

RESEARCH COMMUNICATION

Determining Nurse-Midwives' Knowledge of the Pap-Smear Test and their Rate of Being Tested in Turkey

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Abstract

Background: Cervical cancer is one of the most common causes of cancer mortality among women worldwide, but actually is largely preventable. The practice of Pap smear testing (PST) needs to be expanded in order to diagnose cervical cancer at an early stage and thus reduce the burden this women's health problem brings to the society. Effective public education is therefore crucial. Determining the knowledge and practice of nurses in this field will help plan their training and develop the necessary training program with an adequate content. This descriptive study aimed at determining the knowledge on, and status of the PST among the nurse/midwives. **Methods:** The subjects comprised nurse/midwives working in the gynecologic/obstetric clinics of three big hospitals located in the central city of Ankara. The data collected through questionnaire were evaluated by means of the package software SPSS as well as decimal number and Chi-square tests. **Results:** The results revealed that the nurse/midwives had not enough knowledge on PST, of whom 58.1% had got no PST, while a portion of 71.5% of those who had already underwent a PST failed in getting regular tests, and a portion of 73.5% had got no on-job training on the gynecological cancers, and a portion of 66.7% of the trained ones had not any knowledge in respect of PTS. It was determined that there was a significant statistical difference in the level of knowledge on PST in terms of on-job training in respect of the gynecological cancers and the PST history ($p < 0.05$).

Keywords: Pap smear test - nurses/midwives - Turkey

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Introduction

In 2005, there were, according to World Health Organization (WHO) projections, over 500 000 new cases of cervical cancer, of which over 90% were in developing countries. It is estimated that over one million women worldwide currently have cervical cancer, most of whom have not been diagnosed, or have no access to treatment that could cure them or prolong their life. In 2005, almost 260 000 women died of the disease, nearly 95% of them in developing countries, making cervical cancer one of the gravest threats to women's lives. In many developing countries, access to health services is limited and screening for cervical cancer either is non existent or reaches few of the women who need it. In these areas, cervical cancer is the most common cancer in women and the leading cause of cancer death among women (World Health Organization, 2006). Cervical cancer is the eighth most common type of all women's cancers, and the incidence is 4.5 0% in Turkey (Eser and Karakılınç, 2009). The most important feature of cervical cancer is its preventability and good prognosis in case of early detection (Price et al., 1996; Peate, 1999). Cervical cancer has a preinvasive period of 10-15 years, and preinvasive lesions can be

effectively treated. Suitability of the anatomical position of the cervix for physical examination as well as for cellular and tissue analyses makes it possible to conduct detailed investigations. This in turn allows for detection in the preinvasive period, when the disease is asymptomatic (Taşkın, 2009; Kaya, 2009). Early diagnosis of cervical cancer is a way to ensure less damage from the disease to both the individual and the society and combating economic loss caused by the disease. The necessity of an effective screening program is therefore undeniable (Kaya, 2009; Wright and Richart, 1997). Unfortunately, the majority of women in developing countries still do not have Access to cervical cancer prevention programmes (WHO, 2006). The most common and widely accepted screening method against the cancer of the cervix is the PST.

PST is an ideal screening test in many aspects. It is relatively inexpensive, easy to perform, and acceptable to women. Additionally, the false negativity rate of PST can be reduced by repeating the test at regular intervals, taking advantage of the fact that the disease develops over years following a premalignant stage (Kaya, 2009; Taşkın, 2009; Wright and Richart, 1997). It is possible to reduce the incidence of cervical cancer, and mortalities

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associated with it, through appropriate screening programs and effective Pap-smear testing (Smith et al., 2004; Wright and Richart, 1997)

It is important to know the extent to which the society is aware of cervical cancer as a serious women's health problem and of the availability of a screening test that can diagnose the disease at an early stage, as well as the degree of utilization of the test. Studies indicate that PST is now widely known and utilized (Ilter et al., 2010; Erbil et al., 2010; Kalyoncu et al., 2003; Price et al., 1999; Kim et al., 1999)

A community-level PST screening program is not available in Turkey. PST is done only at certain facilities (Early detection, screening and education center of cancer), by certain physicians, or upon the patient's request (Fidaner, 2009) Although far from adequate, efforts are under way in Turkey for early diagnosis and treatment. To expand these efforts nationwide and to increase their success, counseling and public education services appropriate to the entire female population in the country should be offered, especially to address risk groups. To achieve this, all health care staff are expected to provide effective services.

The importance of midwives and nurses on the health care team cannot be denied. All women, whether healthy or ill, can easily establish communication with midwives and nurses on the health care team, who are in closest, longest contact with both diseased and healthy individuals within the society. Because they are both women themselves and easily accessible, nurse-midwives hold a key position in education and counseling services (Turkistanlı et al., 2003). For these reasons, nurse-midwives need to have good theoretical knowledge of cervical cancer and PST, regardless of their field of expertise (Yücel et al., 2009). However, studies indicate that nurse-midwives lack sufficient information in these areas (Yazıcı, 1994; Beydag, 2011; Ackerson, 2010; Ertem, 2009; Yaren et al., 2007; Entrekin and McMillan, 1993).

One of the key components of health care services today is the responsibility of self-care; that is, individuals must appreciate the value of their health and take responsibility for it. In addition to having the necessary theoretical knowledge, nurse-midwives must also grasp the importance of their knowledge, and in full possession of this awareness, must first apply constructive behavioral changes to their self-care. It is believed that health care providers who have not developed their own self-care responsibility cannot be sufficiently successful in transferring the importance of this behavior to, or motivating, the public. Further, nurse-midwives can provide a good role model by demonstrating their own exemplary health behavior, thus increasing the efficiency of the services and education they provide Various studies indicate that healthy living behavior of health care providers is mediocre at best, and that providers are far from being excellent role models for a healthy lifestyle (Beydag, 2011; Ertem, 2009; Silva et al., 2009; Yaren et al., 2007; Mutyaba et al., 2006). Understanding how much attention nurse-midwives, who are considered key staff in protecting and improving women's health, pay to their own health as women is important for the reasons

explained above.

Nurse-midwives who work in gynecology and obstetrics clinics particularly encounter women and women's health problems on a continuing basis. Therefore, it is believed that nurse-midwives who work in these clinics are aware of the importance of PST in the early diagnosis of cervical cancer, and are likely to be meticulous about their self-care. Based on this assumption, the study was conducted to determine the extent of the knowledge of nurse-midwives about PST and their status of having PST done.

Materials and Methods

Three-hundred-seventy-eight nurse-midwives working at gynecology-obstetrics services of three large teaching hospitals within central Ankara province made up the universe of the study. The study was evaluated across the universe. Nurse-midwives working in operating rooms and neonatal units and as administrative staff were excluded from the study, based on the assumption that their knowledge would be influenced and considering the differences of the client groups they serve. For various reasons 81 of the nurse-midwives could not be reached, and consequently the data were assessed based on 297 participants.

Data were collected using the form developed by the investigator by consulting pertinent resources (Kim et al., 1999; Kalyoncu et al., 2003; Kaya, 2009; Taşkın, 2009). The data collection form consists of three parts. The first part includes personal information on the nurse-midwives; the second part, questions on their knowledge of PST; and the third part, questions exploring their status of having PST.

Before administering the form, the participating nurse-midwives were informed about the purpose of the study, and their oral consent was ensured. The data collection form was given to the nurse-midwives in their worksites, and the completed forms were collected by the investigator.

Age, marital status, profession, type of clinic where the participant works, status of working in a gynecology clinic, last school completed, obstetrical history, and status of having received in-service training made up the independent variables; and knowledge of PST and characteristics related to the status of having had PST constituted the dependent variables of data evaluation. Percentile numbers and the chi-square test were used in evaluation.

Results

The study determined that 73.7% of the nurse-midwives were in the 22-34 age group, 73.4% were married, 38% had graduated from vocational health high schools, 67% were midwives, 58.9% were working in obstetrics clinics, and 60.6% had no prior work experience in gynecology clinics. Of the participants, 73.5% had received no in-service training (IST) on cancers that are specific to women, and 66.7% of those who did have training had received no information on PST during the

Table 1. Distribution of Nurse-Midwives' Knowledge Related to the PAP-Smear Test

PST-Related Knowledge	Number	%
Purpose of PST** n: 281*		
Diagnosis of cancer	144	(51.2)
Diagnosis of infection/cervical erosion	142	(50.5)
Cancer screening	54	(19.2)
Follow-up subsequent to cancer treatment	21	(7.5)
Treatment	11	(3.9)
Don't know	18	(6.4)
Starting Time of PST** n: 266*		
With the onset of sexual activity	107	(40.2)
After the age of 30-40/at menopause	106	(39.8)
With a relevant health problem	42	(15.8)
At the ages of 18-21	27	(10.1)
Don't know	14	(5.3)
Anytime after the onset of menses	10	(3.4)
Following pregnancy/childbirth	6	(2.3)
Frequency of PST n: 291*		
Once a year	176	(60.7)
Once every six months	93	(32.0)
Once every 2-3 years	7	(2.3)
Once every 5 years	3	(1.0)
When a gynecological health problem	7	(2.3)
Don't know	5	(1.7)
Conditions Requiring More Frequent PST** n: 248*		
A gynecological health problem (bleeding, pain, erosion)	142	(57.2)
Suspicion of cancer	122	(49.2)
A complaint of discharge/infection	111	(44.7)
During menopause	18	(7.2)
Those who are being treated for cancer	15	(6.0)
Those in a polygamous relationship	8	(3.2)
Don't know	17	(6.8)
Other***	7	(2.8)
Best Time to Take a Specimen for PST n: 271*		
Middle of the menstrual cycle ¹	121	(44.7)
End of the menstrual period	114	(42.1)
Days preceding menstruation	11	(4.0)
During menstruation	5	(1.8)
Anytime except during menstrual period	10	(3.7)
Don't know	10	(3.7)
Swabbing Location for the Specimen n: 283*		
Cervix/cervical canal	206	(72.8)
Vagina	48	(16.9)
Cervix and the vagina	13	(4.6)
Female reproductive organs	5	(1.8)
Don't know	11	(3.9)

*Number of respondents; percentages are based on n; **More than one response to the question; ***This group includes smokers, presence of abdominal swelling, beginning sexual activity at an early age, married or sexually active individuals, and myomas;

training. It was determined that 75.7% of those who were trained had received their training from nurses. As vast a portion as 87.5% of the nurse-midwives were found not to have provided any information related to PST to healthy/diseased individuals during clinical work.

Of the nurse-midwives who participating in the study, 61.8% had been pregnant once or twice; 47.6%, had given birth once; and 65.9%, had not had an abortion/miscarriage.

Our study concluded that one-third of the nurse-midwives (33.2%) had never had a pelvic examination,

and that a significant portion of those who did have examinations had them for such compelling reasons as pregnancy/childbirth (46.1%) and intra uterine device (IUD) insertion (43.6%). In addition to their contraceptive effect, IUDs have a secondary benefit of driving women to seek gynecological examinations. It was found that 60.5% of those who had had a gynecological examination received a diagnosis of infection as a result of the procedure.

When we queried the purpose of PST, a significant portion of the nurse-midwives answered the question with "diagnosis of infection" (50.5%) and "diagnosis of cancer" (51.2%). The proportion of those who responded with "screening test" was only 19.2% (Table 1).

Examination of the answers to the starting time of PST showed that 40.2% of the nurse-midwives thought PST should begin "with the start of sexual activity." While 39.8% stated that PST should be performed "after the ages of 30-40/during menopause," 15.8% responded as "when there is a relevant health problem," and 10.1% as "after the ages of 18-21." A significant 10.1% of the respondents were noted to answer the question with "don't know" or incorrectly, with "During menopause, As of the onset of menstruation, Following pregnancy or childbirth, and Any woman can be tested at anytime." (Table 1)

Analysis of the responses to the question "How frequently should a woman have PST under normal circumstances?" showed that more than half (60.7%) of the nurse-midwives correctly answered the question by stating that PST should be performed once a year. Incorrect answers in the forms of "Once every six months, Once every 2-3 years, When there is a gynecological health problem, Once every five years, or Don't know" were received from 39.3% of the respondents (Table 1).

Analysis of the responses to the question "Please state the conditions requiring more frequent PST" showed that 57.2% of the nurse-midwives thought that PST should be performed more frequently than usual "when there is a gynecological health problem;" 49.2%, "when cancer is suspected;" 44.7%, "when there is a complaint of discharge/infection." However, a negligible portion of the participants (6%) provided answers related to other conditions {early start of sexual activity (2.8%), polygamous relationships (3.2%), history of HPV infection (0), etc.} known to be risk factors in the etiology of cervical cancer. It was noted that 6.8% of the participants had no knowledge related to the question (Table 1).

A look at the distribution of the answers to the question "Please state the best time for taking a specimen for PST" showed that 44.7% of the nurse-midwives responded correctly with "midway in the menstrual cycle," while over half (55.3%) gave incorrect answers including "Immediately after the menstrual period stops, Before menstruation, During menstruation, Anytime except during the menstrual period," or showed that they had no knowledge by answering "Don't know." (Table 1)

It was determined that 72.8% of the nurse-midwives defined the anatomical location for PST swabbing as only the cervix or the cervical canal. While those who answered only "the vagina" made up 16.9% of the participants, the proportion of those who gave the correct answer of "the

cervix, the cervical canal, and the vagina,” which is closest to the definition in literature, was a mere 4.6%(Table 1).

The study determined that over half of the nurse-midwives (58.1%) did not have PST, and that approximately half of those who did (51.3%) had their first PST between the ages of 26 and 35. The nurse-midwives defined the frequency of having PST as “when I have a problem” (29.3%), “once a year” (28.5%), and “only once until now” (20.2%). A look at the nurse-midwives’ reasons for having PST included health checkup in approximately half of the respondents (51.6%), discharge and itching (33%), and doctor’s request for 30.6%.

Analysis of the reasons that the nurse-midwives gave for not having PST revealed that the vast majority (93.6%) neglected to have the test because they felt no need for it. Most of the respondents who did not feel a need for PST (70.8%) ignored it because they had no complaints/problems that indicated a need for the test, and 31.8%, because they were not sexually active.

Analysis of PS testing status of nurse-midwives based on certain independent variables of the study showed that the testing rate of nurse-midwives in the 35-51 age group (62.8%) was nearly double that for the 22-34 age group (34.4%).

A look at the distribution of having PST based on the nurse-midwives having received IST on cancers specific to women showed that 58.4% of those with IST had PST done, as opposed to 35.7% who had not been trained. The differential between the groups was found to be statistically significant ($p<0.05$).

Regarding the distribution of nurse-midwives who had PST based on certain fertility characteristics, it was noted that while 70.7% of those with three or more pregnancies had PST done, only 39.3% of those who had no history of pregnancy had the test. A similar situation exists for the total number of deliveries. A greater proportion (62.8%) of those who have had 2-3 deliveries have PST done compared to nulliparous nurse-midwives (30.8%). PST status by total number of abortions/miscarriages was distributed as 71.2% of those who have had 1-2 abortions/miscarriages, 60% of those who have had 3-4, and 45.9% of those who have had none. For all these conditions, the differentials between the groups were statistically significant ($p<0.05$).

Examination of the status of the nurse-midwives in providing information on PST according to certain characteristics showed that 17.2% of those who have PST done, and 9.3% of those who do not have PST done provided information to the women/patients about the test.

Analysis of the status of the nurse-midwives in providing information on PST based on having received IST on cancers afflicting women showed that the state of providing information to healthy/diseased clients is notably higher (21.1%) in the group who has had IST than in the group with no training (9%). The differential between the groups was found to be statistically significant ($p<0.05$).

Discussion

The practice of PST needs to be expanded in order to

diagnose cervical cancer at an early stage and thus reduce the burden this women’s health problem brings to the society. Effective public education is therefore crucial. Determining the knowledge and practice of nurses in this field will help plan their training and develop the necessary training program with an adequate content.

A look at the knowledge of PST of the nurse-midwives who participated in our study reveals that a significant portion is either misinformed or lacks adequate information. A study Lundgren, et al. carried out with 66 midwives in Switzerland found that they did not have adequate information on cervical cancer and screening (Lundgren et al., 2000). Similarly Pınar, et al. and Özdemir and Bilgili’s studies found that nurses did not have adequate information on cervical cancer and screening (Pınar et al., 2007; Özdemir and Bilgili, 2010). There are similar studies in the literature supporting this view. (Mutyaba et al., 2006; Yaren et al., 2008; Ertem, 2009; Beydag, 2011;). These studies support the conclusion we reached in our study.

PST is cited in literature as a screening test for cervical cancer (Wright and Richart, 1997; Padbury, 2001; Taşkın, 2009; Kaya, 2009). The purpose of performing PST is to select the sub-group that requires advanced diagnostic testing for cervical cancer, and to detect at an early stage the transmutations on the cellular level that may develop into cancer. PST alone is not capable of determining with certainty the presence of cervical cancer (Wright and Richart, 1997; Padbury, 2001). The answer of “cancer diagnosis” that 51.2% of the nurse-midwives gave to the relevant question is an important indicator that can shed light on planning their PST-related training.

PST helps diagnose other diseases of the cervix, particularly infectious diseases (Padbury, 2001; Levi et al., 2011). Therefore, although the answer of “diagnosis of infection” by 50.5% of the nurse-midwives can be considered partially correct, the main purpose of PST is to screen for cancer of the cervix. Indeed, only one-fifth of the nurse-midwives correctly answered the question about the purpose of PST as “screening.” In the 2009 study of Ali et al’s with Interns and nurses working in in three major teaching hospitals in Karachi, Pakistan, PST was identified by 54 % of the participants as an early diagnosis method for cervical cancer (Ali et al., 2009). In the 1994 study of Yazıcı with nurse-midwives working in a health post in Trabzon, PST was identified by 60% of the participants as an early diagnosis method for cervical cancer. Yazıcı found this finding to be challenging, considering that despite being both members of the health care team and women, not all of the midwives were familiar with PST (Yazıcı, 1994). Our study has an even lower rate of awareness of the purpose of PST; we believe this differential is due to the greater coverage of disease prevention and precautions at the primary health care level, where one of the main responsibilities is screening.

A study conducted by Lee on 102 Korean-American women reports that the majority of the women were aware of the purpose of PST (Lee, 2000). That women in this group who have no health care training are better informed about the purpose of PST than the professionals in our study suggests that the differential may be rooted

in the greater efficiency of the national screening policies in the United States.

Literature recommends "annual PS testing and pelvic examination at the onset of active sexuality, or at the age of 18" (American Cancer Society (ACS), 2010; Taşkın, 2009; Wright and Richart, 1997). Half of the nurse-midwives in our study correctly answered the question with "at the ages of 18-21" (10.1%) and "when sexual activity begins" (40.2%). Nevertheless, it is believed that all nurse-midwives, and particularly those who work in the field of women's health, should have accurate and adequate information on this subject.

In a study of 242 Chinese women by Twinn et al, 34% of the participants stated that PST should be done as of the beginning of sexual activity (Twinn et al., 2002). The proportion is consistent with our study; however, that the participants in our study are health care staff working in a field that provides women's health services implies that more of the participants should have been knowledgeable about the subject.

Literature recommends that all women who are currently sexually active, or have been sexually active in the past, or who are 18 years of age have an annual PST and pelvic examination, and that in the presence of normal examination findings for three or more consecutive years, the test be repeated less frequently, or according to the directions of the physician (Taşkın, 2009; ACS, 2010). The majority of the nurse-midwives in our study were found to give answers comparable to the literature. In Ertem's study, the proportion of nurse-midwives who had correct knowledge of the frequency of PST was 80.4% (Ertem, 2009). This finding is higher than our study. In Yazıcı's 1994 Trabzon study, the proportion of nurse-midwives who had correct knowledge of the frequency of PST was 60% (Yazıcı, 1994). This finding is similar to that of our study. In Yi's study of women Vietnamese university students who live in the U.S., only 29.3% of the participants were found to have no knowledge about the frequency of PST (Yi, 1998). Even though the correct answer rate of nurse-midwives to this question appears to be high, a significant 39.3% gave incorrect answers. This situation suggests that the nurse-midwives, who are expected to take on the important roles of encouraging women to have PST and providing public education services on the subject, will not live up to the task.

In Twinn et al's study of 242 Chinese women, 58% of the participants cited becoming sexually active at an early age, and 86%, having multiple partners, as conditions requiring more frequent PST, although they were not members of a health care profession (Twinn et al., 2002). These rates are considerably higher than those found in our study. In our study, none of the risk factors requiring frequent PST was adequately known to the nurse-midwives—the rate of awareness of the risk factors never exceeded 58%. This outcome is disappointing as it is evidence that the knowledge of nurse-midwives, who are expected to identify the risk factors and provide the necessary counseling in the prevention of cancer, is far from satisfactory.

The days corresponding to the middle of the cycle are cited in literature as the best time to take a specimen

for PST, although the procedure can be performed at other times except during the menstrual period (Peate, 1999; Rohan and Stromborg, 2002). In our study we found that 44.7% of the nurse-midwives correctly answered the question "specify the best time for PST swabbing" as "the days corresponding to the middle of the menstrual cycle," whereas more than half (55.3%) answered with "Immediately after menstruation ends, Before menstruation, During menstruation, Anytime except during menstruation, and Don't know," which indicates a lack of accuracy. This situation suggests that the knowledge of the nurse-midwives is insufficient and that they will be inadequate in referring women to appropriate health care services at the proper time as they provide public education services.

It was noted that 72.8% of the nurse-midwives defined the anatomical location for PST swabbing as only the cervix/cervical canal. Although the answer is not inaccurate, it is also incomplete because the anatomical area for PST swabbing is specified in literature as the endocervical canal, the cervical surface, and the posterior fornix (Taşkın, 2009; Wright and Richart, 1997). The proportion of participants who responded as "the cervix and the vagina," which approximates the definition in literature, was only 4.6%. This outcome demonstrates that a vast majority of the nurse-midwives working in gynecology and obstetrics clinics are not sufficiently aware of the subject.

More than half of the nurse-midwives in our study never had PST, and of those who did have the test, only approximately one-quarter have it done regularly. That the nurse-midwives often have the test done when they have a complaint (29.3%) is indicative of a perception of the procedure as a diagnostic test. Similarly, Yaren et al's study of nurses, 50.4% did not have pap smear (Yaren et al, 2007) and Ertem's study of the nurses, 53.6% did not have pap smear (Ertem, 2009). These in turn suggests that the nurse-midwives are not fulfilling their responsibility for their own health, lack full awareness, and cannot act as good role models for the society. Further, it can be added that health care staff who have not developed self-care responsibility will fail to grasp the importance of the problem and will fail in appropriately motivating the community.

In Pasinlioğlu and Gözüm's investigation, it is emphasized that health care providers are mediocre in fulfilling their own health responsibilities, and therefore are not a good role model for healthy living behavior (Pasinlioğlu and Gözüm, 1998). The result of our study supports this belief.

Özdemir and Bilgili's research of nurses in Ankara determined that the rate of regular PS testing was 23.7%. (Özdemir and Bilgili, 2010). Beydag's study of the nurses/midwives, 37.5% have routine gynaecological controls without any complains (Beydag, 2011). In our study, regular PS testing rate of a total of 226 currently married or divorced/separated nurse-midwives was 19%. Considering that PST is part of the training provided to nurse-midwives and that testing services are more accessible to them than their counterparts, the emergence of similar findings in these studies is thought-provoking.

Kaplan, et al.'s research of gynecology and obstetrics nurses in Israel determined that the rate of regular PS testing was 83% (Kaplan et al., 2002). In a random study by Price, et al. on 335 randomly selected women, it was found that three-quarters of the participants (75%) had had a PST during the last two years and were planning to have the test repeated in regular intervals (Price et al., 1996). In the study Holrody et al conducted on 467 female clerical and technical support staff aged between 20 to 60 years employed in the academic departments of one tertiary institution in Hong Kong, 56.5% of the women were found to have had PST (Holrody et al., 2001). The rate of having PST in all of these studies is demonstrably higher than in ours. We believe this disparity to be due to the differences in the levels of attention given to screening policies, primary health care services, self-care, and health education across the countries.

Even though the proportion of those who have the test for health checkup (51.6%) seems high in our study, we believe that this level is still low for health care professionals, which may be rooted in a less-than-thorough understanding of the importance of screening and early diagnosis among nurse-midwives.

Our study determined that a vast majority of the nurse-midwives (93.6%) who did not have PST done passed over the test because they felt no need for it. This lack of need on the part of the nurse-midwives is evocative of a failure on their part to fulfill their self-care responsibility. PST is a preventive screening test that should be done regularly, without the presence of any health problem. The reason of "not having any complaints" that the nurse-midwives gave for not having the test done suggests that they are misinformed about the purpose of PST. Similar to the findings of our study, in the study conducted by Yaren et al at a Pamukkale University Hospital in Denizli, it was determined that reasons of not performing pap smear test were virginity 31.2%, forgetting 39.1% and feeling embarrassed 29.7% (Yaren et al., 2007). In the study of Ertem was determined that reasons of not performing Pap smear test were virginity 67.3%, forgetting 21.2% and feeling embarrassed 11.5% (Ertem, 2009).

It is believed that the association of the integrity of the hymen with virtue in Turkey is one of the primary reasons for the avoidance of PST by women who are not sexually active. Twinn et al found in their study of 242 Chinese women that 35% of the participants who did not have screening had never been in a sexual relationship (Twinn et al., 2002). This finding supports our study, suggesting that the outcome is a product of the eastern culture prevalent in China and Turkey.

The differential between the ages of the nurse-midwives and their status of having PST done was found statistically significant ($p < 0.005$). Those who are more advanced in years are more likely to have PST than the young. It is thought that the incidence of pelvic examinations and PSTs increase in proportion to gynecological problems as well as the number of pregnancies and deliveries that women experience as they get older.

Our study concluded that nurse-midwives who received IST on cancers specific to women had a higher rate of having PST. This difference is thought to be due to

the increased awareness created by the training. Our study also found a meaningfully higher incidence of PST among nurse-midwives with a greater number of pregnancies, childbirths, and abortions/miscarriages in their history. This is thought to be caused by the inevitability of pelvic examinations in the face of pregnancy, delivery, and abortion/miscarriage, and, considering that 30.6% of the nurse midwives had PST upon the request of a physician, by the detection of suspected or risky cases during these examinations and the ensuing tests. The increase in the number of pelvic examinations in tandem with pregnancies, deliveries, and abortions/miscarriages, and routine post-abortion/miscarriage PST required as a policy by some institutions may also account for our finding.

A study conducted in 2002 in Eskişehir on 205 women by Kalyoncu, et al. showed that the rate of hearing about and having PST grew in parallel to the increase in the number of pregnancies and abortions/miscarriages. Although a meaningful correlation was lacking between hearing about PST, followed by having the test, and the number of deliveries, such a correlation did exist for abortion/miscarriage (Kalyoncu et al., 2003). These results bear similarity to our study.

We determined that the proportion of nurse-midwives who gave PST-related information to women/patients in the group who had PST done was approximately double that for the group who did not have PST ($p < 0.05$). Nevertheless, the percentage of the group who provided PST-related information is quite low, which is, again, ironic for nurse-midwives who have public health education as one of their primary responsibilities.

In a study involving nurses working in MoH and university hospitals in Ankara, Bedük and Şen investigated the self-examination status recommended for early diagnosis of all cancers, and the rate of providing information to individuals/patients for early diagnosis of cancer. They found that the nurses who provided public education about early detection performed these self-examinations to a great extent (Bedük and Şen, 1992). Although this result exhibits a certain parallelism to our study, the proportion of nurses having PST done was not as great in our investigation as that found in this study. Despite this, the meaningful abundance of the behavior of providing information on PST in the group that has PST done suggests that when health care providers practice constructive health behavior intended to protect and improve their own health, they are motivated to educate the public to act likewise.

Bolsoy and Şirin determined in a study they conducted at Maternal-Child Health and Family Planning Centers in Izmir that 26.9% of the midwives and nurses had received in-service training on the early diagnosis and prevention of gynecological cancers (Demirel Bolsoy and Şirin, 1998). This ratio is consistent with the one found in our study (26.5%). In another study, conducted by Bedük and Şen among nurses working in MoH and university hospitals in Ankara, 15.5% of the nurses were found to have received cancer training, with 42% of these also having been trained in the early diagnosis of cancer (Bedük and Şen, 1992). Similarly, Pınar et al's study, 16% of the nurses were found to get information about cervical cancer in service training

(Pinar et al., 2007) These findings suggest that in Turkey, IST activities aimed at nurse-midwives are inadequate.

One of the primary responsibilities of nurse-midwives is public health education. The low incidence of provision by the nurse-midwives of any information on PST in our study may be attributed to their failure to grasp the importance of their role in early diagnosis by offering health education, or to a lack of expectation on the part of the nurse-midwives' home institutions to take on such a role. Similarly, that nurse-midwives conducted most of the in-service trainings, and that no information on PST was included in the vast majority of these trainings suggest that the trainer nurses in these institutions have also failed to recognize the importance of PST.

When, in their study involving nurses working in MoH and university hospitals in Ankara, Bedük and Şen measured how receiving in-service training in the early diagnosis of cancer reflected on the behavior of providing information related to early detection of cancer to the patients, 32.2% of the nurses with IST, compared to 16.7% who had not been trained, stated that they offered information on the early diagnosis of cancer (Bedük and Şen, 1992). This finding supports our study. It is also significant in terms of increasing the effectiveness of the information that nurses provide to patients about PST when the nurses receive IST on the test.

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