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Knowledge Assessment of Female Health Workers Regarding the Risk Factors of Cervical Cancer and the Practice of Pap Smear Screening Test

Melek Doğan¹, Mine Bekar^{2*}

¹Kayseri City Hospital, Kayseri, Turkey

²Department of Midwifery, Faculty of Health Sciences, Sivas Cumhuriyet University, Sivas, Turkey

*Corresponding author: Mine Bekar, Department of Midwifery, Faculty of Health Sciences, Sivas Cumhuriyet University, Sivas, Turkey.

Email: minebekar@gmail.com

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Abstract

The present study is conducted in order to assess the knowledge of Female Healthcare Workers (FHWs) regarding the risk factors of cervical cancer and the practice of Pap smear screening test. The population of this descriptive study consisted of 1152 FHWs including doctors, nurses/midwives, physiotherapists, biologists, dieticians and healthcare technicians (laboratory, X-ray, emergency medical services, anesthetics, medical secretaries) working at Faculty of Medicine in Erciyes University (EÜTF). The entire population is taken as sample. Apart from those who refused to take part in this study, are on vacation or have a sick note, 950 FHWs have participated.

According to findings in this study, 64.2% of the FHWs are in the age range of 25-34 years old, 29.9% are university graduates, 52.6% are nurses and midwives, 21.1% are technicians, 54.6% are married, 51.7% have never had a pelvic exam and 80.5% have not undergone Pap smear screening test before. The attitude of FHWs towards having a pelvic exam, undergoing a Pap smear screening test, informing individuals on cervical cancer differs based on their age, marital status, educational status and occupation and this difference is found to be statistically meaningful ($p < 0.05$). The knowledge and practices of FHWs on the risk factors of cervical cancer and Pap smear screening test were identified to be insufficient.

Keywords: Cervical Cancer; Female Health Workers (FHWS);

Pap Smear Screening

Material and Methods

The population of the study is composed of FHWs working at EÜTF. In this study the entire population is taken as sample (N=1152). The study, conducted between 24th of April and 6th of July 2007, included a total number of 950 FHWs who were available at the time and had given their consent to participate in the study. A 17-item personal information form I and a 34-item information form II covering the risk factors for cervical cancer, Pap smear screening and HPV were used as data collection tools in this research. These questionnaires had been prepared by the authors of the present study. FHWs were asked to fill out the forms individually within office hours and in a suitable, distraction-free environment at their institutions of employment. The researcher was present at the unit of FHWs until each participant had completed the filling out the questionnaires and collected them immediately afterwards. The questionnaire with 34 items have included true/false questions with pre-designed answers with yes/no/don't know options. The forms were evaluated in such a way that each correct response was given 2 points and each false response was given 0 points. The highest score in knowledge-based questionnaire was 68 %. The data were analyzed by using the Statistical Package for Social Sciences (SPSS) software (Table 1).

Demographic Characteristics (n=950)					
Marital Status	No	%	Educational Status	No	%
Married	519	54,6	High School	35	3,7
Single	411	43,3	Associate's Degree	395	41,6
Divorced	20	2,1	Bachelor's Degree	284	29,9
Department			Master's Degree	135	14,2
Polyclinic	249	26,2	Above Master's Degree	101	10,6
Service	291	30,6	Occupation		
Intensive Care	105	11,1	Doctor	180	18,9
Emergency	49	5,2	Nurse and Midwife	500	52,6
Nutrition and dietetics	9	0,9	Technicians	200	21,1
PTR	22	2,3	* Diet-PTR-BioPharma	70	7,4
Laboratory	99	10,4	Age	No	%
Diagnostic imaging	42	4,4	19-24 years old	195	20,5

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Operating Room	30	3,2	25-29 years old	359	37,8
Pharmacy	4	0,4	30-34 years old	251	26,4
Administrative Unit	26	2,7	35-39 years old	95	10
Primary Medical Unit	24	2,5	40-44 years old	38	4
			45 years old and older	12	1,3

Table 1: Distribution of FHWs based on their Sociodemographic Attributes.

According to the findings of the study, 37.8 % of FHWs are within the age group of 25-29 years and 26.4% are within the age group of 30-34 years; 30.6% are working at the service; 41.6% hold an associate's degree, 29.9% hold a bachelor's degree; 52.6% are nurses and midwives, 21.1% are technicians, 18.9% are doctors, 7.4% are in the group of dieticians, physiotherapists, biologists and pharmacists; and 54% are married.

The distribution of FHWs based on their latest pelvic examination experience reveals that while 48.3% of FHWs underwent pelvic examination, 51.7% have never had a pelvic examination; among the examined FHWs 48.8% had the pelvic examination for pregnancy- and birth-related purposes and 33.8% were diagnosed with normal findings; 80.6 % between the unexamined participants stated that they did not feel the need for pelvic examination and 10.6% were sexually passive as summarized in Table 2.

Last Pelvic Examination	Number	%	Last Pap Smear Screening Test	Number	%
Pelvic Examination Status	n=950		Pap Smear Screening Status	n=950	
Examined	459	48,3	Screened	185	19,5
Unexamined	491	51,7	Unscreened	765	80,5
Reason for Undergoing a Pelvic Examination	n=459		Frequency of Having Pap Smear Screening Test	n=185	
Bleeding and Menstrual Irregularities	79	17,2	Once every 6 Months	2	1,1
Pain	21	4,5	Once a Year	33	17,8
Pregnancy- and Birth-Related Reasons	224	48,8	Once in every 3-5 Years	25	13,5
Genito-Urinary System Infections	56	12,2	In case of a Complaint	57	30,8
Family Planning Methods	32	6,9	Requested by a Doctor	68	36,8
Health Check-Ups	47	10,2	Reasons for Having Pap Smear Screening Test	n=185	
Diagnosis after Pelvic Examination	n=459		Regular Health Check-Ups	48	25,9
Cervical Erosion	21	4,6	Requested by a Doctor	82	44,3
Cervicitis	8	1,7	History of Cancer in Family and Cancer-Related Concerns	3	1,62
Myoma	14	3,1	Discharge, Itching, Bleeding	52	28,1
Ovarian Cysts	46	10	Diagnosis after Pap Smear Screening Test	n=185	
Pregnancy	152	33,1	Normal Findings	127	68,6
Normal Findings	155	33,8	Cervical Erosion	7	3,8
Reproductive Infection	63	13,7	Cervicitis	9	4,9
Reason for Not Undergoing a Pelvic Examination	n=491		Reproductive Infection	36	19,5
Not to be in need	396	80,6	I don't know	6	3,2
Avoidance	18	3,6	Reasons for not Having Pap Smear Screening Test	n=765	
Fear	4	0,8	Not to be in need	450	58,8
Not to be under risk	18	3,6	Avoidance	34	4,4
Lack of Information	3	0,6	Fear	7	0,9
Sexually Passive	52	10,6	Not to be under risk	57	7,5
Advised People	n=216		Lack of Information	44	5,8
Mother	32	14,9	Sexually Passive	173	22,6
Family Members	21	9,7	Knowledge Transfer Status	n=950	
Relatives (Acquaintances)	46	21,2	Source of Information	216	22,7
Spouse	3	1,3	Not a Source of Information	734	77,3
Public, Patient	114	52,9			

Table 2: Distribution of FHWs based on their Last Pelvic Examination or Pap Smear Screening Test Experience.

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The distribution of FHWs based on their latest pap smear screening test indicates that 19.5% of FHWs had pap smear screening test, 80.5% have never had the test before; among the screened FHWs 36.8% had the test when requested by their doctor, 44.3% stated that they had been screened with the sole reason that such procedure had been requested by their doctor; 68.6% of the FHWs were diagnosed with normal findings while 19.5% were diagnosed with urinary tract infection,

58.5% between the unscreened FHWs stated that they did not feel the need for having Pap smear screening test and 22.6% were sexually passive as summarized in Table 2. In addition, 77.3 % of the participants declare that they do not advise people about cervical cancer; 22.7 % state that they instruct others on cervical cancer of which while 52.9 % inform public and patients, 21.2% inform relatives and acquaintances.

Demographic Characteristics	Pap Smear Screening Status					Knowledge Transfer Status				
	Screened		Unscreened		Analysis Result	Source of Information		Not a Source of Information		Analysis Result
	No	%	No	%		No	%	No	%	
Age										
19-24 years old	5	2,7	190	24,8	X ² =182,06	60	27,8	135	18,4	X ² =15,36
25-29 years old	34	18,4	325	22,5	P=0,000	78	36,1	281	38,3	P=0,009
30-34 years old	67	36,2	184	24,1		40	18,5	211	28,7	
35-39 years old	49	26,5	46	6		24	11,1	71	9,7	
40-44 years old	22	11,9	16	2,1		10	4,6	28	3,8	
45years old and older	8	4,3	4	0,5		4	1,9	8	1,1	
Occupation										
Doctor	32	17,3	148	19,3	X ² =8,74	84	38,9	96	13,1	X ² =101,52
Midwife-Nurse	110	59,5	390	51	P=0,033	112	51,9	388	52,9	P=0,000
Technicians	26	14,1	174	22,7		7	3,2	193	26,3	
Diet-PTR-BioPharma	17	9,2	53	6,9		13	6	57	7,8	
Educational Status										
High School	9	4,9	26	3,4	X ² =28,36	7	3,2	28	3,8	X ² =79,65
Associate's Degree	101	54,6	294	38,4	P=0,000	36	16,7	359	48,9	P=0,000
Bachelor's Degree	27	14,6	257	33,6		84	38,9	200	27,2	
Master's Degree	28	15,1	107	14		50	23,1	85	11,6	
Above Master's Degree	20	10,8	81	10,6		39	18,1	62	8,4	
Marital Status										
Married	175	94,6	344	45	X ² =162,31	98	45,4	421	57,4	X ² =13,28
Single	3	1,6	408	53,3	P=0,000	116	53,7	295	40,2	P=0,001
Divorced	7	3,8	13	1,7		2	0,9	18	2,5	
Total	185	100	765	100		216	100	734	100	

Table 3: The Distribution of FHWs based on their Pap Smear Screening Status according to their Demographic Characteristics and Knowledge Transfer Status on Cervical Cancer.

A significant statistical difference was found between Pap smear screening status and of FHWs in terms of their age, occupation and marital status ($p < 0.05$).

A significant statistical difference was found between knowledge transfer status of FHWs about cervical cancer in terms of their age, occupation and marital status ($p < 0.05$).

Statements	Expected Response Yes-No	Correct Responses		False Responses		Do not know the answer	
		No	%	No	%	No	%
1. Early diagnosis and treatment of cervical cancer is possible	Yes	883	92,9	3	0,3	64	6,7
2. Every sexually active woman must have pap smear screening test	Yes	793	83,5	25	2,6	132	13,9
3. Bleeding in between cycles is an early symptom of cervical cancer	Yes	507	53,4	72	7,6	370	38,9
4. Smoking is a risk factor for cervical cancer	Yes	628	66,1	63	6,6	259	27,3
5. Cervical cancer and precancerous cells are not related with HPV	No	345	36,3	86	9,1	519	54,6
6. Poor nutrition and malnutrition are risk factors for cervical cancer	Yes	368	38,7	194	20,4	388	40,8
7. Cervical cancer have begun to be observed at mid-thirties also	Yes	569	59,9	64	6,7	317	33,4
8. Overweight/obesity are not risk factors for cervical cancer	No	307	32,3	186	19,6	457	48,1

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9. Pap smear test is performed for screening purposes	Yes	746	78,5	58	6,1	146	15,4
10. Having more than one sexual partner is a risk factor for cervical cancer	Yes	729	76,7	32	3,4	189	19,9
11. The long-term effects of HPV may lead to infertility	Yes	420	44,2	53	5,6	477	50,2
12. Having a history of cancer in the family is not a risk factor for cervical cancer	No	637	67,1	107	11,3	206	21,7
13. Every woman is at equal risk in terms of contracting cervical cancer	No	513	54,0	269	28,3	168	17,7
14. HPV infection is a risk factor for cervical cancer	Yes	595	62,6	19	2,0	336	35,4
15. HPV causes pain during sexual intercourse	No	72	7,6	382	40,2	496	52,2
16. Increase in the amount of vaginal discharge, change in its color are not early symptoms of cervical cancer	No	461	48,5	162	17,1	327	34,4
17. HPV is a sexually transmitted virus	Yes	645	67,9	21	2,2	283	29,8
18. Use of oral contraceptive is not a risk factor for cervical cancer	No	215	22,6	341	35,9	394	41,5
19. Gynecological examination shall only be performed when a gynecological problem occurs	No	829	87,3	48	5,1	73	7,7
20. Use of tampon is not a risk factor for cervical cancer	No	287	30,1	183	19,4	480	50,5
21. First pregnancy at an early age (younger than 18 years old) is a risk factor for cervical cancer	Yes	456	48,0	138	14,5	356	37,5
22. Pap smear screening shall only be performed when a gynecological problem occurs	No	776	81,7	57	6,0	117	12,3
23. Regular pap smear screening is necessary for preventing cervical cancer	Yes	754	79,4	41	4,3	155	16,3
24. No vaccine provides protection against HPV	No	328	34,5	157	16,5	465	48,9
25. Chlamydia infection is not a risk factor for cervical cancer	No	228	24,0	120	12,6	602	63,4
26. Cervical cancer is diagnosed via pap smear screening	Yes	661	69,6	73	7,7	216	22,7
27. Bleeding or pain after sexual intercourse is an early symptom of cervical cancer	Yes	506	53,3	68	7,2	376	39,6
28. HPV causes genital warts	Yes	473	49,8	29	3,1	448	47,2
29. High number of pregnancies (3 or more) is a risk factor for cervical cancer	Yes	422	44,4	153	16,1	375	39,5
30. First sexual intercourse at an early age (younger than 18 years old) is a risk factor for cervical cancer	Yes	509	53,6	100	10,5	341	35,9
31. Pap smear screening may be performed once every 3 years following normal (negative) findings in 3 consecutive tests	Yes	398	41,9	110	11,6	442	46,5
32. An unbounded sexuality is a risk factor for cervical cancer	Yes	719	75,7	27	2,8	204	21,5
33. Low socioeconomic status is not a risk factor for cervical cancer	No	491	51,7	207	21,8	252	26,5
34. Sexually transmitted diseases are a risk factors for cervical cancer	Yes	755	79,5	24	2,5	171	18,0

Table 4: The Distribution of FHWs based on their Responses to Knowledge Statements on the Risk factors for Cervical Cancer, Pap Smear Screening and HPV.

Discussion

While the three highest rates of correct responses to the knowledge statements on the risk factors of cervical cancer, Pap smear screening and HPV by FHWs were “Early diagnosis and treatment of cervical cancer is possible” (92.9%), “Gynecological examination shall only be performed when a gynecological problem occurs” (87.3%) and “Every sexually active woman must have pap smear testing” (83.5 %), the lowest rate of correct response was obtained on the statement “HPV causes pain during sexual intercourse” (7.6%).

The most significant characteristics of cervical cancer are that it is preventable and has good prognosis when diagnosed early. Therefore, if and to what extent cervical cancer and pap smear test are known and uptaken by the public pose an important health problem [6, 8, 19].

The awareness of the risk factors that cause cancer is important for taking precautions to avoid the cervical cancer. In this respect, health awareness must be raised among all women especially among the ones who are under risk [20,21]. The studies in the literature indicate that the opinions of women about gynecological examination affect their attitude towards having gynecological examination and Pap smear screening test [18, 22]. The study by Gülen shows that one-third of the midwives and nurses (33.2 %) have never had gynecological examination and that a large portion of those who have been examined had the test only when they are obliged to so in cases such as pregnancy (46.1 %) and RIA (43.6 %). A similar study also shows that women are shy about having gynecological examination and do not have periodic health check-ups in healthcare institutes unless they suffer from a health problem [22,23]. In our study, 51.7 % of FHWs have never had pelvic

examination and almost half of those who have been examined (48.4%) had the test due to pregnancy- and birth-related issues and bleeding and menstrual irregularities (17.2 %). The fact that only 10.2 % of FHWs have had pelvic examination for regular health check-ups (Table 2) and majority of them did not feel the need to be examined because they did not have any health problems (Table 3) evokes the idea that health-protective approaches are inadequate and FHWs may not represent a role model for women. It is well known that in our country, women do not have routine health check-ups for protecting or preserving their health [6,17]. Our study indicates that, despite being a healthcare worker, the percentage of them having a pelvic examination is lower (10.2 %) compared to the other studies in the literature. Therefore, they do not pay attention to protect or enhance their own health and may not be considered as a role model.

Gynecological problems are known to increase with age [14,19, 24]. In our study, almost half of the participants (45.4 %) who have never had pelvic examination are in the age range of 25-29 years old. This means that, despite their advanced age, the other half have not undergone a pelvic examination which poses a risk for their health. In addition, both our study and a similar study in the literature indicate that the percentage of FHWs having gynecological examination increases with advancing educational level [11,17,18]. In terms of their marital status, while a large portion of married FHWs had undergone pelvic examination with a percentage of 84.1, 71.3 % of single women have never had pelvic examination. Thus, one may conclude that single FHWs overlooks the fact that pelvic examination may also be performed without vaginal examination.

In Europe, the mortality rate related to cervical cancer is reduced gradually thanks to the effective screening programs. In fact, the disease can be diagnosed at an early stage via the Pap smear screening [2,25,26] In a study, 51.3 % of women were found to have undergone pap smear screening and this percentage increases proportionally with age, marriage duration, number of births, knowledge level on Pap smear screening and perception of cervical cancer risk factors [17]. The relevant studies in the literature indicate that, opinions of women about gynecological examination affect their attitudes towards having gynecological examination and pap smear screening [22,27,28,29]. While 85 % of the women living in developed countries such as USA have undergone pap smear screening test at least once in their lifetime, in less developed countries it is only 5% [2,11,16,30,31]. In our study, 80.5 % of the women have never had the Pap smear screening before. The fact that the majority of healthcare professionals have never undergone Pap smear screening test is an important significant finding in terms of cervical cancer screening. As almost half of the FHWs have undergone Pap smear screening test upon doctor's request and one-fourth of them have had the test for screening purposes, this practice may be considered to be insufficient. Even though the ratio of the screened FHWs may seem high, it actually is insufficient as they are healthcare professionals. Thus, one may conclude that the FHWs are not sensitive about the importance of screening and early diagnosis.

Even though cancer can be identified at an early stage via periodic examination and the pap smear screening, relevant studies show that, FHWs are able to point out neither the group of women that should have Pap smear screening nor the frequency of the screening. This finding indicates that healthcare professionals are not extensively informed on the importance of the issue [29,32].

It is rather striking that approximately one-fifth of FHWs were diagnosed with infection. Because untreated long-term infections are significant risk factors for cervical cancer [12]. Raising awareness of FHWs on pap smear screening test is of great importance to ensure

early diagnosis and treatment through examining genital infections before the onset of serious illness such as cervical cancer. 58.8 % of FHWs report that "the reason for them not to be screened is that they did not feel the need for having Pap smear screening test since they did not have any health problems". The fact that FHWs have not been screened just because they did not feel the need for it might be interpreted as they did not develop the necessary skills to take on self-care responsibility and that they only have had Pap smear screening when they have a complaint may be explained as they perceive it as a diagnostic test only. In similar studies, the women expressed that they have not undergone Pap smear screening because they did not feel under risk, were unaware of symptoms of the disease, had a fear for vaginal examination, were embarrassed, had pain, did not have sufficient interest, perceived discomfort during the test and were not in the at-risk age group [22,29].

Protection against risk factors that may cause cervical cancer is essential in preventing it and this is only possible if one is knowledgeable on the issue [4,13,14]. In a study, awareness of cervical cancer and Pap smear screening is found to increase the rate of being screened [20]. In another study, women are found to be more knowledgeable on HPV and cervical cancer if they have undergone Pap smear screening [30]. Therefore, FHWs have an essential role in raising awareness among women. In our study, we find that 77.3% of FHWs did not acknowledge others and half of those did provide information only to patients and public. This finding might arouse the idea that healthcare professionals are not fulfilling their educational role to a sufficient extent. In similar studies this can be explained with the fact that healthcare professionals and especially midwives and nurses do not comprehend their role to deliver health education, which is of great importance in early diagnosis, or that their institutions have no expectations from them in this regard [18,29,31].

The present study indicates that the percentage of FHWs having Pap smear screening increases with age and advancing education level. In a similar research, the group of participants who received in-service training (IST) has a higher percentage of undergoing Pap smear screening (58.4 %) than that of the group of participants who are not given IST (35.7 %) [11,29,32]. When the status of FHWs to have Pap smear screening test based on their professions is analyzed, doctors and midwives-nurses are expected to be different in this context compared to the other two groups. As technicians and dieticians-physiotherapists-biologists-pharmacists are also healthcare professionals, their low percentages on undergoing Pap smear screening leads to the impression that they definitely need to have in-service training (IST). In a study conducted among health department students, 87 % stated that they had never undergone Pap smear screening and did not consider themselves to be under risk [29]. It has been found that almost half of the population have never had Pap smear screening when the results are reviewed according to the marital status of FHWs. Pap smear screening should definitely be performed as a part of pelvic examination within three years following the first sexual intercourse as is done in developed countries [18-20,24,33].

The status of FHWs on informing others about cervical cancer increases with advancing education. In a similar study it has been found that the knowledge level of women about cervical cancer, risk factors and HPV vaccination also increases with advancing education. It is both important and necessary to instruct women, who are responsible for protecting their own health and the health of family members, about the aforementioned topics to ensure a more conscious and a healthy future generation [17,30,34,35,36].

According to the form with 34 knowledge statements on the Risk factors for Cervical Cancer, Pap Smear Screening and HPV (Table 4)

the proportion of correct answers on Risk factors for Cervical Cancer and Pap Smear Screening was found to be higher compared to the ones on HPV. Therefore, one may conclude that comprehensive and well-planned trainings on the risk factors for cervical cancer and Pap smear screening and in particular on HPV are necessary in order to raise awareness of FHWs and to strengthen their perception about the significance of this issue.

Conclusion

In our study we found that the knowledge of FHWs on risk factors for cervical cancer, Pap smear screening and HPV is insufficient and that the percentage of them having pelvic examination and Pap smear screening is quite low. It is recommended that the content of the occupational training should be modified and extended (especially for technicians) to cover both theoretical information and practices necessary to meet the demands on pelvic examination and Pap smear screening. In addition, for more detailed information on these subjects, IST may be given. Moreover, FHWs were identified not to be proficient in informing others and in health education. Therefore, it is proposed that the importance of the role of healthcare professionals in health education should be explained to them and health education should be made more widespread. As the nurses are easily accessible within the healthcare team and they are responsible mainly of instructing others, they are suggested to be more active and to function as role models in this context. It is also proposed that risk groups should be identified through country-wide cervical cancer screenings, protective measures should be taken and that diagnosis and treatment modalities should be explained in detail.

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