RESEARCH ARTICLE

Knowledge, Attitudes and Behaviors of Women Over 20 Years Old on Cervix Cancer in Istanbul, Turkey

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Abstract

Purpose: The aim of the study was to evaluate knowledge, attitudes and behaviors of Turkish women over 20 years old on cervix cancer. Materials and Methods: This descriptive study was performed at a primary care center covering 246 women using a questionnaire composed of 3 sections and 38 questions. The data were analyzed using descriptive statistics, chi-square test in univariate analysis and multivariate hierarchical logistic regression analysis. Results: Of the 93.7% women who knew about cervical cancer, 68.0% of them had heard pap smear test and 46.1% had actually undergone a Pap smear once or more throughout their lives. According to the results of the hierarchical logistic regression analysis about factors affecting the Pap smear test; in Model 1, increase in age and education levels, in Model 2 and Model 3 increase in age and cervical cancer information points were determined. The most important information source for cervical cancer was TV-radio/media (59.9%) and health care workers (62.8%) for pap smear test. Conclusions: Although most women have heard of cervical cancer, knowledge about cervical cancer and also Pap smear screening rate are significantly lower. Having Pap smear test for women was affected by age and knowledge level about cervical cancer. Informing women about cervical cancer would be an important intervention.

Keywords: Cervical cancer - Pap smear test - knowledge - screening behavior - Turkey

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Introduction

Cervical cancer common gynaecological cancer in all women in the world and is one of the main causes of cancer-related death. It is the fourth most common cancer-related deaths in women, and is the third most frequently diagnosed female cancer (Imam et al., 2008; Pandey et al., 2012; Bray et al., 2013). According to World Health Organization (WHO) data nearly 2 million women in the world have a diagnosis of cervical cancer, 500,000 new cases are identified each year, and 274,000 deaths due to cervical cancer occur, and 80.0% of deaths due to cervical cancer occur in developing countries (WHO, 2008; Moosa et al., 2014). According to data from the Ministry of Health in Turkey in 2009, cervical cancer is third most common cancer in female genital organs cancers with 1,951 cases and incidence rate of 4.5 per hundred thousand (TC. Saglık Bakanlıgı, 2014).

As risk factors of cervical cancer, human papillomavirus (HPV) infection, early sexual intercourse or marriage at an early age, multipl sexual partners, smoking, history of sexually transmitted diseases, long-term use of oral contraceptives, too many births, genetic predisposition and compromised immunity, history of infertility, poor hygiene, family history and low socioeconomic status are indicated (Raychaudhuri and Mandal, 2012; Ersin and Bahar, 2013; Thippeveeranna et al., 2013; Zhang et al., 2013; Kruiroongroj et al, 2014; Vaisy et al., 2014; Yilmazel and Duman, 2014). Cervical cancer can be protected with an effective screening program, Papanicolaou (Pap) smear test is used is a cancer screening (Sogukpınar et al., 2013; Karadag et al., 2014). Pap smear results reduction of the risk of death from cervical cancer annually from 4/1000 to 5/10000 in women with early diagnosis (Ball and Madden, 2003).

Some studies have shown low socioeconomic status, ethnicity, lack of knowledge about cancer and cancer screening, fatalism, time constraints, religious factors, wrong thoughts, beliefs and behaviors as adversely affect factors on cervical cancer screening (Tran et al., 2011; Paul et al., 2012; Baskaran et al., 2013; Demirtas and Acikgoz, 2013; Gyenwali et al., 2013; Budkaew and Chumworathayi, 2014). It indicates that women who have more knowledge about cervical cancer and cervical cancer screening performed Pap smear tests more (Coskun et al., 2013; Budkaew and Chumworathayi, 2014; Karabulutlu, 2014).

When socio-economic level considered as a risk factor in the light of these information in the literature, it is important to determine the knowledge level about

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cervical cancer and risk factors at planning of preventive health services about cervix cancer. So it is important to make studies about knowledge about cervical cancer and risk factors at where preventive health services in is given as primary health care. The purpose of the study was to evaluate knowledge, attitudes and behaviors of women over 20 years old on cervix cancer who admitted to a family care center.

Materials and Methods

Research area:

Umraniye is a peripheral district of Istanbul which have 3rd biggest population of total 39 district (approximately 670.000 people). District composed of socioeconomically disadvantaged people who migrated from southeast, east and north of Turkey. Educated proportion of

Table 1. Socio-Demographic Characteristics and Statements Regarding Cervical Cancer of Women According to Have/Have Not Pap Smear Test

Sociodemographics characteristics and statements regarding cervical cancer	Having Pap smear test Yes (n=124) (n %)*	No (n=145) (n %)*	Total (n=269) (n%)	p
Educational level				0.457
Primary school	74 (59.7)	80 (55.2)	154 (57.2)	
Secondary and higher	50 (40.3)	65 (44.8)	115 (42.8)	
Marital Status				0.011
Married	113 (91.1)	116 (80.0)	229 (85.1)	
Single	11 (8.9)	29 (20.0)	40 (14.9)	
Employment situation				0.223
Works	35 (28.2)	51 (35.2)	86 (32.0)	
Does not work	89 (71.8)	94 (64.8)	183 (68.0)	
Monthly income level				0.764
1,500 TL and less	86 (69.4)	103 (71.0)	189 (80.3)	
Over 1500 TL (Turkish Lira)	38 (30.6)	42 (29.0)	80 (29.7)	
Insurance status				0.137
Have insurance	114 (91.9)	125 (86.2)	239 (88.8)	
No insurance	10 (8.1)	20 (13.8)	30 (11.2)	
Smoking status				0.350
Smoke	38 (30.6)	37 (25.5)	75 (27.9)	
Does not smoke	86 (69.4)	108 (74.5)	194 (72.1)	
Menopausal status				0<001
Menopause have	40 (32.3)	17 (11.7)	57 (21.2)	
Menopause unreacted	84 (67.7)	128 (88.3)	212 (78.8)	
Some viruses may cancer				0.654
Right	100 (80.6)	120 (82.8)	220 (81.8)	
Wrong	24 (19.4)	25 (17.2)	49 (18.2)	
HPV can cervical cancer				0.587
Right	42 (33.9)	53 (11.7)	95 (35.6)	
Wrong	82 (66.1)	90 (88.3)	172 (64.4)	
HPV is a virus transmitted through sexual intercourse				0.163
Right	37 (29.8)	55 (37.9)	92 (34.2)	
Wrong	87 (70.2)	90 (62.1)	177 (65.8)	
Smoking increases the risk of cervical cancer				0.056
Right	102 (82.3)	105 (72.4)	207 (77.0)	
Wrong	22 (17.7)	40 (27.6)	62 (23.0)	
HPV virus can also affect men				0.091
Right	48 (38.7)	42 (29.0)	90 (33.5)	
Wrong	76 (61.3)	103 (71.0)	179 (66.5)	
Multiple sexual partners may increase the risk of cervical cancer				0.289
Right	83 (66.9)	88 60.7	171 63.6	
Wrong	41 (33.1)	57 39.3	98 36.4	
Having an early age of first sexual intercourse increases the risk of cervical cancer 0.226				
Right	49 (39.5)	47 (32.4)	96 (35.7)	
Wrong	75 (60.5)	98 (67.6)	173 (64.3)	
Malnutrition increases the risk of cervical cancer				0.735
Right	59 (47.6)	66 (45.5)	125 (46.5)	
Wrong	65 (52.4)	79 (54.5)	144 (53.5)	
Long term use of oral contraceptives increase the risk of cervical cancer				0.776
Right	50 (40.3)	56 (38.6)	106 (39.4)	
Wrong	74 (59.7)	89 (61.4)	163 (60.6)	
Can be protected from cervical cancer				0.096
Right	102 (82.3)	107 (73.8)	209 (77.7)	
Wrong	22 (17.7)	38 (26.2)	60 (22.3)	
There is a vaccine for preventing from cervical cancer				0.259
Right	65 (52.4)	66 (45.5)	131 (48.7)	
Wrong	59 (47.6)	79 (54.5)	138 (51.3)	
Pap smear is done for cervical cancer screening				0<001
Right	123 (99.2)	60 (41.4)	183 (68.0)	
Wrong	1 (0.8)	85 (58.6)	86 (32.0)	

*Row percentage is given

Table 2. Hierarchical Logistic Regression Model Results of OR and 95% Confidence Interval of factors Affecting Pap Smear Screening

Factors	Model 1 OR (95%Cl)	Model 2 OR (95%Cl)	Model 3 OR (95%Cl)
Age	1.71 (1.26-2.35)b	1.68 (1.18-2.39)a	1.82 (1.38-2.41)c
Educational level	1.82 (1.10-3.33)a	1.24 (0.70-2.20)	1.24 (0.70-2.18)
The number of pregnancies	1.06 (0.91-1.24)	-	-
Menopausal status	-	0.73 (0.31-1.73)	-
Cervical cancer knowledge score	-	1.14 (1.10-1.29)a	1.15 (1.01-1.30)a

a: p<0.05, b: p<0.01, c: p<0.001

Table 3. Pap Smear and Cervix Cancer Knowledge Source Distribution of Women Who Participated in Research*

Source	Cervical cancer (n %) ** (n = 252)	Pap smear test (n/%)** (n=183)
TV-Radio (media)	151 (59.9)	41 (22.4)
Entourage / Friend / Neighbor	79 (31.3)	43 (23.5)
Health care workers	59 (23.4)	115 (62.8)
Pharmacy employees	5 (2.0)	0 (0.0)

*Percentage is calculated for women who stated they heard about cervical cancer and Pap smear; **Women marked multiple options in these question

population are higher than Istanbul and Turkey average but unemployment ratios are also higher. There are 37 primary care center, 1 state hospital, 6 private hospital as healthcare structure. Study field of research is selected from one of primary care centers which has a population who mostly composed of migrated and socioeconomically most disadvantaged people of Umraniye.

Sample and method:

This descriptive study was studied at a primary care center in Umraniye between January-February 2010. Sample size calculated as 246 with 20% ratio of cervix cancer risk factor knowledge, 5% margin of error, 95% confidence interval. In study 269 women who are 20 years old and over agreed to participate study.

Data collection:

Research data collected as questionnaire composed of 3 sections and 38 questions prepared by researchers. First section composed 8 questions about socio-demographic characteristics of participants (years, women's and spouse's education, women's and spouse's employment status, marital status, monthly income and insurance status). In the second section, there are 18 questions about general health of women, cervical cancer and pap smear (woman's age at first marriage, first pregnancy age, parity, awareness of menstrual periods, menopause status, smoking status, genital warts status, family planning, cervical cancer and HPV awareness, cervical cancer at family, obstetrics and gynecology examination status, cervical cancer and pap smear awareness, the pap smear test done status, pap smear test frequency, information resources about cervical cancer and pap smear test). In third section there were 12 questions to determine knowledge level. Right answers scored as 1 point and wrong answers as 0 for calculation of knowledge point.

Ethical considerations:

Before performing questionnaire women were informed and consented for research. Additionally after questionnaire brochures and information about cervical cancer and Pap smear test were given. Necessary permits and ethics committee approval was obtained before study.

Data Analysis:

The obtained data was analyzed using SPSS 20.0 software package. In statistics, descriptive statistics, chi-square test in univariate analysis and multivariate hierarchical logistic regression analysis was used. In the multivariate analysis Pap smear test done status are used as the dependent variable. Age, educational level of women, menopausal status, number of pregnancies and cervical cancer knowledge score are used as the independent variable. Statistical significance level was determined as $p<0.05$.

Results

Socio-demographic characteristics and cervical cancer:

The mean age of the 269 women participated in the study was 37.3±11.5 (min.: 20, max.: 70). The average age at first pregnancy of women was 21.3±3.7 (min.: 15, max.: 39), the average number of pregnancies was 3.2±2.0 (min: 0, max.: 12), the average number of births was to 2.3±1.4 (min: 0, max.: 9). Women who participated in the study 252 (93.7%) knew about cervical cancer, of 183 (68.0%) had heard pap smear test. Of 23.0% women's an acquaintance who had cervical cancer. Of 78.8% women follow their menstruation date, 84.8% of women stated that they go to gynecological examinations. The average value of the total information of cervical cancer was 6.4±2.3 (min: 0, max.: 12) which found according to answers that women give for questions about cervical cancer. Surveyed 124 women had Pap smear (46.1%) one or more throughout her life. The women having a Pap smear stated that; 41.1% had Pap smear test done sporadically, 35.5% once a year, and 14.5% for only once, 8.9% for every six months. Distribution of socio-demographic characteristics and statements regarding cervical cancer of women according to have/have not Pap smear test are presented at Table 1.

According to the results of the hierarchical logistic regression analysis about factors affecting the Pap smear test; In Model 1, increase in age and education levels, in Model 2 and Model 3 increase in age and cervical cancer information points were determined. Hierarchical logistic regression model results of OR and 95% confidence interval of factors affecting Pap smear screening are shown in Table 2.

Some 252 women who says they heard about cervical cancer, reported information the source as TV-radio (media) with 59.9%, entourage -friend and neighbor with 31.3%. Only 23.4% reported health care givers and 2% pharmacist specialists. 183 women who say they heard about pap smear test reported their information source as health workers with 62.8%, entourage -friend and neighbor with 23.5% and TV-radio (media) with 22.4%. Pap smear and cervix cancer knowledge source distribution of women who participated in research given in Table 3.

Discussion

This research is done in order to evaluate knowledge, attitudes and behaviors of women who is over 20's and admitted to the primary care provider in Umraniye district of Istanbul. Of 93.7% women heard about cervical cancer and 68.0% about the Pap smear test. In the literature, while cervical cancer hearing rates ranged between 62.0% and 88.8% (Khoo et al., 2011; Tran et al., 2011; Raychaudhuri and Mandal, 2012, Getahun et al., 2013) pap smear hearing rates ranged from 21.9% to 87.4% (Coskun et al., 2013; Demirtas and Acikgoz, 2013; Dinc, 2013; Karabulutlu, 2013; Sahin et al., 2014). As a result of our research on cervical cancer and Pap smear screening test, we found a high incidence of hearing, which is forming the upper limit of the literature.

Although cervical cancer and Pap smear hearing ratios seems to be a high, only 46.1% of women had Pap smear test one or more in number throughout his life. Also most of women who stated they had Pap smear test, had it irregularly. While studies conducted in developed countries, pap smear screening rates over 70% (Gonzalez et al., 2012; Shekhar et al., 2013; Suh et al., 2013), in developing countries, this ratio was below 70% (Imam et al., 2008; Gan and Dahlui, 2013; Wongwatcharanukul et al., 2014). In Turkey studies, ratios ranged between 9.4%-68.5% (Uysal and Birsel, 2009; Erbil et al., 2011; Demirhindi et al., 2012; Bekar et al., 2013; Coskun et al., 2013; Demirtas and Acikgoz, 2013; Dinc, 2013; Karabulutlu, 2013; Karadag et al., 2014; Sahin et al., 2014). Results of our study in Turkey are similar to the work done in developing countries. In the female population 80.0% of Pap smear screening rates are considered successful (Markman, 2007). Research results and the results of other studies in Turkey about Pap smear test shows that rates are lower than desired level. The reasons for this may be belief in women's health, socio-economic and cultural reasons. Also difference between hearing ratios and having ratios of test are remarkable. Planning Large-scale interventions for assimilation of having Pap smear test which is the most cost effective way to protect yourself from cervical cancer by health policy-makers would be appropriate.

'Some viruses may cancer' was the most common (81.8%) true answer given by women to determine the level of knowledge about cervical cancer. These results were higher than in other studies conducted in literature. (Karadag et al., 2014; Kruiroongroj et al., 2014). Correct answers for HPV-related statements were low in between who answered 'Some viruses may cancer' correct. Ratios of true answers for expressions of 'HPV can cervical cancer', 'HPV is a virus transmitted through sexual intercourse' and 'HPV can also affect men' were 36.1%, 34.2% and 33.5% one by one. 'HPV can also affect men' was the lowest correct answered expression. While there are researches which knowledge level ratios are higher than ours in the literature (Paul et al., 2012; Ortashi et al., 2013; Wen et al., 2014). HPV and cervical cancer knowledge level of women is lower than ours in many studies (Khoo et al., 2011; Hoque et al., 2013; Al-Azri et al., 2014). There are lower results than our study (Ersan et al., 2012), higher results than our study (Coskun et al., 2014) and similar results to our study (Ozyer et al., 2013) about 'HPV causes cervical cancer' in the literature. Results in the literature vary. However, in both researches as well as in many studies of women seems to be a lack of information on this subject. Lack of knowledge about transmission routes, about association with HPV and cervical cancer, may effect negatively prevention of cervical cancer as well as reducing rates of morbidity. In this regard, a wide range of training and awareness activities by community-based health workers will be effective with the support of the media. 'Cervical cancer can be prevented' was mostly expressed second (77.7%) correctly after 'Some viruses cause cervical cancer' by women. In studies conducted in Turkey, thinking rate about -they could be protected from cervical cancer- were lower than the results of research (Ersan et al., 2012; Coskun et al., 2013; Tascı-Duran and Unsal-Atan, 2013). Thought of women that they can be protected from cervical cancer may promote effect of motivation in this regard. As most important consequence of this, this may be thought that screening which is the primary prevention of cervical cancer is seen with high rates of participation. This can have a significant impact on secondary and tertiary prevention too.

Women also correctly answered with a high ratio (77.0%) the expression of 'smoking increases the risk of cervical cancer'. 'Smoking is a risk factor for cervical cancer' knowledge ratio were lower than our research results in studies conducted both in Turkey and other countries (Uysal and Birsel, 2009; Hoque et al., 2013; Al-Darwish et al., 2014). Even, the results of research studies made on between health care workers were lower than our study (Ertem, 2009; Coskun et al., 2014). More than half of the women who participated in the study (68.0%) knew that Pap smear test is a screening test. In studies, the pap smear test awareness rates in women ranged between 26.7%-61.7% (Erbil et al., 2011; Gulten et al., 2012; Bekar et al., 2013; Karadag et al., 2014; Sahin et al., 2014).

Of 63.6% participants responded correctly to the statement of 'multiple sexual partners increases the risk of cervical cancer'. In the literature, while there were higher results from the survey results (Uysal and Birsel 2009; Raychaudhuri and Mandal, 2012; Al-Darwish et al., 2014), also there were lower results than survey results (Coskun et al., 2013; Thippeveeranna et al., 2013; Getahun et al., 2013; Yilmazel et al., 2014). This very variable results in the literature suggests women did not have enough information about it. Nearly half of the women (48.7%)

answered correctly to the statement of 'Cervical cancer vaccines exist'. The ratios for knowledge of existence of vaccine for cervical cancer were between 17.1% -78.4% (Uysal and Birsel, 2009; Khoo et al., 2011; Ersan et al., 2012; Reis et al., 2012; Bekar et al ., 2013; Ortashi et al., 2013; Sahin et al., 2014; Wen et al., 2014; Yilmazel and Duman, 2014). In the literature there were both higher and lower results. Only half of the respondents knew that there is vaccine for HPV, and this ratio can be considered as a low rate. This may be because of lack of HPV information on the country. For example in the study, HPV-related knowledge levels are lower than in other subjects. Women's lack of knowledge about HPV may have been caused to thoughts like 'HPV is a low risk of infection or there is no vaccine of HPV'. Whereas, in the prevention of cervical cancer HPV vaccine is an important strategy (Markman, 2007). In Turkey, more research on HPV vaccine and training about HPV vaccine for women will be an important strategy in terms of prevention of cervical cancer.

Nearly half of the respondents (46.5%) said 'malnutrition increases the risk of cervical cancer' expression is correct. Another study in the literature %41.5 women said 'Nutrition is one of the risk factors for cervical cancer' and this is a low result according to our study (Li et al., 2012). In the literature, malnutrition is indicated as one of the risk factors of cervical cancer (Kritpetcharat et al., 2012; Thulaseedharan et al., 2012). But according to other risk factors, malnutrition is less known and has less risk. Therefore it is normal that only 46.5% of women in our study specified diet as a risk factor. Participants answered correctly at lower rates (39.4%, 35.7%) the expression of 'long-term use of birth control pills and have an early age of first sexual intercourse increases the risk of cervical cancer'. At researches in literature, rate of knowledge of 'long-term use of birth control pills is one of the risk factors for cervical cancer' was between 5.2%-90.7% (Ghojazadeh et al., 2012; Getahun et al., 2013; Hoque et al., 2013; Al-Darwish et al., 2014). While studies in Turkey which's topic is about early age of first intercourse causing cervical cancer was between 2.9%-86.5% (Ertem, 2009; Uysal and Birsel, 2009; Bekar et al., 2013; Coskun et al., 2013; Sogukpınar et al., 2013; Karadag et al., 2014; Yilmazel and Duman, 2014). In studies conducted outside of Turkey the results was found between 18.3%-68.8% (Khoo et al., 2011; Hoque et al., 2013; Thippeveeranna et al., 2013; Al-Darwish et al., 2014; Kruiroongroj et al, 2014). Research results were various in the literature. Long-term use of birth control pills and having sexual intercourse at an early age is a risk factor for cervical cancer (Raychaudhuri and Mandal, 2012; Thippeveeranna et al., 2013; Sahin et al., 2014; Vaisy et al., 2014). If women receive comprehensive training in primary health care about early marriages and family planning issues it will be effective in the prevention of cervical cancer.

Women who participated in the study heard cervical cancer mostly via TV-radio (media) and least from the pharmacy. However, the Pap smear test had heard mostly from health workers and least via TV-radio (media). In studies women's most important source of information about cervical cancer was found mostly media (Khoo et al., 2011; Reis et al., 2012; Rashwan et al., 2013; Tascı-Duran and Unsal-Atan, 2013; Sahin et al., 2014). In a study of cervical cancer, doctors were noted as the most important source of information (Tran et al., 2011). Also studies for Pap smear test, the most important source of information have been noted as health care workers (Gan and Dahlui, 2013; Karabulutlu, 2013; Sahin et al., 2014). Research results are similar to other studies. Women receive cervical cancer related information from the media, Pap smear test their knowledge of the health care workers. Pap smear is implemented by health workers himself or herself in health institutions, so could be thought that caused this situation

According to hierarchical logistic regression analysis, age and increasing information points for cervical cancer were determined as factors affecting having the Pap smear test of women who participated in the study. In the literature, pap smear and HPV knowledge levels, cervical cancer story in family, smoking, suggestion of healthcare workers, sociodemographic factors like especially age, ethnicity, education level, income level, employment status, marital status, use of contraception, number of children, health insurance status, religious and cultural factors were identified as factors affecting having a pap smear test. Again analogously to the results of research, increase in level of knowledge of cervical cancer was noted as one of the factors influencing having pap smear test (Uysal and Birsel, 2009; Erbil et al., 2011; Gulten et al., 2012; Reis et al., 2012; Thulaseedharan et al., 2012; Baskaran et al., 2013; Demirtas and Acikgoz, 2013; Ersin and Bahar, 2013; Gan and Dahlui, 2013; Gyenwali et al., 2013; Karabulutlu, 2013; Shekhar et al., 2013; Budkaew and Chumworathayi, 2014; Sahin et al., 2014; Wongwatcharanukul et al., 2014). Research results and the results expressed in the literature were similar. Increase in age of the women may make them more sensitive about the cause of cervical cancer that also make them having pap smear test. In addition, older women consult health care provider at more often rate due to some other health problems and this may increase their level of knowledge and Pap smear screening. The increasing level of cervical cancer-related information may lead to having Pap smear test by both increasing awareness and knowledge of protection from cervical cancer. Limitation of the study; can not be generalized to the entire community because research studied on women who admitted to primary health care provider at a region of low socioeconomic level.

In conclusion; although most women have heard of cervical cancer, knowledge was low. Also Pap smear screening rate for women was significantly lower. Having Pap smear test for women was affected by age and knowledge level about cervical cancer. Informing women about cervical cancer would be an important intervention. Most important sources of information about cervical cancer were TV-radio (media). Therefore, media should be used as support for source of information of women. Because a large portion of society can be achieved through the media. Results of the study indicate that knowledge of women does not always transform in to behavior. Therefore, family physicians, nurses and midwives who working in primary health care and who

are playing an important role at application of women, must take responsibility in both informative as well as implementation issues. Producing policies including programs and projects by related ministry would be beneficial at increasing the level of knowledge of cervical cancer and Pap smear test application. Researches across the country will be guiding to making policies for these the purposes.

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