of this study was to clarify the frequency of digit sucking habit in 3-6 year old children who attend day-care centers and the factors associated with this frequency, thus evaluating this undesired habit.

This study was conducted with 1666 of 1780 children who attended day-care centers and their parents, who were interviewed about the presence of a digit sucking habit and the associated factors that might influence the frequency of this habit. Factors investigated included duration of exclusive breastfeeding, pacifier use, presence of any sleep disorders, socio-economic characteristic of parents, and family type.

The sample included 903 boys (54.2%) and 763 (45.8%) girls whose mean ages were 61.9 ± 11.6 and 61.4 ± 11.9 months respectively. In all, 9 percent of children aged 3-6 years had a history of past or current digit sucking. These included 4.8 percent of boys and 7.1 percent of girls who had sucked their digits at one time during their life and 2.9 percent of boys and 3.4 percent of girls who still sucked their digits. Digit sucking habit was significantly increased in children whose family was poor or whose mothers had a lower educational level, as well as in children who had a sleep disorder. Children who had used a pacifier were less likely to have a history of digit sucking.

Frequency of digit sucking which is an undesired oral habit with adverse health effects is significantly lessened by maternal education, pacifier use and absence of sleep disorders. Therefore, education of families about adverse effects of this habit and proper assessment of sleep disorders are essential in prevention and treatment.

Key words: Digit sucking habit, oral habits, children

Introduction

Digit sucking is the most prevalent type of undesired oral habit observed in childhood[1]. Previous studies have shown that 80% of children have a history of a digit sucking behaviour during the first 36 months of age[2]. This habit is frequently misinterpreted as a normal behavior of this age group. However, like all other oral habits, it may be hazardous to health if prolonged, because previous studies in different countries as well as in Turkey have demonstrated that malocclusion, high arched hard palate, periodontal diseases, oropharyngeal and gastrointestinal system infections are more commonly encountered in children who show digit sucking habit[1,3-10]. Apart from these diseases, mouth and digit deformities and dystrophic calcification of the digit have been observed in children who display a prolonged digit sucking habit[9-12]. Besides its direct complications, prolonged digit sucking habit has been observed to exert indirect effects due to the early cessation of breast feeding[6]. Therefore, an attempt to prevent and treat digit sucking habit in children may decrease childhood morbidity. For this purpose, it is essential to determine the frequency of digit sucking as well as the factors influencing its frequency. However, information about this issue

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from our country and region is unsatisfactory. The aim of this study was to increase knowledge about the issue, by determining the frequency of digit sucking habit in 3-6 year old children who attend day-care centers and the associated factors.

Materials and Methods

Subjects

This study was conducted on all the 1780 children who attended day-care centers in Bornova region of İzmir, the third largest city in Turkey, located in the west of the country. Data were collected between September 2002 and September 2003. Parents were asked to provide information about their children; however 114 mothers refused to participate in the study. The final sample included 1666 children.

Questionnaire for Sucking Habits and Associated Factors

The parents' questionnaire included questions about the presence of a digit sucking habit and the associated factors which may influence the frequency of this habit. These included information about the duration of exclusive breastfeeding and pacifier use, as well as presence of any sleep disorders including difficulty for falling asleep and night terrors. Socioeconomic characteristic of parents including type and economical status of the family as well as the maternal education and occupation were recorded. Family type was classified as small if only parents lived with children, wide if other relatives lived with the family, or separated if the parents were divorced. Economic status of the family was classified as good, moderate and poor based on the evaluation of the day-care staff and mother.

Statistics

Results were presented as mean ± SD. Statistical analysis was performed by SPSS 11.0 version. Pearson's Chi square test was used to compare the characteristics of the children who had a digit sucking habit with the ones who did not and p values below 0.05 were considered statistically significant.

Results

Subjects

The study included 903 boys (54.2%) and 763 (45.8%) girls whose mean ages were 61.9 ± 11.7 and 61.5 ± 11.9 months respectively. Ages of the study group ranged between 1 and 128 months (mean ± SD 61.7± 11.8 months).

Sucking Habits and Associated Factors

Table 1 demonstrates the age and sex characteristics of the study population grouped according to the presence of digit sucking habit. Among all children, 9% had a history of sucking. Among these, 4.8% of boys and 7.1% of girls had sucked their digits at one time of their lives, while 2.9% of boys and 3.4% of girls still sucked their digits. While digit sucking was not substantially different by sex, it was reported more frequently among younger children than among older children. Digit sucking habit was actively present in 6.4% of the children who were less than 49 months the old, 2.2% of the children between 49 and 60 months old and 2.8% of the children above 60 months old (p= 0.026).

Table 2 demonstrates the childrens' and their mothers' characteristics, which were assessed as the possible risk factors for the habit of digit sucking.

Table 1. Digit sucking behavior according to age and sex in preschool children

	Never sucked		Used to suck		Still sucking		Total		p
	n	%	n	%	n	%	n	%	
Age group (mounths)									
36-48	175	86.6	14	6.9	13	6.5	202	12.1	0.026
49-60	293	93.613	4.2	7	2.2	313	18.8		
61 and above	1049	91.1	706.1	32	2.8	1151	69.1		
Gender									
Male	834	92.4	43	4.8	26	2.8	903	54.2	0.103
Female	683	89.5	54	7.1	26	3.4	763	45.8	
Total	1517	91.1*	97	5.8*	52	3.1*	1666	100.0	

* Column percent

Table 2. Frequency of digit sucking behavior among preschool children and the influence of some sociodemographic characteristics on this frequency

Characteristic		Digit sucking (+)		Digit sucking (-)		Total	p
		n	%	n	%		
Sex	Male	70	7.8	833	92.2	903	0.052
	Female	80	10.5	683	89.5	763	
Birth	Vaginal delivery	85	10.2	751	89.8	836	0.096
	Ceserean section	65	7.8	765	92.2	830	
Maternal education	Less primary	5	20.8	19	79.2	24	0.015
	Primary	51	11.2	405	88.8	456	
	Secondary and ↑	94	7.9	1092	92.1	1186	
Maternal Occupation	Housewife	75	9.0	758	91.0	833	1
	Working	75	9.0	758	91.0	833	
Duration of exclusive breastfeeding	Never	42	8.7	439	91.3	481	0.931
	First 4 month of life	50	8.9	514	91.1	564	
	>4 months of life	58	9.3	563	90.7	621	
Pacifier	Used	61	6.9	822	93.1	883	0.002
	Never used	89	11.4	694	88.6	783	
Sleep disorder	Present	66	11.1	527	88.9	593	0.024
	Absent	84	7.8	989	92.2	1073	
Order of birth among siblings	First child	102	9.2	1001	90.8	1103	0.813
	Second child	40	8.3	441	91.7	481	
	Third child or more	8	9.8	74	90.2	82	
Type of family	Small	137	9.1	1368	90.9	1505	0.508
	Wide	6	6.1	92	93.9	98	
	Separated	7	11.1	56	88.9	63	
Familial economic status	Good	39	7.7	467	92.3	506	0.016
	Moderate	103	9.2	1020	90.8	1123	
	Bad	8	21.6	29	78.4	37	
Day-care of the child	By the mother	83	9.4	803	90.6	886	0.580
	By someone other than the mother	67	8.6	713	91.4	780	

Children whose mothers had a lower educational level were more likely to have a digit sucking habit, but mother's job was not found to be significantly different among the children who did and who did not have a digit sucking habit ($p>0.05$). The characteristics of the family as well as the family type were not significantly different between the subjects with and without this habit ($p>0.05$). On the other hand, digit sucking habit was significantly more common in children whose family had a lower economic status and in children who had a sleep disorder. Mean duration of exclusive breast feeding in children who had a digit sucking habit and who did not, was not statistically different from each other (1.23 ± 0.86 months and 1.22 ± 0.86 months respectively) ($p>0.05$).

Discussion

This study investigated the frequency of digit sucking, one of the oral habits, among children aged 36-60 months. Digit sucking which is the most prevalent oral habit of childhood leads to many complications if prolonged[1,3-10]. Therefore, it is essential to develop an approach to prevention. This is possible through adequate analysis of the problem in a community and through knowledge of the factors influencing the frequency. This will lead to detection and treatment of the habit preventing the complications of the prolongation.

Oral habits show different characteristics according to the age of children. A previous study reported that digit sucking, pencil biting, tongue thrust are more prevalent between ages 3 and 6 years. Mouth

breathing and bruxism were reported to be more significant between ages 7 and 12 years while lip/cheek biting and nail biting were more frequent between ages 3 and 16 years. Not only age groups but also sex of the child may affect the type of oral habit acquired. Digit sucking, tongue thrust, mouth breathing and bruxism were reported to be more prevalent among the boys whereas lip/cheek biting, nail biting and pencil biting among girls[10].

It was found that 5.8 percent of children had a digit sucking habit at one time of their lives while 3.1 percent still had it. Frequency of this habit was found to be higher in girls (10.5% vs 7.6%), however the difference was not statistically significant. However, digit sucking varied by age, with the youngest age group reporting the highest current sucking. Various studies have found the frequency of digit sucking habit to differ between different age groups. Prolonged digit sucking habit which is described as continuation of digit sucking habit beyond 36 months of age has been detected in 20 percent of children in the USA during 2000, and in 10 percent of children in Saudi Arabia[2,13]. One prospective study of digit sucking habit found that 36.3 percent of children continued digit sucking beyond 15-18 months of age[14]. In another study, the frequency among children aged 7-11 years age was detected to be 5.9-13.6 percent[15]. The most important reason for these differences was thought to be the change in the regional characteristics of child bearing as well as in the interpretation of finger sucking in different age groups. Infants, especially during the oral period, take their fingers into their mouths like everything else and suck their digits as a reflex. It was estimated that 80 percent of children aged 0-36 months age sucked their digits[2]. However the accepted age limit for pathological digit sucking differs in various research, though digit sucking needs to be avoided at every age due to its adverse effects on health and due to the risk of prolongation.

In this study, digit sucking habit was more prevalent in children from families of lower maternal educational level and poorer economic status when compared to children from families of higher educational level and better economic status. These associations might be attributed to differential distribution of knowledge about the health hazards of this habit. It may be that more frequent contact of wealthier families with health care providers allows for opportunities to educate parents, identify problems such as sleep disorders, and offer preventive and curative measures.

In this study digit sucking habit was more prevalent among children with sleep disorders when compared to the ones without sleep disorders. Perhaps parents tolerate digit sucking to ease sleeping. Studies about the association of digit and pacifier sucking habits with emotional stress and sleep disorders have reported conflicting results. Research evaluating association of digit sucking and emotional stress as measured by urinary catecholamines failed to demonstrate a significant association, whereas another study revealed a strong association between urinary catecholamines and bruxism[11,16].

Similarly, the higher frequency of digit sucking habit among children who did not use pacifiers may be attributed to the need to satisfy the desire to suck by replacing the pacifier with a digit. Pacifier sucking has been demonstrated to shorten the duration of breastfeeding in a previous study[17]. Since a pacifier can be removed from the child's environment but a finger cannot be removed, one approach to long-term prevention of digit sucking may be to encourage parents to introduce a pacifier when their babies begin to suck their fingers.

The previously reported relationship between digit sucking and duration of exclusive breast feeding was not confirmed in this study.

In conclusion, digit sucking is an unwanted oral habit and its frequency is significantly influenced by maternal education, pacifier use and presence of sleep disorders. Therefore, education of the families and interfering at an early age is essential to prevent prolongation which has adverse effects.

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The healthcare expenditure of individuals presenting at some primary healthcare institutions in Ankara

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Abstract

This study was carried out by interviewing 3814 individuals over 18 years of age presenting at 6 primary care health institutions in Ankara between May 15 and June 15, 2003. The aim was to determine the health expenditure of the individuals within the last month and its components.

The per capita annual health expenditure was calculated as 488 million TL (USD 345) and the per capita out-of-pocket spending as 167 million TL (USD 118). The health expenditures were higher for those going to private hospitals or secondary healthcare institutions. Drug expenditures made up 40.5% of the total health expenditures while catastrophic health expenditures made up 6.8%. Logistic regression analysis of factors influencing out-of-pocket health expenditures revealed that higher income groups had less risk of spending out of pocket (OR: 0.844), while the risk was greater in private health institutions (OR: 3.414) and for those without social security (OR: 6.208).

In light of the data related to the health economy produced by the study, it is reasonable to suggest structuring health services on the base of primary care and in a public manner, increasing rational drug use and expanding health insurance systems to include those from the lower income groups.

Key Words: Primary Health Care Institutions, health expenditures.

Introduction

An expenditure is the amount in currency of the cash paid, assets transferred, the debt incurred or the services provided in monetary terms by individuals or institutions for any reason. Illnesses affect financial resources in two ways as direct and indirect costs. Direct costs include the health expenditures to prevent, diagnose and treat the diseases while indirect costs are costs related to the decreased lifespan, loss of productivity, early retirement or early death due to the disease[1]. The types of healthcare expenditures are "health insurance expenditure" by social or private health insurance providers, "out-of-pocket health expenditure" (or direct health expenditures) by the individuals and the "combined health expenditures" by both the insurance provider and the individual.

Turkey currently has a combined healthcare financing system including the contributions of public offices and institutions and of social insurance institutions such as the Retirement Fund, the Social Security Institution, Self-Employed System and the Green Card combined with private health insurance. The social security systems in Turkey do not cover all the population in practice. Financial difficulties and huge demand lead to some inadequacies and problems with the healthcare provided by public healthcare institutions, causing an increased number of individuals to present at private healthcare institutions and increasing out-of-pocket healthcare expenditure to cover the whole process or at least part of it[2].

According to 2000 data, the public healthcare expenses make up 3.6% of the national income in Turkey while private healthcare expenditure makes up 1.4%[3]. Ministry of Health data show that the Ministry of Health's budget makes up 0.85% of the gross national product. The percentage of the Ministry of Health budget within the government's budget has decreased from 5.27% in 1960 to 2.40% in 2002[4].

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Worldwide, public health expenditures make up 8.0% of the national income in Germany, 5.9% in England, 5.8% in the U.S.A., 3.4% in Brazil, 2.5% in Mexico, 1.8% in Egypt and 0.8% in Congo[3]. The per capita health expenditure is USD 1828 in OECD countries. This number was USD 55.5 in 1980 for Turkey but has increased from 1989 to become USD 140 in 1998 and is currently USD 315[5,6].

Decreasing income leads to an increase in the infant mortality rate and the child mortality rate for those under 5, together with decreased prenatal care and births assisted by healthcare staff[7]. Increasing income decreases the incidence of diseases such as pneumonia and diarrhea and increases the incidence of seeking medical care and getting treated at public healthcare institutions[7]. The high percentage of out-of-pocket health expenditures and catastrophic health expenditures within the health sector is possibly the primary factor causing continuing and widening inequality in accessing healthcare to the detriment of groups with low income.

These data on the health economy and health-related measures attract attention to the presentation rates to the primary healthcare institutions providing primary healthcare services and point to the necessity of concentrating on the association between the health expenditure and socioeconomic status for planning healthcare services and developing financing models.

The aim of our study was to determine the healthcare expenditures of individuals 18 years of age or older presenting at some primary healthcare institutions in Ankara and to analyze its components.

Materials and Methods

The study was conducted by interviewing a total of 3814 individuals aged 18 and over presenting at six primary healthcare institutions at Ankara city center between May 15 and June 15, 2003. A questionnaire was used as the data source for the study. The questionnaire included descriptive questions in addition to questions on healthcare expenditure in the last month, monthly income and monthly expenditures, health and food expenditures in the last month and the component of the healthcare expenditures (medication, examination, investigation, inpatient treatment and other hospital expenditures). The answers were obtained in Turkish Lira (at the end of June 2003, one USD was worth 1,416,000 TL and one Euro 1,616,000 TL).

The study was carried out by the residents of the Gazi University Medical Faculty, Department of Public Health by interviewing individuals aged 18 and over presenting at the six primary healthcare institutions for any reason with the face-to-face technique and administering the questionnaire.

The data were analyzed with the chi-square significance test, t test, correlation analysis (Pearson), variance analysis (Oneway ANOVA, Post-hoc: Tukey) and logistic regression analysis. The healthcare expenditure amount, the monthly income (less than 300 million TL, 300-600 million TL, 601-900 million TL, 901 million - 1 billion 200 million TL, over 1 billion 200 million TL), the level of the healthcare institution used (primary/secondary), the ownership of the institution (public/private) and social security status (present/not present) were used as variables for the logistic regression model to evaluate factors that influence making an out-of-pocket payment (wasn't there out of pocket payment/was there out of pocket payment) while the effect on out-of-pocket healthcare expenditure was analyzed. Some of those that had made out-of-pocket spending could not remember the exact amount. We therefore used whether out-of-pocket spending had been made or not and not the amount as a dependent variable in the model created to evaluate factors that influence making an out-of-pocket payment.

The relevant amounts were multiplied by 12 and then divided by the total number of persons to determine the annual per capita healthcare spending and annual out-of-pocket healthcare spending[8]. The World Health Organization (WHO) has classified any healthcare expense amounting to 40% or higher of the "paying capacity" of the household as "catastrophic health expenditures". Payment capacity can be defined as the portion of the household income above the amount required for the household to live and can be calculated as the USD 1 amount per day per person within the methodology of "justice in financial contribution" as conceptualized by the WHO[9].

The study was limited by the avoidance of answering some of the questions by study participants and the inability of some participants covered by social security to state their healthcare spending in detail.

Results

The 18-27 age group, the youngest age group in the study, made up the majority with 25.7%. Of the participants, 6.4% were female and 75.6% were married. The educational status was primary school graduate for 30.9% while 12.3% had not received any formal education, 41.5% were graduates of primary or secondary school and 54.2% were high school graduates or had higher education. Most of the participants were housewives (46.8%) with those not working actively at present (housewives, unemployed, retirees, students) at 71.4%, those working actively (laborers, farmers, civil servants) at 12.8%, and the self-employed at 15.8%. Of the participants, 83.3% had social security (Social Security Institution, Retirement Fund, Self-Employed System, Green Card or active civil servants).

An increasing monthly income correlated with increased monthly total spending ($r = 0.836$, $p < 0.05$), and increased food spending ($r = 0.786$, $p < 0.05$). An increasing monthly income also correlated with a decrease in the ratio of the expenditure to income within the last month ($r = -0.277$, $p < 0.05$), the ratio of the food expenditure to the income last month ($r = -0.265$, $p < 0.05$) and the ratio of the healthcare expenditure to the income last month ($r = -0.094$, $p < 0.05$).

The average per capita annual health expenditure was calculated as 488 million TL (USD 345), and the per capita annual out-of-pocket expenditure as 167 million TL (USD 118).

The distribution of those that had presented at any healthcare institution within the last month according to the spending patterns showed a catastrophic health expenditure rate of 6.79%.

Those covered by social security did not definitely know the healthcare expenditure amount and it was therefore possible to receive an answer on this value from only some of the participants.

Table 1 shows the distribution of the healthcare expenditures according to presentation characteristics.

There was a statistically significant difference between the healthcare institution used and the healthcare expenditure amount ($p<0.05$) due to the private hospitals. Private hospital expenditure was much higher, especially in mean difference compared to primary healthcare institutions with Mother and Child Health And Family Planning Center expenses at 416±85 million TL (95% CI: 151 million - 681 million), workplace physician at 414±125 million TL (95% CI: 27 million - 802 million) and Health House at 388±70 million TL (95% CI: 171 million - 605 million). There was also a significant difference in healthcare expenditure according to the cause of the encounter ($p<0.05$), due to surgery. A significant difference in healthcare expenditure was found according to the level of the healthcare institution ($p<0.05$), due to the higher cost of the secondary healthcare institutions at 72.4±15.2 million TL (95% CI: 42.8 million - 102.4 million). There was also a significant difference for health expenditure according to the owner of the healthcare institution ($p<0.05$) due to the higher costs of private institutions at 174.5±82.8 million TL (95% CI: 10.6 million - 338.4 million).

Table 2 shows the distribution of the healthcare expenditure of the individuals presenting to any healthcare institution within the last month according to the expenditure categories.

It is interesting that the healthcare expenditure with the highest median is the hospital room and other hospital expenditures, followed by the costs of investigations. It is also of note that medication costs make up 40.5% of the total healthcare expenditure.

Table 3 shows the healthcare expenditure type of those presenting at any healthcare institution within the last month according to some socioeconomic indicators and healthcare presentation characteristics.

There was a significant difference in healthcare expenditure types according to the level of income ($p<0.05$) due to the group with a monthly income over one billion two hundred million TL. There was a significant difference in healthcare expenditure according to the presence of social security ($p<0.05$) due to the group without social security. There was a significant difference in the way healthcare expenditure was met among occupational groups ($p<0.05$) with all groups being different than the others. The rate of those paying out-of-pocket for healthcare was 36.4% for those not working actively (housewives, the unemployed, retirees and students), 20.2% for those working actively (laborer, farmer, civil servant) and 41% of those self-employed. There was a significant difference in the healthcare expenditure type according to the healthcare institution used ($p<0.05$) with all groups being different. The highest rate of out-of-pocket payment was for private physicians (90.6%) followed by private multi-speciality outpatient facilities (85.4%). Social security-financed payments were highest for public

Table 1. Distribution of healthcare expenditures according to presentation characteristics, Ankara 2003

	Number of presentations	%*	Amount of healthcare expenditure **	
			Median (min-max)	Mean±SD
Healthcare Institution Used (n=648)				
Public hospital	254	39.2	50 (1.4-2,000)	140±261
University hospital	92	14.2	100 (20-1,100)	178±222
Private hospital	59	9.1	150 (10-9,000)	467±1281
Private multispecialty clinic	39	6.0	60 (10-500)	107±117
Private physician	25	3.8	100 (20-650)	205±193
Workplace physician	15	2.4	50 (10-100)	53±33
Health house	107	16.5	50 (1-420)	79±91
Mother and child health and family planning center	45	6.9	50 (1-300)	51±57
Other	12	1.9	32.5 (6-210)	75±81
				F=4.911, p<0.05
Reason for presentation (n=648)				
Emergency	61	9.4	100 (4-750)	179±187
Check-up	141	21.8	60 (1-500)	107±106
Surgery	30	4.6	300 (20-3,650)	566±861
Pregnancy and birth	33	5.1	100 (10-700)	165±174
General complaints	383	59.1	50 (1-9,000)	138±498
				F=7.345, p<0.05
Level of healthcare institution (n=648)				
Primary care	167	25.8	50 (1-420)	69±81
Secondary level	481	74.2	70 (1.4-9,000)	187±508
				t=4.750, p<0.05
Owner of healthcare institution (n=648)				
Public	526	81.2	50 (1-2,000)	123±213
Private	122	18.8	100 (10-9,000)	298±908
				t=2.108, p<0.05

* Column percentage.

** Million TL

Table 2. Distribution of the healthcare expenditure of the individuals presenting to any healthcare institution within the last month according to the expenditure categories, Ankara 2003

	Healthcare expenditure amount			
Expenditure Items	Median (min-max)	Mean±SD	Total*	Percentage**
Medication (n=264)	30 (0.7-2500)	74±185	19,510	40.5
Examination (n=162)	35 (0.2-200)	43±45	6,982	14.4
Investigation (n=47)	90 (1.5-700)	144±160	6,798	14.0
Bed and hospital costs (n=17)	270 (15-3000)	497±730	8,445	17.5
Other (n=71)	48 (0.8-450)	92±107	6,595	13.6

* Million TL

** Column percentage according to the total healthcare expenditure amount.

Table 3. Healthcare expenditure type of those presenting at any healthcare institution within the last month according to some socioeconomic indicators and healthcare presentation characteristics, Ankara 2003

		Healthcare expenditure type (%X)**		
	% *	Out-of-pocket expenditure	Health insurance expenditure	Combined expenditure
Income level (n=1093)				
<300 million TL	9.7	34.9	48.1	17.0
300-600 million TL	39.2	39.4	50.6	10.0
601-900 million TL	14.9	28.2	60.1	11.7
901 million-1 billion 200 million TL	14.5	36.7	51.9	11.4
>1 billion 200 million TL	21.7	26.2	62.4	11.4
			x^2 =19.40	p<0.05
Health insurance status (n=1222)				
No health insurance	10.7	100.0	–	–
Only has social health insurance	87.0	27.8	59.4	12.9
Private health insurance	2.3	35.7	50.0	14.3
			x^2 =265.50	p<0.05
Occupational group (n=1222)				
Not working actively	71.7	36.4	51.8	11.9
Working actively	15.5	21.2	66.7	12.2
Self-employed	12.8	41.0	49.4	9.6
			x^2 =20.21	p<0.05
Healthcare institution used (n=1222)				
Public hospital	40.7	28.2	57.7	14.1
University hospital	17.9	23.9	67.9	8.3
Private hospital	6.4	48.7	39.7	11.5
Private multispecialty clinic	3.9	85.4	14.6	–
Private physician	2.6	90.6	9.4	–
Workplace physician	2.0	20.8	79.2	–
Health house	18.6	34.4	57.7	7.9
Mother and child health and family planning center	6.3	36.4	29.9	33.8
Other	1.6	60.0	35.0	5.0
			x^2 =191.146	p<0.05
Reason for presentation (n=1222)				
Emergency	7.0	36.5	49.4	14.1
Check-up	30.6	23.0	66.8	10.2
Surgery	5.0	36.1	52.5	11.5
Pregnancy and birth	4.4	61.1	35.2	3.7
General complaints	53.0	38.7	48.5	12.8
			x^2 =52.760	p<0.05
All (n=1222)		34.6	53.8	11.6

* Column percentage

** Column percentage

institution physicians (79.2%) followed by university hospitals (67.9%). Combined payment was highest at Mother And Child Health And Family Planning Centers (33.8%) followed by public hospitals (14.1%). There was a significant difference between healthcare expenditure types according to the reason for the visit (p<0.05) due to check-up visits and visits for pregnancy and childbirth.

Table 4. Logistic regression analysis of factors that influence making an out-of-pocket payment, Ankara 2003

	B	OR	%95 GA
Influencing Factors			
Amount of healthcare expenditure	0.01	1.001	1.000-1.002
Income level	-0.170	0.844	0.728-0.978
Level of healthcare institution (primary / secondary)	0.049	1.050	0.683-1.614
Ownership of healthcare institution (public / private)	1.228	3.414	1.875-6.215
Social security status (present / not present)	1.826	6.208	2.588-14.891
Constant	0,641	1,899	

Table 4 shows the logistic regression analysis of factors that influence making an out-of-pocket payment.

There was no statistically significant difference for healthcare expenditure amount and the effect of the level of the healthcare institution used on out-of-pocket healthcare expenditure ($p>0.05$). The effects of the level of income, the ownership of the healthcare institution and the social security status on out-of-pocket healthcare expenditure were statistically significant ($p<0.05$). Higher income groups had less risk of spending out of pocket (OR=0.844), while the risk was greater in private health institutions (OR=3.41) and for those without social security (OR=6.20).

Discussion

The observation that 71.4% of the study participants consisted of persons who did not actively work such as housewives, retirees, students and the unemployed and that the group consisted mostly of young people indicates that primary care health institutions fulfill their obligation by mostly serving those groups with lower socioeconomic status who should have priority in public health services.

The increasing healthcare expenditure within the last month with increasing monthly income level indicates that individuals receive healthcare according to their financial status and not their actual healthcare needs. While the median health expenditure level was highest for the richest group, this group also had the lowest healthcare expenditure to income ratio. In contrast, the group with the lowest income had the lowest median healthcare expenditure but the highest healthcare expenditure to income ratio.

A study in Thailand on 3849 persons has shown that the low-income group had the highest rate of acute disease and hospitalization and the highest healthcare expenditure income ratio. The percentage without health insurance was 67.4% for the low-income group and 38.1 for the high-income group[10]. A study in Vietnam on 2751 persons found that the low-income group had a healthcare expenditures ratio to all income of 12.9% while this ratio was 5.4% in the high-income group[11]. A study in Mexico has found that healthcare expenditure is related to the household income and that in times of economic crisis those groups with low income and without insurance have to decrease their healthcare expenditure[12].

Our study found a per capita annual healthcare expenditure amount of 488 million TL (USD 345) and a per capita annual out-of-pocket healthcare expenditure amount of 167 million TL (USD 118). A sectional study from Gemlik, Turkey in 2001 reported that the out-of-pocket annual average per capita healthcare spending was 95.6 million TL (USD 83.1)[8]. A 1995 study in Gölbaşı, Turkey reported this amount as USD 38[2]. Per capita health expenditure figures (according to purchasing power) for various countries are as follows: U.S.A. USD 4499, Germany USD 1768, Greece USD 1345, Brasil USD 631 and Iran USD 356[6]. According to OECD figures, the per capita out-of-pocket healthcare expenditure for various countries is as follows: U.S.A. USD 722, Canada USD 408, Germany USD 299, Italy USD 448, Mexico 280 and Turkey USD 72[13].

Our study found a catastrophic healthcare expenditure rate of 6.79%. A study comparing the catastrophic healthcare expenditure rates in different countries has reported rates varying from 0.01% (Slovakia) to 10.5% (Vietnam). Countries with a high rate of catastrophic health insurance are mostly those that have experienced a transition in their healthcare systems and Latin America countries[14].

When we looked at the distribution of healthcare expenditure to the healthcare institution used, the fact that the expenditures were higher in secondary care healthcare institutions and private healthcare centers signifies the importance of the primary care public healthcare institutions for the healthcare system in relation to the healthcare economy.

The high percentage of medication expenditures (40.5%) within healthcare expenditure items is a reminder of the importance of rational drug usage. The high expenditure for medication may also be due to increased out-of-pocket expenditure because the green card does not pay medication costs for outpatient treatments and other healthcare insurance systems have a deductible for medication. A study in Gölbaşı looked at the distribution of healthcare expenditure to various items and medication expenditures took first place with 45.2%2. A study in Gemlik found that medication expenditure made up 39.5% of the total out-of-pocket expenditure[8].

While the cost of hospital beds and other inpatient treatment items make up 17.5% of healthcare expenditures, this is the item with the highest healthcare expenditure median value at 270 million TL. This result indicates that a healthcare system which gives priority to outpatient treatment and/or homecare services will also be a suitable option financially.

When the healthcare expenditure patterns of those who had presented at any healthcare institution within the last month were analyzed, the percentage of those out-of-pocket expenditure was 34.6%. When we add the 11.6% who have partially spent out-of-pocket for their healthcare expenditures, this rate reaches 46.2%. The Gölbaşı study has found a direct expenditure rate of 84% for those presenting to any healthcare institution within the last month[2]. The Gemlik study found a rate of 17.6% for spending out-of-pocket for healthcare expenditures within the last month[8]. Taking the results of our study and the similar Gölbaşı study into account, the rate of out-of-pocket spenders for healthcare is higher among those presenting at any healthcare institution within the last month. We therefore need to evaluate healthcare expenditure with presentations at healthcare institutions to determine the real dimension of the out-of-pocket healthcare expenditure within all healthcare expenditure.

In Georgia, where the healthcare system inhibited from the Soviet Union was decentralized and went through a reform process in 1990, the out-of-pocket healthcare expenditure rate increased to 87%[15]. Tajikistan, where there were similar developments in healthcare, the rate of out-of-pocket expenditure in those presenting at healthcare institutions within the last two weeks was reported as 48%. This rate was 38% for the lowest income group and 53% for the highest income group[16]. The rate of out-of-pocket expenditure compared to all healthcare expenditure is 27.3% in Bulgaria, 25% in Romania, 25% in Kazakhstan, 16.0% in Belgium, 34.1% in Argentina, 60.4% in China and 22.7% in Sweden[15,17].

While the richest group has the lowest out-of-pocket expenditure rate and the highest health insurance expenditure rate, the poorest group has the highest total expenditure rate for out-of-pocket and combined expenditure. This may be due to those in the lower income groups who work informally in gray sectors without any social security in a country where the 'gray economy' makes up a large percentage of the country's economic activity may be having to make out-of-pocket payments for their healthcare. Others who have some kind of social security and a relatively higher income are at less risk of having to meet their healthcare expenses themselves. The 35.7% out-of-pocket expenditure rate of patients with private health insurance may be due to the narrow coverage of these insurance companies. The fact that the self-employed group had the highest out-of-pocket expenditure may be because this group has a higher level of income or that Self-Employed System, which predominantly covers this group, is not adequate to meet its insured population's needs. The out-of-pocket expenditure was higher for those seen at the Health House or Mother And Child Health And Family Planning Center compared to the public hospitals or university hospitals may be due to some procedures used in primary healthcare institutions such as revolving funds, donations, extra payments, etc. When we analyzed the distribution of the healthcare expenditure type according to the reason for presentation the out-of-pocket expenditure was highest for pregnancy and childbirth (61.1%) indicating that public healthcare services do not provide adequate reproductive health services.

Logistic regression analysis of the factors influencing out-of-pocket healthcare expenditure showed that the out-of-pocket spending risk was lower in the higher income groups while the risk was higher in

those presenting at private healthcare institutions and those without social insurance. The lower risk in the higher income group can also be due the higher chance of these groups to belong to a social security system. Those without social security are unable to have other financial sources meet their healthcare expenses while those presenting at private healthcare institutions are at more risk for making an out-of-pocket payment as financing by social security institutions make up a small percentage of the payments to these healthcare institutions. The high out-of-pocket expenditure risk of the low-income patients and those without social security, a group which has priority in promoting public health, can lead to these people becoming poor again and poverty becoming chronic.

Out-of-pocket expenditure in the healthcare sector is increasing in many countries with low or moderate incomes. Poor people have to devote more of their household income for healthcare expenditure than the rich. It is stated that new health insurance systems need to be developed in these countries to decrease the rate of healthcare expenditure and to protect poor people from the high cost of healthcare[10,18,19].

In conclusion, social insurance institutions have to be revised in a way that they will cover fully the low-income groups of the society as well to decrease the out-of-pocket expenditure and the ratio of catastrophic healthcare expenditure within the health economy. The amount dedicated to healthcare services by the government needs to be increased and the role played by the public sector in total healthcare expenditure needs to be expanded. These measures necessitate an extensive debate on general economic issues.

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Active surveillance of severe malaria and related deaths in two-referral hospitals in Mukalla city in Yemen

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Abstract

Background: National malaria control programme has been rehabilitated in Yemen since 2001. Unfortunately any improvement in malaria surveillance system (MSS) could not be done paralelly to the other activities. Major problems in MSS were that information could not be collected regarding all cases of malaria, could not be monitored and evaluated due to lack of necessary information in the routine-passive surveillance system.

In this study, we aimed to present an active surveillance example about malaria in Yemen during 2004.

Subjects and methods: A prospective study was designed to collect data about admitted malaria cases by weekly visits to two referral hospitals in Mukalla city from 1st January 2004 to 31 December 2004. Two health workers were trained to follow all the process about the patients from admission to discharge. A special case investigation form was used. Socioepidemiological information was gained from the hospital records or from the patients; clinical data were collected from the doctor's report in patient's file and laboratory results were also obtained. Cases and deaths were classified according to WHO surveillance guideline-1999. Diagnosis of the case mainly depended on the clinical findings although laboratory reports revealed negative results for malaria parasites.

Results: A total of 157 malaria cases were admitted in the hospitals during one year. The number of severe malaria cases was 54. Only ten severe malaria cases died during the study period. Case fatality ratio for severe malaria was 18.5%. Severe malaria mortality (CFR) was significantly higher in the group of people ≥5 (30 %) years of age compared to the children <5 years of age (4 %) ($p<0.05$).

Cerebral malaria was the main significant reason for dying due to severe malaria (39%). The most frequent symptom associated with severe malaria was headache which had significant risk to death.

According to the confirmatory laboratory results, plasmodium falciparum was detected in 92% of the all confirmed malaria cases while plasmodium vivax was detected in only 8% of the cases.

Conclusion: Although major approach for effective disease surveillance is using national passive routine systems of surveillance, some other approaches may be used where the condition is not suitable for collecting reliable data up to the strengthening of national routine systems of surveillance. Active hospital based surveillance can be applicable to get some information about severe malaria and related deaths, such as, case-fatality rate, major reasons for dying, most common symptoms for cases and deaths, if there is no available passive-routine surveillance system in a country such as Yemen (in 2004).

Key words: Severe malaria, deaths, Yemen

Introduction

"Disease Surveillance" consists of components which are detection, investigation, confirmation, reporting, data analysis and feedback.

Various methods are used to collect information about the occurrence of diseases. The most widespread is the routine monitoring of disease incidence at health facilities. All health facilities are required to monitor and report the incidence of certain diseases continuously. These data are then collected and analysed. Since this is a 'passive' system relying on routine reports, it is often called 'passive surveillance'.

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In contrast, in phases of accelerated disease control, health facilities are actively visited to search the records for any suspect case(s) that might have been reported to that facility. This is termed as 'active surveillance'.

Passive or routine surveillance is the collection and reporting of surveillance data on a regular basis. Passive surveillance depends on voluntary and regular data reports from all health-care providers, including laboratories. It is fundamental to any surveillance system that all health workers should be encouraged to report cases of communicable diseases without delay through the official channels. The word 'passive' is used but is a misnomer because action is required both by the provider and the recipient of the data. Reliable sources of surveillance data for routine surveillance include outpatient and inpatient registers, and individual patient records.

Active surveillance is the regular collection of surveillance data on specific diseases through the review of medical records and registers during regular visits to reporting sites. Active surveillance does not replace passive surveillance, but if conducted regularly and frequently it has the following advantages:

- helps to rapidly improve the timeliness and accuracy of case detection, and notification,
- enables rapid case investigation, including taking laboratory specimens,
- enables timely action to be taken in response to the detected case.
- identifies areas where passive surveillance is weak so corrective measures can be taken.

Historically epidemiological studies were intimately linked with malaria control, and both were conceived as an integral part of local public health services. The strategy of malaria eradication between 1956 and 1969 moved malaria activities away from the health services and led to a weakening of epidemiological capacities [1]. By 1992 the global malaria control strategy was revised and national programmes were encouraged to focus on early diagnosis and prompt treatment, selective and sustainable prevention, early detection, containment and prevention of epidemics, and building local capacity to assess and manage the malaria situation[2]. Surveillance is an essential part of this strategy[3].

Malaria surveillance is complicated; surveillance procedures, methods and case definitions are multiple and not unique. The situation is more complicated in developing countries where lack of efficient health information system and poor quality of laboratory confirmation in an endemic village; quality assured microscopy services are a major challenge even for the district hospitals[4]. The passive routine reporting will give unreliable data with probability of misdiagnosis or over diagnosis.

Although malaria surveillance methods differ from one country to another, passive routine reporting system is the common way. Some other methods were applied also; e.g. retrospective descriptive studies in New York city in USA[5] and in Ahmedabad in India[6], active surveillance of imported malaria in London[7], prospective hospital based surveillance of severe malaria in Myanamar[8] and active home based surveillance in India[9].

Some researchers consider that malaria is an endemic disease in the Republic of Yemen and plasmodium falciparum is the predominant causative agent of malaria[10]. National malaria control programme in Yemen started practically after its rehabilitation in 2001[11].

National malaria control programme has been rehabilitated in Yemen since 2001. During this process, at first, it was given the importance to the vector controlling, prevention of malaria and improvement of diagnosis activities. Unfortunately any improvement in malaria surveillance system (MSS) could not be achieved parallel to other activities. Major problems in MSS were information which could not be collected about all cases of malaria and it could not be monitored and evaluated depending on lack of the necessary information in the routine-passive surveillance system. Similarly, under reporting cases and deaths affect estimation of malaria indicators WHO estimates about 1,800,000 clinical malaria cases and 15000 malaria deaths occurring annually in the country (the population is about 20,000,000). These old figures were still the official indicators, although some improvement in malaria control has been happening since 1998.

Clinical, epidemiological characteristics, case fatality rates of severe malaria and geographical distribution of malaria deaths have not been documented well in Yemen yet. On the other hand, severe malaria cases have been usually managed in hospitals. Active hospital based surveillance may offer more reliable data about severe malaria cases and deaths, than passive routine reporting system.

In this study, we aimed to present an active surveillance example about malaria. Methodology and results of one year experience of active surveillance will be presented for two referral hospitals in eastern governorates of Yemen during the year 2004.

Materials and Methods

The setting

Ibn Sina hospital and maternity & childhood hospital are referral hospitals in Mukalla city, capital of Hadramout province, at the east of Yemen. The cases from the three eastern governorates in Yemen (Hadramout, Shabwah and Al Muhrah) were sent to these centres. According to the "2003-Routine Malaria Surveillance Reports", more than 3000 malaria cases were reported annually to the health facilities of these governorates and 200-400 malaria cases among them referred to these hospitals in Mukalla city. After referral cases on the need of hospitalization were evaluated, some of them were hospitalized as severe malaria or as uncomplicated malaria for any other social reasons.

Surveillance procedures

Two public health workers from the epidemiology department of malaria control programme, Hadramout office in Mukalla were trained well in order to collect information with a specifically designed case investigation form about admitted malaria cases and deaths actively during the study period, from 1st January 2004 to 31 December 2004. These health workers visited the two referral hospitals weekly and followed any progress about the cases till the patient discharge, because of surveillance of hospitalized malaria cases and in order not to miss any probable severe cases or deaths.

Case definion of malaria used for this survey was accepted as any hospitalized case diagnosed by the responsible doctor, as malaria irrespective to laboratory results.

The case investigation form was including all necessary information about the case. Socioepidemiological data were obtained from the patients' records. Clinical features and diagnosis were obtained from the doctor's report in the patient's file. Laboratory results were collected from the laboratory reports that were attached to the patients' files.

Data were collected aboutname, age, sex and address of the patient, date of onset of fever, hospital admittion and discharge date, if there happened death date, clinical features, results of laboratory investigation for malaria parasite, complications, final doctor's diagnosis and prognosis at discharge.

The malaria cases and deaths in this study were classified according to WHO surveillance guideline-1999 with some modification to be applicable to the clinical practice in the study area as clinical (probable) versus confirmed and severe versus uncomplicated.

Data were analyzed in SPSS version 9.

Results

A total of 157 malaria cases admitted in the two referral hospitals during the study period time, from 1st January 2004 to 31 December 2004. The number of severe malaria cases was 54 among 157 cases. Only ten cases of 54 severe malaria cases died during the study period. It was calculated that case fatality ratio (CFR) for all admitted malaria cases was 6.3% and CFR for severe malaria was 18.5%.

A statistically significant difference between CFR of 'under 5 years of age children' (4%) and CFR of '5 years and older people' (30%) ($p<0.05$) was found (Table 1).

Table 1. Age distribution of severe malaria cases

Age group	Cure (n)	Died (n)
< 1 year	10	–
1- 4 years	13	1
5 -9 years	5	–
10-14 years	2	4
15+ years	14	5
Total	44	10

p= 0.030
Fisher exact test (when the age is grouped as under 5 years and 5 years and above)

Diagnosis of the cases in these hospitals mainly depended on the clinical features although laboratory reports revealed negative results for malaria parasites. According to the confirmatory laboratory results, plasmodium falciparum was detected in 92% while plasmodium vivax was detected in only 8% of all confirmed malaria cases.

It was also noted that cerebral malaria was the main significant reason for dying due to severe malaria (39%) ($p<0.05$).

The most presenting symptoms beside fever were vomiting, shivering, headache and sweating. The most frequent symptom associated with severe malaria and death was headache ($p<0.05$).

Discussion

According to the study results, most of severe malaria cases were children under 15 years of age (65%), especially children less than five years of age (45%). Case fatality ratio in children <15 years of age was 14% and <5 years of age was 4%. Different literatures reported similar findings; hospital case fatality rate of severe malaria in children has ranged from 10% to 40% but in recent studies the average case fatality rate was about 16%[11,16,17] in Papu New Guinean children, "11.9%"[15] and in North Ghana "11.2%"[16].

A total of 18 cases out of 54 severe malaria cases had cerebral malaria (33%). In many parts of the world cerebral malaria is the most common clinical presentation and cause of death in adults with severe malaria; in Thiland and Viet Nam about half of the cases of severe falciparum malaria had cerebral malaria[17], while in Melanesian adults with severe falciparum malaria in central province of Papu New Guinea, only 17% were presented with cerebral malaria[18].

Severe malaria mortality (CFR) was significantly higher in the group of people ≥5 years of age than the children <5 years of age (p value <0.05). The same finding was obtained in Mynamar study[8].

It was reported that coma or cerebral malaria has approximately 20% mortality rate in adults and 15% in children[19]; this high mortality rate might give an indication of poor medical care in the locality. Depending on these WHO information, that CFR due to cerebral malaria was the highest (39%) could be explained by that adults were more exposed to cerebral malaria than young children.

It was found that the most clinical features, symptoms in malaria cases among the study were fever, vomiting, shivering, sweating and headache like the findings were reported in different literatures[20,21]. More over it was reported that a good general predictor of malaria included a sequential occurrence of fever, chills and/or sweating or combination of all three symptoms[22]. Among these symptoms only headache is a significant clinical presentation related to 'severe malaria cases' and deaths; although it is not a specific symptom of cerebral malaria.

In order to investigate the relations among anaemia or other complications and 'severe malaria cases' and deaths, further studies are needed.

Conclusion

Although major approach for effective disease surveillance is using national passive routine systems of surveillance, some other approaches can be used where the condition is not suitable for collecting reliable data up to the strengthening of national routine systems of surveillance. Active hospital based surveillance can be applicable to monitor severe malaria and related deaths in the main referral hospitals in the country. Some information (case-fatality ratio, the major reasons for dying, the common symptoms for cases and deaths, etc) can be gained by collecting the information related to the only severe malaria cases and deaths from referral hospitals actively, if there is no available passive-routine surveillance system in a country such as Yemen.

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Socio-demographic properties of consanguineous marriages in Isparta Province-Turkey

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Abstract

The frequency and socio-demographic characteristics of consanguineous marriages were determined in Isparta province located in the Mediterranean region. In 2002, data were collected from 3500 persons throughout the region by a gradual sampling method. Consanguineous marriage rate was determined as 16.8%. We examined some important socio-demographic properties of the studied families, and found that the frequency of consanguineous marriages was seen to be influenced by age, education level, working status, family income, family type and type of residence. The most frequent type of marriages were seen to be the marriages between the first cousins.

Keywords: Consanguineous marriages, prevalence, socio-demography, Isparta, Turkey

Introduction

Consanguineous marriage (CM) can be considered as a social indicator to reveal the social structure of society, since the prevalence of CM is significantly common and very popular in the societies of low social and economic status. It has also a great importance in terms of health aspects. For instance, high prevalence of CM was seen to cause the increased risk of some genetic diseases[1].

It is reported that consanguineous marriage is traditionally common throughout the Eastern Mediterranean region including Turkey[2]. Isparta province is located in the Mediterranean region of Turkey. The frequency of CM and its affecting socio-demographic factors in Isparta province, as well as its community health impacts, remain unknown due to lack of social-epidemiological studies. This study was conducted to determine: 1) the rate of CM in Isparta and 2) the extent to which local socio-demographic factors influence the frequency of CM in order to provide some useful data for a better understanding of health related disorders influenced by social and medical factors.

Methods

Data collected were between January and March 2002 for 3 months from 3,500 inhabitants sampled from the entire population of 364,543 in Isparta, by a stratified sampling method.

Initially, the study sample was divided into two groups; urban city centre and rural region, and the size of each group was calculated according to the number of residents within the entire population. The local centres of urban city were categorised into 3 groups according to their socio-economic properties; low, medium and high regions. The number of residents of these three regions was used to calculate the number of sample. The rural regions were classified into three areas according to the number of inhabitants; the area 1 with a population of more than 20,000, the area 2 with a population between 10,000 and 20,000 and the area 3 with a population of less than 10,000. The sample size from each area was calculated according to their population. Both in urban and rural regions, we randomly determined at least one local section to be sampled for the study. Therefore, 40% of the studied 3500 people

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were selected from the urban city and 60% from the rural regions. We have reached to this sampling size with 891 married families.

The survey was preliminarily carried out in both urban centre and rural regions, the results were assessed and then the survey was conducted. The families were personally visited to ask the number of family members who have been living for at least 6 months in the house and whether the married couples were consanguineous or not. The family member to whom the questions were asked was also asked to provide information regarding the family and the family members; i.e. education level, family income, member age, employment status and some other socio-demographic features. The participants of this research survey have freely provided their consent to release information for public use. A consanguineous marriage was defined as a union between the couples related as second cousins or closer[3].

Statistics

The test of chi square was used for each of the studied variables in order to determine the effects of socio-demographic properties of the survey people. A binary logistic regression was used to analyze factors associated with consanguineous marriage, by using SPSS 9.0 program (SPSS 9.0 Inc. California, 1999). Factors such as area of residence, age, education status, working status of husband and wife, family income, family type (core or large family), origin of residence (native or immigrant) were included into the model.

Results

Socio-demographic features of the consanguineous marriages were presented in Table 1.

The frequency of CM was 16.8% (n=150) in Isparta. Of 150 CMs (76%) 114 families had their marriages between the first cousins. Nearly half of the studied women were seen to generally have marriages with the relatives from their ancestors (55.3%).

The results of logistic regression analysis showed that among the survey variables, the residents of immigrant origin (odds ratio (OR):2.09; 95% confidence interval (CI) 1.30-3.35) and the residence of only rural areas-not rural centres (OR: 3.07, %95 CI: 2.04-4.61) were determined as the factors associated with CMs.

Discussion

The fact that, one of every six women was married with a man who is a relative; their marriages set up by the members of the family; women being mostly less educated and even unemployed, indicated that the families have still been keeping the traditions and customs within the infra-structure of Turkish marriages. This suggested that some parts of Turkish society have remarkable social problems within the family.

The principal type of consanguineous marriage recorded was between the first cousins, which accounted for 76% of all unions as the first degree of CMs. It is reported that some diseases may have a genetic basis since they occur more frequently in children of consanguineous marriages, and are related to different degrees of consanguinity. This occurs particularly in the offspring of first cousins[5].

An as an overall in Isparta region, the frequency of CM was 16.8%, and the results of logistic regression analysis showed that the residents of immigrant origin and the rural residence were the most influencing factors accounted for a high rate of CM.

It is commonly known that of the factors responsible for the occurrence of CM in Turkey's rural area, the traditional customs and economical reasons are the most important ones. Families are traditionally against the marriages with non-family relatives in one hand and do not prefer to share the family property with non-family relatives on the other hand.

It is likely that the immigration may influence the frequency of CM in Turkey. Individuals who migrate with a hope to get a better standard of living and gain economic freedom usually get disappointed and end up living in a squatter housing at the outskirts of cities. Furthermore, the municipalities that face with incoming migration get under a heavy burden and find it difficult to provide an adequate service to new-comer immigrants who have an increasing demand for infrastructure and services.

As an overall result of all above, the distrustfulness in those immigrants and keeping the problems for their own, may occur within the community and this may have a potential impact on the increase rates of CM. The fact that the immigrated families had a high rate of CM indicated that the distrustfulness is a real social problem and makes the families to separate from or refrain of the educational

Table 1. Socio-demographic features of consanguineous marriages in the region.

Features		N	%*	p**
Area of residence	Urban centre	32	8.8	0.000
	Rural centre	41	14.7	
	Rural area	77	30.7	
The age of husband	15-34 years old	41	17.5	0.948
	35-54 years old	69	16.6	
	55 + years old	40	16.6	
Education status of husband	Illiterate	4	23.5	0.194
	Literate***	5	15.6	
	Primary School	101	19.2	
	Secondary School	16	15.2	
	High School	16	11.4	
	University	8	11.3	
Working status of husband	Unemployed	9	29.0	0.065
	Service/labour/retired	61	14.5	
	Trades/farmers	80	18.2	
The age of wife	15-34 years old	50	16.0	0.481
	35-54 years old	65	16.2	
	55 + years old	35	19.9	
Education status of wife	Illiterate	36	31.3	0.000
	Literate***	13	23.6	
	Primary School	90	15.6	
	Secondary School	3	8.3	
	High School	6	6.9	
	University	2	10.0	
Working status of wife	House-wife	140	16.7	0.928
	Service/labour/retired	10	18.2	
Family type	Core-family	100	14.4	0.000
	Large family	50	25.6	
Family income	<250$ per month	114	16.7	0.918
	≥250$ per month	36	17.3	
Origin of residence	Immigrants	38	25.7	0.002
	Native	112	15.1	
Overall		**150**	**16.8**	

* The percentage of consanguineous marriages was calculated as dividing the number of families with consanguineous marriages by the total number of families of both consanguineous marriages and non-consanguineous marriages within each of the studied row features.

** Chi square significance test.

*** Those literate without having access to the private or state primary schools

services and the ongoing community benefits which are useful social tools to overcome the problems related to CM.

In conclusion; CM frequency in the region is high (16.8%), especially among the immigrant residences and the rural regions in some social groups. All population must be educated on the risks associated with consanguineous marriage by public health workers, giving a special attention on the young at the age of getting married.

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Mentor-mentee relationship for students of health management: Could it be useful ?

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Abstract

Background: Mentorship is not a routine program in any Iranian university and is being experienced to some extent.

Purpose: To evaluate the results of piloted mentorship program on health management students.

Methods: This quasi-experimental study mentorship program was applied for the first-year students of health management at Qazvin University of Medical Sciences during 2002-2003 academic year.

The mentors were selected from the third-year volunteers. 25 students and 6 mentors (every 4 novices for 1 mentor) entered the study. At the end of the year the views of the mentees were assessed quantitatively and qualitatively. A self-administered-structured questionnaire was used for mentees and the mentors were participated in focused group discussions.

Results: The interpretation of the quantitative and qualitative data indicated that both mentors and mentees were satisfied with the mentorship program and stressed on its continuation in the coming years-60% said it was necessary and to 40% it was useful. They had found mentorship a give-and-take process and useful to their careers and managerial skills. Their teachers had also considered it to some extend useful.

Conclusion: This study shows the usefulness of mentor- mentee relationship and it is suggestible that mentorship program realized for students of health service management to empower them in group leadership and some managerial skills.

Key words: Mentor, mentorship, health management, student, supervision

Introduction

The purpose of health management university courses is to produce appropriate manpower who can manage the delivery of health care organizations.

In Iran, there are seven Universities of Medical Sciences that have under-graduate and post-graduate courses of health management - Iran UMS offers MS and PhD and Tehran UMS offers PhD.

The bachelor students run training courses to practice management in Teaching hospitals, as well as the public health centers. These practical courses are about 20 units besides their theoretical ones.

In Iran mentorship program was firstly piloted for students of medicine at Qazvin Medical School[1].

According to Oxford Advanced Dictionary (1990), mentor is wise and trusted advisor and helper (of an inexperienced person). The word mentor refers to an older, more experienced adult who helps a younger adult navigate the world. The Mentor serves a role model and supports, guides, and counsels the young adult[2].

Mentoring has become an important element in the career development of men in business, academia and selected profession. It has also become a significant power strategy for women in general, and for nurses in particular, during the last 20 years[3].

Leggat (2000) mentions that students straight from high school may need more direction with fewer life experiences[4].

In the recent years mentoring has been expanded in some European medical schools such as Linkoping, and Maastricht. Mentor is a higher student who develops a relationship with the novice (freshman)

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for the purpose of providing advice, support, information, and feed back in order to encourage the educational development of the novice. There is no evidence addressing mentorship is practiced for health management students.

Stewart and Kruger characterized effective mentoring by certain attributes: a) Mentoring is a teaching - learning process for both the mentor and the mentee, b) It is a reciprocal relationship for the mentor and mentee, a give-and-take situation for both parties, c) There is a knowledge or competence differential between participants, d) The focus of the relationship is a career development; e) Mentee will in turn become mentor to others[5].

Mentoring is an empowering experience for both mentors and novices. The process of seeking out mentors is an exercise in growth for novices[3].

The School of Health is one of the four schools of Qazvin University of Medical Sciences (QUMS). The school has about 800 students and each academic year between 20 to 25 new health management students are admitted. In 2000 the university experienced a pilot program of mentorship for the first-year medical students and the results found to be useful[1]. It has been observed and reflected by the dean and supervisors that many new students need to be supported and led in their educational lives by experienced persons intimately.

Since, there is not any mentorship program in academic educations in Iran, as a second experience, the objective of this study was to evaluate the results of mentorship on educational development of the first year Health Management students at QUMS.

Materials and Methods

In 2002, as an approach to develop the students' potentials to enhance their careers, the Department of Health Management discussed the mentorship program and decided it to be experienced as a pilot study like the piloted one for the students of medicine[2].

All of the 25 first-year students entered a mentorship program in 2002-2003 school-year. Mentors were selected from the third year volunteer students who were known to be competent for their educational progress, ethical aspects and good personalities. Our former experience with medical students had revealed that the third- year students had better potential than the second year students. Meanwhile the forth-year students felt to be graduating and would not be continuing the program. The selected students were briefed about their tasks by the academic advisor. Twenty five novices and six mentors entered the study.

Every four students were sponsored by a mentor so that they could be helped in their educational, cultural and academic lives. Their meetings took place in different areas of the campus. Mentor and mentees met at least once or twice a week regularly; however they also met upon request. Meetings were semi-structured.

The mentors were also supervised by an advisor who was an academician. The mentors were asked to record their activities in their log- books and to report to the advisor monthly. In the advisory sessions their activities, interactions with the mentees and their progress were discussed and they also sought necessary consultations and advice.

Monitoring and evaluation process were done by the research team. Both quantitative and qualitative approaches were applied to assess the results; that is, at the end of the year the views of the 25 mentees on the usefulness of the program were surveyed, using a self-administered structured questionnaire and the 6 mentors were participated in 2 focus group discussions to debate and evaluate the mentorship program on curriculum progress, behavior, socio-cultural relations, educational planning, interpersonal relations, group working and personality. Focus group discussions were held by the research team members; each discussion took about 2 hours. We also sought six teachers' views and attitudes who were teaching the first-year students. These in-depth interviews were also done by the research team and usually took between 1.5- 2 hrs.

The quantitative data were interpreted statistically; where the qualitative ones were clustered, distilled and some quotations were also exemplified.

Results

The total of 25 first- year students of health management with average age of 18.1 participated in the mentorship program.

Of the total number, 20 (80%) were female and 5 (20%) male students. About 90% of the students consisting 18 girls and 5 boys had found the mentorship program interesting and novel.

Only 8% thought of mentorship as a time consuming program. Meanwhile all students believed

that the program would be necessary and a useful method for the progress of the students. Sixty percent took it as necessary and 40% as useful. Of the total number, 44% of mentees thought of their mentors not much interested to the program, whereas 60% had found their mentors very anxious about their roles. Of all students, 76% (2 boys and 17 girls) suggested that mentorship program be officially started in the coming years.

All students believed that mentorship was a new experience and also a good help in their university lives. The students were asked to mark 3 most useful factors in the program. According to their views the frequency distribution of the benefits of the mentor-mentee relations was 76% in their curriculum progress, 72% in academic behaviors, 68% in socio-cultural relations, 56% in educational planning for their futures, 52% in interpersonal relations, 44% in group working, 32% in personalities - taken as shaping their personalities following their mentor's behaviors.

There was no significant difference between the views of the girls and the boys.

The six mentors were participated in group discussion sessions to evaluate the strengths and weaknesses of the program. The majority of them wanted the mentorship program to be continued in the coming years. All students thought that mentorship program was useful and mentor-mentee relationship empowers them in leadership, develops their personalities and is a benefit for their careers. They believed that they, as mentors had felt to be useful in intimating socio-cultural, educational, and behavioral aspects of university life to the new students. They also thought they had been helpful in educational progress of their mentees. Most of them said "I have a good experience of supervision in my real career". Some of the mentors said "we wish we had mentors when we had entered the university for the first time". They had also found mentorship a give-and-take process which develops their interpersonal and human skills that are very useful to their future lives as students of health management. Most of them - both male and female mentors, suggested the program to be continued in the coming years" we want this to be extended". They believed that the program made them ready to gain some managerial skills. Two of them said that being mentor had been time consuming to them and some of them suggested that good mentors should be appreciated yearly by the dean or other university authorities. In the discussions no obvious difference observed according to gender.

We also sought the views of 6 full-time teachers who were more in contact with the freshmen, through face to face interviews. Most of them believed that these students seemed to have fewer difficulties in running the courses, finding references and learning behaviors comparing with the previous ones. However, according to their opinions the mentorship program could be evaluated more objectively provided it is devised and experienced in the coming years.

What we found in this pilot study was like the first one for the students of medicine[1].

Discussion

To our knowledge this is the first study that begins to set and evaluate the mentorship program among students of health care management. The findings of this pilot study indicate the usefulness of the mentorship program for the students of health management. Although it was for the second time that such a program was practiced in our university and we had some limitations to lay it out within the system, the students' mutual perception of mentor-novice interaction was positive. And it seems that it motivates them for their future responsibilities.

The new students had not found themselves in a strange environment on the commencement; conversely, through their mentors' leadership, they soon could have coped with their new situation and, this was also found in our first study[1]. On the other hand the mentors had practiced "leadership" and "friendship" with the younger students - as some of the mentors wished to have had mentors when they had entered the university first. In fact the interpersonal relationship between the mentor and the mentee respects the career accomplishments of the mentor, the mentee identifies with the mentor example. This role modeling of leadership is both conscious and unconscious- the mentee with character and self-respect will evaluate the behaviors of the mentor and select those behaviors worthy of being emulated[6].

The students of health management need to practice human skill as one of the most important managerial skills[7]. The human skill enables the manager to work with the personnel efficiently.

Ko et al. (1999) suggest that mentorship program together with other factors can be an important strategy to enable undergraduates to cope better with the demands of tertiary education[8].

Some researchers stress on the importance of having a system that can monitor the professional behavior of students from the start of their studies, in combination with adequate academic advice.[9]

These years, time mentorship programs are running in postgraduate training courses in medicine. It is also experienced in research activities. Mentorship in nursing practice and education is more experienced than in medicine[3], still the related literature reveals that confusion exists regarding both the concept of mentorship and the role of mentor[9]. Since the students are generally anxious about their future careers[10,11], mentorship program would be useful to empower them in some of their needed skills. Saipanish has showed that 46.8% of the medical students have academic problems, 42.1% have difficulty in peer relations and 78% are anxious about their futures[12]. Mentors can practice group-leadership and can also practice human skills in the process of mentorship[1].

Although some of the mentees thought of their mentors not to be much interested, it is debatable that the role of the mentor to be defined within trial-and-error activities. We should clearly determine to what extend the mentor-mentee relations should go on and be accepted by the cultural backgrounds and ethical considerations.

Conclusion

In conclusion the pilot study for the students of medicine[1], and this study on the students of health management reveal that mentorship program can empower students in human skills, as well as in group working. Although it was observed that menters and mentees were willing for continuation of the program, it is needed to have more efficient a deliborated studies to evaluate wider aspects of mentorship and consider the socio-cultural aspects of this issue.

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Title	Date	City	Country	E-Mail
All Together Better Health III	April 10 - 12 2006	London	UK	www.event-solutions.info/pages/conference.asp?ecode=LH1259
AFMC-CAME-CFPC-MCC-RCPSC Medical Education Conference	April 29 - May 3 2006	Ontorio	Canada	www.afmc.ca/pages/annual_meetings_2006.html
12th International Ottowa Conference on Clinical Competence	May 20 - 24 2006	New York City	USA	mswartz@c3ny.org
The 13th International Student Congress of Medical Sciences (ISCOMS)	June 14 - 17 2006	Groningen	Netherlands	iscoms@med.umcg.nl
9th Environmental Health World Congress of the International Federation of Environmental Health (IFEH)	June 17 - 21 2006	Dublin	Ireland	smythcolm@eircom.net
European Congress of Epidemiology Epidemiology and Health Care Practice	June 28 - July 1 2006	Utrecht	Netherlands	europi2006@fbu.uu.nl
City and Health Symposium with international participation	July 7 - 9 2006	Bursa	Turkey	www.kentsaglik.org
UICC World Cancer Congress	July 8 - 12 2006	Washington, DC	USA	www.worldcancercongress.org
13th World Conference on Tobacco OR Health	July 12 - 15 2006	Washington, DC	USA	anne.isenhower@cancer.org
1st International Congress on Interpersonal Acceptance and Rejection	July 22 - 24 2006	İstanbul	Turkey	www.iar2006.org
17th Conference of the International Society for Environmental Epidemiology	September 2 - 6 2006	Paris	France	paris2006@afsse.fr
The ASME Annual Scientific Meeting on the topic of 'Patient Safety in Undergraduate and Postgraduate Education: Have we got it right?'	September 6 - 8 2006	Aberdeen	UK	info@asme.org.uk
An International Association for Medical Education Conference	September 14 - 18 2006	Genoa	Italy	www.amee.org
3rd International Congress on Developmental Origins of Health and Disease (DOHaD)	November 16 - 20 2006	Toronto	Canada	www.dohadsoc.org
Alliance for Continuing Medical Education 2006	January 25 -28 2006	San Francisco	USA	www.acme-assn.org
3rd Asia Pacific Medical Education Conference	February 18 - 21 2006	Singapore	Singapore	medbox10@nus.edu.sg
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