Journal of BUON **15:** 310-313, 2010

ORIGINAL ARTICLE

Cancer-related false knowledge in relatives of cancer patients and the general public

N.S. Turhal, F. Dane, C. Ulus, S. Sari, N. Senturk, D. Bingol

Marmara University, School of Medicine, Department of Medical Oncology, Istanbul, Turkey

Summary

Purpose: *Although there are many myths about cancer in Turkey, there is no study evaluating Turkish public's knowledge about cancer. The goals of our research were to: 1) measure the extent of knowledge of cancer among the Turkish public; 2) determine the differences in extent of cancer-related knowledge between participants who have relatives with cancer and those who do not; and 3) determine the sources of knowledge possessed.*

Methods: *Data were obtained from a total of 415 participants (244 female, 171 male), all of them sitting at the Marmara University Faculty of Medicine Hospital (MUFMH) outpatient clinic waiting area for non-cancer-related reasons. Each participant completed a 3-part questionnaire. Appropriate statistical tests were used for comparison.*

Results: *The mean age was 41 years. Of 415 participants, 65.3% stated that they had one or more cancer patient in their immediate family; 70.1% of the participants had a high-school education or greater. The questionnaire showed that, depending on the question, anywhere from 1.7% to 88.5% of the general public possesses some false information; furthermore, the difference in accuracy between relatives of cancer patients and non-relatives was marginal. Only 3 specific questions, related to the following ideas, rendered answers that were statistically significantly different between these 2 groups: breast cancer is only seen in females ($p < 0.005$), cell phones cause cancer ($p < 0.001$), and cancer is always very painful ($p < 0.001$).*

Conclusion: *The proportion of false knowledge about cancer was unacceptably high in our cohort. Broader efforts should be made to inform the Turkish public about cancer.*

Key words: cancer, cancer myths, false information, public awareness, Turkey

Introduction

Cancer is a global problem with more than 10 million new cases each year. The World Health Organization estimates that 7.6 million people died of cancer in 2005 and 84 million people will die in the next 10 years if no further action is taken [1,2]. A total of 1,479,350 new cancer cases and 562,340 deaths from cancer are projected to occur in the United States in 2009, corresponding to more than 1,500 deaths per day. Overall cancer incidence rates decreased in the most recent time period in both men and women, largely because of decreases in the three major cancer sites in men (lung, prostate, and colorectum) and in two major cancer sites in women (breast and colorectum) [3]. From a total of 58 million deaths worldwide in 2005, cancer accounted for 7.6 million (13%) of all deaths. More than 70% of all cancer deaths occur in low- and middle-income countries. The number of global cancer deaths is projected to increase by 45% by 2030 (from 7.9 million in 2007 to 11.5 million deaths), partly influenced by an increasing and aging global population [1,2,4]. New cases of cancer in the same period are expected to jump from 11.3 million in 2007 to 15.5 million in 2030 annually [5]. Although the cancer incidence seen in one year is about 400/100,000 in developed countries, cancer is reported in 35-40/100,000 individuals in Turkey [6,7]. It is estimated, however, that, given the unreliable state of cancer reporting in Turkey, the real figure is in fact closer to 150-200/100,000 [7]. Cancer, with its lengthy and otherwise burdensome treatment process, causing hospitalization, economic interruption, and work loss, remains an important public health issue.

There are many myths about cancer in Turkey and

Correspondence to: Faysal Dane, MD. Marmara University School of Medicine, Department of Internal Medicine, Division of Medical Oncology, Tophanelioglu cd. No:13/15, 34662 Altunizade Uskudar, Istanbul, Turkey. Tel/Fax: +90 2163273373, E-mail: faysaldane2001@yahoo.com

Received 04-05-2009; Accepted 03-07-2009

throughout the world. The word myth, from the Greek word "mythos," involves a popular belief or tradition that has grown up around someone or something and which is lacking any scientific basis. Cancer myths are popular, but mostly false, beliefs about cancer. No study as yet has evaluated the prevalence of cancer myths and real cancer knowledge within Turkey.

The goal of our study was triple: 1) to measure the extent of knowledge of cancer within the Turkish public; 2) to determine the differences in extent of cancer-related knowledge between persons who had relatives with cancer and those who did not; and 3) to determine the sources of the accurate knowledge possessed.

Methods

This was a cross-sectional study involving 415 participants. Participants were selected randomly over a 3-month period from among patients waiting for care for a variety of non-cancerous conditions at the MUFMH outpatient clinic waiting area. Participants completed the questionnaire while they waited. The questionnaire comprised 3 parts: questions on socio-demographics; 22 propositions that contained cancer myths (Table 1); and questions regarding participants' sources of information.

The questionnaire was completed by the participants through individual face-to-face interaction with a research assistant, who offered explanations of questions as needed. The middle section, involving 22 propositions, followed a simple "Yes", "No," or "I do not know" format. Brochures outlining the correct answers to each question and general cancer information were provided to participants upon completion of the survey.

Questionnaire results were evaluated using the SPSS 13.0 statistical package, and the data obtained were first examined for frequency distribution. x^2 test was used for comparison of classified data. The Student's *t*-test was used for comparison of continuous variables. $p<0.05$ was considered to be statistically significant.

Table 1. Questionnaire: 22 Cancer Propositions

1. Cancer is always very painful
2. Cancer is contagious
3. Cancer is most commonly an inherited disease
4. Injuries that occur as a result of trauma cause cancer
5. Cell phones cause cancer
6. Cell-phone base stations cause cancer
7. High-tension lines cause cancer
8. Armpit antiperspirants cause cancer
9. Operations and needle biopsies contribute to the spread of cancer
10. Eating sweets causes proliferation of cancer
11. Cancer treatment should not be administered to elderly patients
12. The same treatment is given to all patients with cancer of the same organ
13. All individuals with cancer should be treated
14. Cancer occurs in individuals who have done harm to others
15. Special diets can cure cancer
16. Losing weight by dieting increases cancer risk
17. Skinny people have increased risk of cancer
18. Breast cancer is seen only in the elderly
19. Breast cancer is seen only in females
20. If you have a family member with breast cancer, you are almost certain to develop breast cancer yourself
21. Breast self exam is only necessary in individuals with a family history of cancer
22. All cancer patients die from their disease

Results

The questionnaire was administered to 244 females and 171 males. Of 415 participants, 65.3% (n= 271) had a cancer history in their family and 34.7% (n= 144) did not. The mean age of participants was 41 years (range 26-56).

Figure 1 demonstrates the educational level of the study participants. In all, 70.1% of the participants had a high-school education or greater. Participants' monthly income status is described in Figure 2; 37.6% of participants earned between 600 and 1250 € per month; just less than 5% earned less than 300 € per month, while 7.2% earned over 3000 € monthly. Half (49.9%) of all study participants had workman's compensation; 31.7% had the Turkish equivalent of the USA Medicare; 9.2% the Turkish equivalent of Medicaid; 3.6% declared no social security; and 5.5% listed other support.

The responses to the questionnaire's 22-question section on cancer information are listed in Table 1, divided by study subgroup. The difference in accuracy of

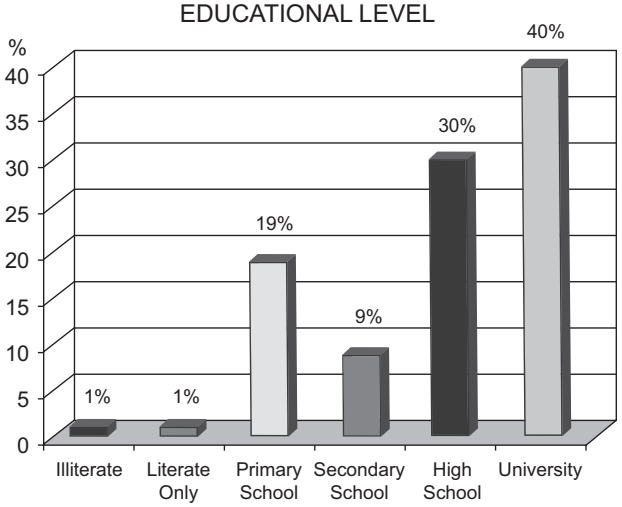

Figure 1. Educational level of participants.

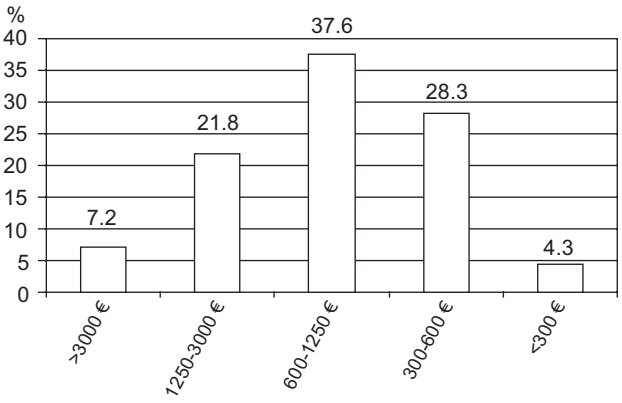

Figure 2. Monthly income status of participants (Euros).

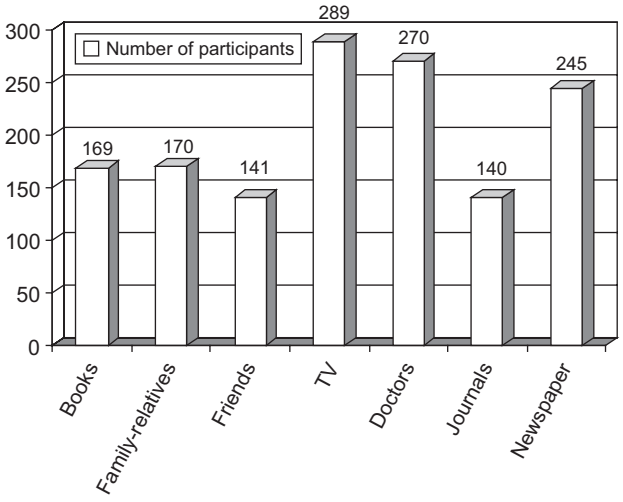

Figure 3. Sources of cancer-related knowledge (Participants may have declared more than one source).

cancer knowledge between relatives of cancer patients and non-relatives was marginal. Only 3 specific questions, related to the following ideas, rendered answers that were statistically significantly different between these 2 groups: breast cancer is only seen in females ($p < 0.005$), cell phones cause cancer ($p < 0.001$), and cancer is always very painful ($p < 0.001$).

The greatest single source of cancer information listed by participants was the television (69.6%); physicians were cited with the next greatest frequency, by 65% of participants (Figure 3).

As our study is the first of its kind in our country, we were unable to compare the extent of cancer-related information in the general public with that of any other time period.

Discussion

Istanbul has a population of 9-10 million people. The Anatolian section of Istanbul, where this study was carried out, has approximately 3 million inhabitants and is mainly a residential district, with a diverse population. This diversity is largely due to a steady stream of immigrants from northern and eastern Turkey. We believe our study population is representative of Turkey as a whole, but a larger confirmatory trial that includes local communities from other parts of Turkey would be useful and is currently under way.

To date, no studies evaluating the level of awareness of cancer and quality of cancer-related knowledge have been carried out in Turkey; therefore, we used similar studies from elsewhere around the world as a comparison.

In a 2003 study [8] of 491 individuals in west Australia, 3% answered "yes" when asked if they agree with the proposition that "cancer is contagious". In our study, this percentage was 4.1%. In the west Australian study, family and television were reported as the leading sources of cancer-related information; in our population, the leading sources were personal physicians and television.

Mass media is a popular tool for informing people about medical conditions. However misdirection about these vital topics may occur. Therefore management of public education about diseases especially cancer should be in the hand of responsible health care professionals. Doctors and nurses approach patient and family using their experience. Therefore, as mentioned in the recent reports, we need a training that will equip health professionals with the necessary knowledge to approach the family in order to abolish these medical myths [9,10].

In contrast, in a 2003 study conducted in San Francisco, 25% of 798 Chinese immigrants participating in the study answered in the affirmative the proposition "cancer is contagious" [11]. Similarly, although the proposition "cancer occurs in individuals that have done harm" was accepted by most of these study participants, in our study, this proposition was accepted by only 1.7%.

Most participants of our study harbored no myths related to cancer and general health and lifestyle. In a study that was carried out in 120 healthy individuals and 100 patients with gynecologic cancer in Sweden in 1997, the healthy group believed that physical injury causes cancer much more than did the other group ($p < 0.05$) [12]. In our study, however, there was no significant difference between the answer to the proposition "injuries occurring as a result of trauma eventually cause cancer" between participants with family members who had cancer and those who did not ($p > 0.05$). In a 1986 article by

Dwyer, the author reported that most of the study participants (cancer patients and their families) thought the following: 1) cancer can be prevented by proper nutrition; 2) cancer can be cured by special diets; and 3) normal children and children with cancer should be fed differently [13]. In our study, most participants entertained no such myths about cancer and nutrition.

In conclusion, in our study population the proportion of false knowledge about cancer was lower than anticipated, but even so, the results of our study still point to a need for more intensive efforts to educate the public. As expected, accurate cancer-related knowledge is greater among that portion of the population with family members who have or have had cancer, but that difference is also not at a satisfactory level. An increased effort should be made to educate the Turkish general public to the causes, proper screening, and treatment of cancer as a general public-health measure. Cancer education initiatives could raise awareness in the general public through public education, education in schools, and education of health workers. Furthermore, efforts should be made through conferences, informative advertisements, brochures, and other means.

References

1. Parkin M, Bray F, Ferlay J et al. Global cancer statistics 2002. CA Cancer J Clin 2005; 55: 74-108.
2. World Health Organization. Fact sheet No. 207. February 2006. Geneva, Switzerland: World Health Organization; 2006. Available at: http: //www.who.int/mediacentre/factsheets/fs297/en/index.html.
3. Jemal A, Siegel R, Ward E, Hao Y, Xu J, Thun MJ. Cancer statistics, 2009. CA Cancer J Clin 2009; 59: 225-249.
4. Huerta E, Grey N. Cancer control opportunities in low- and middle-income countries. CA Cancer J Clin 2007; 57: 72-74.
5. WHO (World Health Organization) (2008) Are the number of cancer cases increasing or decreasing in the world? Available at: http: //www.who.int/features/qa/15/en/
6. Yardim N, Mollasalihoglu S, Cakir E. Evaluation of Turkey Ministry of Health 1983-2001 cancer incidences and cancer death rates in the burden of disease study data. Turk J Cancer 2007; 37: 148-153.
7. Firat D, Celik I. (Eds) Cancer Statistics in Turkey and in the World (1993-1995) (1st Edn). TR: Alp Ofset Publishing Co, Ankara, 1998.
8. Donovan RJ, Carter OB, Jalleh G et al. Changes in beliefs about cancer in Western Australia, 1964-2001. Med J Aust 2004; 181: 23-25.
9. Kallergis G. Informing the cancer patient and family. J BUON 2009; 14: 109-114.
10. Kallergis G. Using the denial mechanism to inform the cancer patient. J BUON 2008; 13: 559-563.
11. Wong-Kim E, Sun A, DeMattos MC. Assessing cancer beliefs in a Chinese immigrant community. Cancer Control 2003; 10: 22-28.
12. Carlsson ME, Strang PM. Facts, misconceptions, and myths about cancer. What do patients with gynecological cancer and the female public at large knows? Gynecol Oncol 1997; 65: 46-53.
13. Dwyer J. Nutrition education of the cancer patient and family. Myths and realities. Cancer 1986; 58: 1887-1896.