

RESEARCH ARTICLE

Knowledge, Attitudes and Practice about Pap Smear Test among Women Living in Bojnourd, North East of Iran: a Population-Based Study

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Abstract

Background: The aim of the study was to assess the extent of knowledge, attitudes and practical behavior of women in Bojnourd concerning the Pap smear test. **Materials and Methods:** This cross-sectional and population-based study was conducted with 1000 Iranian women aged 15-60 years old in Bojnourd city. In order to collect the data, a validated questionnaire was provided in four sections covering demographic information and questions about knowledge, attitude and practice about the Pap smear. Statistical analysis was performed with the Statistical Package for Social Sciences (version 17.0) applying a 0.05 significance level. **Results:** Evaluation of knowledge showed that 146 women (14.6%) had very weak, and 594 women (59.4%) had weak knowledge. In contrast, most of the women studied, 873 (87.3%), had a positive attitude toward the Pap smear test. According to the findings, 375 women (37.6%) had done this test so far. Findings indicated that the extent of knowledge had a meaningful relationship with the attitude status ($p < 0.0001$). Also, there was a meaningful relationship between knowledge and practice, so that the weakest practice was seen in women who had weak knowledge (61.1%), ($p < 0.0001$). **Conclusions:** According to findings of this research, most women do not have an appropriate knowledge about the necessity of having the Pap smear test, so that only a low percentage of women had undergone this test.

Keywords: Pap smear test - cervical cancer - knowledge - attitude - practice - North-east Iran

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Introduction

Nowadays, cancer is an enormous global health burden, in every region and socioeconomic level. Cervical cancer is one of the most common cancers in women and it is the fourth most common cancer-related deaths in women (Onsuz et al., 2014). Although cervical cancer is preventable, annually about half a million women that have cervical cancer are detected all over the world which accounts for 270,000 deaths and makes the second leading cause of cancer in women (Monsonogo et al., 2007; WHO, 2013; Anaya-Ruiz et al., 2014).

Internationally, cervical cancer is the second common cancer among women (Akujobi et al., 2008), also it is a major cause of cancer mortality in low-income countries (Ilter et al., 2010; Wright et al., 2010) and 85% of these mortalities occur in developing countries (Serrano et al., 2014). According to these reasons, cervical cancer remains as a serious health problem in the world. In developing countries, which do not have screening programs, cervical

cancer is one of the obvious causes of mortality (Othman et al., 2014). However, this cancer is known as a preventable cancer because it has one long pre-invasion step and available cytology screening programs (Monsonogo et al., 2007). From this aspect, identification of risk factors and screening are always considerable health policies in the society (Amarian et al., 2008). The Pap smear test is the most suitable test for screening of cervical neoplasia (Gakidou et al., 2008). In the 1960s and 1970s, incidence rates in the developed countries were similar to those seen in the developing countries today; the subsequent decline in cervical cancer incidence and mortality in high-income countries is largely attributed to effective screening programs (Khan et al., 2014). This test was introduced by Papanicolaou for the first time in order to determine reproduction cycle of animals (Gakidou et al., 2008). The test needs high acceptance by women, high quality in performance and pursuing of abnormal cases. However, in some developing countries, women have very limited knowledge about this cancer (Anaya-Ruiz et al., 2014;

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Onsuz et al., 2014; Ranabhat et al., 2014). The difference in the mortality of cervical cancer between developed and developing countries is directly related to performing or not performing Pap smear tests (Wright et al., 2010). Healthy behavior cognition of these beliefs and evaluation of knowledge about the Pap smear test are necessary in planning of programs in order to improve this activity.

Akujobi and his colleagues, while researching in east north of Nigeria on 220 psychology students, found that the knowledge level of students about cervical cancer is high, but their participation in cervical screening is low (Akujobi et al., 2008). Results of research of Gichangi and colleagues show that the extent of knowledge about Pap smear screening among people who have cervical cancer and healthy people are low in the Kenai (Gichangi et al., 2003). Tung and colleagues assessed 222 Taiwanese women and understood barriers related to worry; embarrassment, stigma, and lack of female physicians as significant factors in the active participation in the screening test (Tung et al., 2010).

Generally, demographic factors and social factors like social class, lack of health insurance, financial parameters and also cultural factors such as beliefs; attitudes and awareness about disease of cervix and screening are important factors of a person's participation in cancer screening (Amarian et al., 2008; Ranabhat et al., 2014). Considering the importance of knowledge, attitude and action of women about the Pap smear, the extent of knowledge, attitude and practice of women in north khorasan-Bojnourd about this test has been studied. Obtained results of this research can provide a compass for applicable studies and instructional plans for screening of cervical cancer.

Materials and Methods

Study design and setting

This cross-sectional, population-based study was conducted to investigate the state of knowledge, attitudes, and practices of women aged 15-60 years old toward Pap smears, in Bojnourd located in the north east of Iran. The research protocol was approved by the ethics committee of Islamic Azad University; Bojnourd branch and all participants gave written informed consent.

Participants

Participants were 1000 married women aged between 15 and 60 years in Bojnourd. The method of sampling was determined orderly from every zone of municipality of Bojnourd on the basis of demographic and settlement information. Participants were selected on the basis of simple random sampling without replacement.

Measures and data collection

This questionnaire contained mostly pre-coded questions, with some open ones. We used and adapted questions taken from questionnaires used in other studies (Gamarra et al., 2005; Amarian et al., 2008). The following instruments were applied:

i) Socio demographic questionnaire: The socio

demographic questionnaire contained questions regarding demographic information including: age, marital status, educational level of the woman and her husband, occupation, number of parturition, family history of cancer, and training history about Pap smears.

ii) Knowledge questionnaire: This questionnaire contained a series of questions to assess knowledge about the Pap smear test. Obtained knowledge scores were classified in five groups, including very weak (0-4 scores), weak (5-8 scores), medium (9-12 scores), good

Table 1. Demographic Characteristics of the Study Population (N=1000)

Participant demographics	Number	Percentage
Age		
13-18	28	2.8
19-23	139	13.9
24-29	298	29.8
30-35	201	20.1
36-41	153	15.3
42-47	93	9.3
>48	88	8.8
Mean ± S.D.	19.1±3.6	
Marital Status		
Married	968	96.8
Divorced or widow	32	3.2
Education Level		
Illiterate	53	5.3
Primary school	148	14.8
Secondary school	196	19.6
High school	364	36.4
Higher education	237	23.7
Employment Status		
Housewife	720	72
Employed	280	28
Gravidity		
0-1	276	27.6
2-3	568	56.8
<4	156	15.6
Type of contraception		
Hormonal	291	31
IUD	99	10.5
Condon	176	18.7
Withdrawal method	374	39.8

Table 2. Knowledge, Source of Knowledge, Attitude and Practice about the Pap Smear Test (N=1000)

KAP	Number	Percent
Knowledge		
Extremely weak	146	14.6
Weak	594	59.4
Mediocre	134	13.4
Good	79	7.9
Excellent	47	4.7
Attitude		
Positive	873	87.3
Unbiased	102	10.2
Negative	25	2.5
Practice		
Weak	621	62.1
Mediocre	289	28.9
Good	90	9

(13-16 scores) and excellent (17-20 scores). Also we considered good and perfect knowledge as constituting the knowledge group.

iii) Attitudes questionnaire: This questionnaire contained a set of phrases to evaluate attitude towards the Pap smear as an uncomfortable experience. Evaluation of the women's attitude was estimated by a three-point Likert scale (positive, negative, and indifferent). Positive attitude was considered as satisfactory.

iv) Practice questionnaire: This questionnaire contained a series of questions about practice of the Pap smear. Obtained practice scores were classified in three groups: good (had done once in a year), mediocre (had done once in 2 or 3 years) and weak practice (has not done this test more than three years prior or never had the test). Women who had a Pap smear test during the past three years were considered as having enough practice.

The questionnaire was tested for content validity by the process of widespread discussion and advice with experts in the respective field as well as published literatures and referral texts. Also the questionnaire was pretested through a pilot study on 30 women who were excluded from survey. Suitable modifications like changing words in some questions were made. The reliability of each questionnaire was calculated by using the method of alpha-Chronbach. It was calculated 0.78 for the knowledge questionnaire, 0.77 for the attitude questionnaire and 0.76 for the practice questionnaire.

Data collection was done by six midwives. They went to the selected participants' homes, demonstrated formal presentations from university, and explained about the objectives of the research. If the participants signed the informed consent, the midwives asked them to fill out the questionnaires at that moment.

Statistical analysis

Statistical evaluation was done using the Statistical Package for Social Sciences (version 17.0). Descriptive statistics were used to calculate frequencies of responses for all demographic, knowledge, attitude, and practice items. Chi-squared analysis was employed to test associations among knowledge, attitudes, and practices.

Also, ANOVA and chi-square were used to determine differences between knowledge, attitude and practice regarding the Pap smear according to participant's characteristics. We considered P value <0.05 as statistically significant

Results

Participant Characteristics: In this study 1000 women had filled out the questionnaires completely. Demographics of the participants about age, marital status, education, gravidity and type of contraception are shown in Table 1.

A large percentage of women (627, 62.4%) had not learned about the Pap smear test. Also the most commonly used sources of information were physician and health practitioners (47.3%).

Knowledge related to Pap smears: Evaluation of women's knowledge showed that a large percentage of participants (594, 59.4%) had weak knowledge; in contrast, only 7.9 percent (79 persons) of women had good knowledge (Table 2).

Attitudes related to Pap smears: The results showed that most of participants (87.3%) had a positive attitude about the Pap smear test, whereas, women with a negative attitude accounted for only 25 persons (2.5%) (see Table 2).

Practices related to Pap smears: According to the findings, 375 women (37.6%) had done the Pap smear test until three years ago; on the contrary, the majority, with a total samples (62.4%) had not done this test yet (Table 2).

Findings about the relations between knowledge, attitude and practice showed that knowledge had statistically significant relationship with attitude ($p < 0.0001$), so that those with median knowledge level had the most positive attitude. Additionally, knowledge was associated with practice, meaning that participants with weak knowledge had weak practice ($p < 0.0001$). However, there was no significant relationship observed between attitude and practice ($p = 0.616$). (Table 3).

Findings about the relation of enough knowledge, attitude and practice with participant's characteristics showed that, significantly greater proportions of enough attitudes were identified among women who reported use of hormonal contraceptive method.

In addition, the majority of women with enough practice had the benefit of secondary education (their spouse also had secondary education), reported use of withdrawal method as a contraceptive method, had 2-3 children, were housekeepers, and their age was 24-29 years.

Table 3. Observing Relations among Knowledge, Attitude and Practice (N=1000)

Knowledge	Attitude			Practice		
	Positive	Unbiased	Negative	Weak	Mediocre	Good
Very weak	112 (76.7)	29 (19.9%)	5 (3.4%)	98 (15.6%)	39 (13.5%)	9 (10%)
Weak	540 (90.9)	47 (7.9%)	7 (1.2%)	379 (61.1%)	60 (9.7%)	51 (8.2%)
Mediocre	121 (90.3%)	12 (9%)	1 (0.7%)	164 (56.7%)	50 (17.3%)	24 (8.3%)
Good	60 (75.9%)	11 (13.9%)	8 (10.1%)	51 (56.7%)	24 (26.7%)	4 (4.4%)
Excellent	40 (85.1%)	3 (6.4%)	4 (8.5%)	33 (5.3%)	12 (4.2%)	2 (2.2%)
Total	873 (87.3)	102 (10.2%)	25 (2.5%)	621 (100%)	289 (100%)	90 (100%)
	P-value<0.000			P-value<0.001		

Table 4. Evaluation of Enough Knowledge, Attitude and Practice Concerning the Pap smear test According to the Characteristics Studied (N=1000)

Participant demographics Number (%)	Enough Knowledge Number (%)	Enough Attitude Number (%)	Enough Practice
Age			
13-18	6(5.3)	5(6.5)	7(1.9)
19-23	23(20.4)	13(16.9)	30(8.1)
24-29	31(27.4)	26(33.8)	150(28.2)
30-35	17(5)	13(16.9)	86(23.1)
36-41	16(14.2)	13(16.9)	72(19.4)
42-47	14(12.4)	40(5.2)	37(9.9)
>48	61(5.3)	3(3.9)	35(9.4)
P- value	0.25	0.428	<0.000
Marital Status			
Married	106(93.8)	75(97.4)	365(98.1)
Divorced or widow	7(6.2)	2(2.6)	7(1.9)
P value	0.244	0.385	0.204
Education Levels			
Illiterate	12(10.7)	1(1.3)	11(0.03)
Primary school	23(20.5)	18(23.4)	43(11.6)
Secondary school	18(16.1)	20(26)	68(18.3)
High school	42(37.5)	28(36.4)	143(38.4)
Higher education	17(15.2)	10(13)	107(28.8)
P value	0.78	0.083	0.001
Employment Status			
Housewife	91(80.5)	64(83.1)	239(64.2)
Employed	22(19.5)	13(16.9)	133(53.8)
P value	0.695	0.393	<0.000
Gravidity			
0-1	25(30.9)	29(37.7)	60(18.8)
2-3	55(58.7)	38(49.4)	254(68.3)
>4	23(20.4)	10(13)	48(12.9)
P value	0.557	0.075	<0.000
Type of contraception			
IUD	12(12.2)	5(7.4)	48(13.4)
Condon	19(19.4)	21(30.9)	93(25.9)
Withdrawal method	34(34.7)	15(22.1)	146(40.7)
P value	0.347	0	0.18
Spouse's educational level			
illiterate	11(9.9)	2(2.6%)	9(2.4%)
Primary school	25(22.4)	25(32.5%)	56(15.2%)
Secondary school	26(23.4)	20(26%)	73(19.8%)
High school	26(23.4%)	16(20.8%)	118(32.1%)
University	23(20.7%)	14(18.2%)	112(30.4%)
P value	0.968	0.459	0.001

Discussion

According to results of this research, most of the women had low knowledge (59.4%) about this test. A study in Brazil reported 46.1% of women interviewed showed adequate knowledge about the Pap test (Fernandes et al., 2009). On the other hand, only 13% of the participants in India were aware of Pap smears (Seth et al., 2005), and among Vietnamese households, less than two-thirds (62%) of the women knew that not receiving regular Pap tests increases the peril of cervical cancer (Do et al., 2007). Only 33% of women in Irbid, Jordan (Amarian et al., 2008), and 37% in Iran, Gonabad (Tabatabaee Kave et al., 2009) had enough knowledge.

According to results, 62.1% of individuals had weak practice related to Pap smears. The most common reason for not having a Pap smear test was lack of disease symptoms, lack of recommendations by physicians and the high cost of doing this test. Tabatabaee depicted that 52%

of persons had weak practice in Iran, Gonabad (Tabatabaee et al., 2009). In a Malaysian survey 25.3% had never had the Pap smear, and only 18.4% had their last examination within the last three years (Chee et al., 2003). Studies of Amarian and colleagues in Gordan showed approximately 95% of women had never done this screening test, also it was mentioned that the chief barriers of not referring were inadequate knowledge about this test, not receiving advice on performing this test by hygienic practitioners and fear of having a bad result (Amarian et al., 2008). Other reasons consisted of not having information about performing this test (Tung et al., 2010; Onsuz et al., 2014), lack of relationship between the health professionals and women (Awodele et al., 2011), high cost and fear of doing this test (Amarian et al., 2008), reluctance to go for medical tests due to the lack of any symptoms and apprehension to have a test that detects cancer (Basu et al., 2006; Tung et al., 2010; Ho et al., 2011).

In general, it seems that the most worldwide reasons

for not doing this test were lack of proper knowledge about its necessity, the procedure of the Pap smear test and no practical relations between people and health professionals. However, in developing countries, knowledge about this cancer is limited and most women have not heard about cervix cancer and don't have any information about this screening test (Kidanto et al., 2002).

Most women (87.3%) had a positive attitude about Pap smear tests. It is a principal reason that lack of knowledge among people is related to defects in hygienic policies and subsequently faults in informing system in Iran. Gamarra and colleagues also mentioned positive attitude in 80.5% of samples; it seems that protective and diagnostic features were important causes (Gamarra et al., 2005).

Findings described that there is a relationship between extent of knowledge, type of attitude and amount of practice, but there is not any relation between the type of attitude and practice. Other studies showed that knowledge of women about this cancer and the protection method had the strongest correlation with practice (Juon et al., 2003). The results of Awodele and colleagues revealed that 182 (91%) of the respondents were aware of Pap smears; however, 159 (79.5%) and 175 (87.5%) of the respondents had never had a Pap smear (Awodele et al., 2011).

As results show, physicians and health protectors were the great source of gaining knowledge by women [47%]. Physicians and health protectors in health care centers can play important roles by paying attention to necessity of doing this test (Chee et al., 2003). Other important sources include radio and television (Tabatabaee et al 2009), schools and public classes (Gregg et al., 2011).

Our results showed the absence of an association between enough knowledge and the variables. Also, all variables, except type of prevention method, did not associate with enough attitudes. However, relationships were found between enough knowledge with education, and enough attitude with education, job, parity and using of contraceptive methods (Gamarra et al., 2005) As about enough practice, we found an association with age, educational level, job, number of children, contraceptive method and husband's education. Some studies have shown a relationship between enough practice with being married, higher incomes, higher education, higher age and using the contraceptive pill or intra-uterine device (Chaudhry et al., 2003; Chee et al., 2003). Other studies have shown enough practice among women with lower income, lower parity and referring to health care unit. On the other hand; a study reported that there was no association between practice and demographic characters (Do et al., 2007). The reason of less percentage of doing this test among older women in our study may have resulted from having enough children and likely their less referring to health centers for postnatal and family planning (Chee et al., 2003). Job, working outside home and upper education may be associated with not having enough time for referring to health center. Also, it may be the fault of informing programs in institutions and universities. In Iran, the middle class refer more to public health centers than the upper and working classes.

The difference between our findings and other research may be related to cultural differences, personal and ethnic

characteristics in Iran and other countries. According to low awareness of women in Bojnourd and their low participation in screening programs of cervical cancer, the necessity of women's training in this case should have priority in hygienic policies of this province.

This study was a preliminary research to assay people's knowledge, practice and attitude about cervical cancer screening restricted to a special geographic area in north-eastern Iran. Similar studies should be done in other areas of the country to generalize the findings. However, the findings of this research are very important for hygienic supervisors and policy makers who provide services for this group.

There are two limitations to this study. The participants' answers probably tended to overestimate the frequency of tests and to underestimate the time of their last test.

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