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Women's Knowledge Levels in Protection from Gynecological Cancers and Affecting Factors

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Abstract

Objective: Gynecological cancers (GC) are among the most common cancers in women. In this study; it was aimed to examine the knowledge levels of women for protection from GC and the affecting factors.

Methods: This cross-sectional study was conducted with 611 women who applied to the Family Medicine Outpatient Clinic of a Tertiary Hospital between December 2021 and September 2022 and met the inclusion criteria. The patient information form and Gynecological Cancer Prevention Information Scale (GCPIS) were used to obtain data. A p-value of <0.05 was considered statistically significant.

Results: The mean age of the 611 women included in the study was 33.92±11.12 years [minimum (min): 18- maximum (max): 65], and the mean total score of GCPIS was 15.17±7.08 (min: 0-max: 35). The total GCPIS score of the participants in the 36-65 age group were significantly higher than those in the 18-35 age group (p=0.048). A statistically significant difference was found between education and income levels in terms of total scores of GCPIS (p=0.002; p=0.004; respectively). Those who did not menstruate, had a history of a gynecological disease, had regular gynecological examinations, had knowledge of GC and screening tests, and had Pap-smear tests had significantly higher GCPIS total scores. (p=0.033; p=0.026; p=0.031; p=0.001; p=0.018, respectively).

Conclusion: According to this study, women's knowledge of GC prevention was moderate. High education and income level, amenorrhea, gynecological disease history, obtaining information about GC and screening tests, and having regular gynecological examinations and Pap smear tests were the factors positively affecting the level of knowledge about the prevention of GC.

Keywords: Family medicine, knowledge level, gynecological cancers

INTRODUCTION

Gynecological cancers (GC) are among the most common cancers in women and may differ in terms of incidence, risk factors, symptoms, signs, treatment responses, and prognosis according to their region of origin (1,2). In addition to causing morbidity and mortality, GC significantly affects the quality of life by disrupting the function of the reproductive system of women. Therefore, preventing their development, diagnosing, and treating any precancerous lesion at an early stage is vital for prognosis (3).

Among GC, there are only screening tests for cervical cancer [human papillomavirus (HPV) test/Pap-smear test] (4). Since there is no simple and reliable way to screen for other GC, it is crucial for public health to increase people's awareness of GC and to avoid modifiable risk factors (5).

Many factors affect women's awareness of GC, especially age and educational status (6). Unfortunately, some studies conducted recently have shown that women's awareness of GC, the rate of regular gynecological examinations, and cervical cancer screening were low (5,7,8). However, there are also studies reporting that women's awareness and attitudes towards

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protection from GC are above the moderate level (6,9-13). This study examines the knowledge level of women between the ages of 18 and 65 for preventing GC and the factors affecting it.

METHODS

This study was planned as a single-center cross-sectional study. This study was conducted with 611 volunteers who met the inclusion criteria among the women who were admitted to the family medicine outpatient clinic of a tertiary hospital between 20.12.2021 and 09.09.2022. All participants included in the study were informed in detail, and their verbal and written consent were obtained. All procedures were performed according to the Declaration of Helsinki. The study was conducted with the approval of the local ethics committee (date: 08.12.2021, no: 390).

Inclusion Criteria of the Study

Women between the ages of 18 and 65 years, who could understand and answer the questions asked, who had no known GC history, who had no history of GC in their first-degree relatives, who were literate, and who agreed to participate in the study were included in the study.

Exclusion Criteria of the Study

Those who were under the age of 18 and over the age of 65, could not communicate (uncooperative, had hearing and speech disorders), had a previous history of GC or other active malignancies, had a first-degree relative with a history of GC, and were illiterate were excluded from the study.

Data Acquisition Tools

Patient Information Form

Sociodemographic characteristics (age, gender, marital status, educational status, income status, chronic disease history), obstetric characteristics (total pregnancy, live birth, age at first birth), and gynecological characteristics (presence of menstrual bleeding, gynecological disease history, sexual activity status, regular gynecological examinations, screening tests for GC) of the participants were questioned with the patient information form created by the authors using the literature.

Gynecologic Cancer Prevention Information Scale

The Gynecologic Cancer Prevention Information Scale (GCPIS), developed by Bekar et al. (14) in 2021, is a 35-item scale to measure the knowledge level of women about protection from GCs. Cronbach's alpha value was found to be 0.951. The 5 sub-dimensions of the scale and the items it contains are as follows; protection from female reproductive organ cancer (22, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35), FRO cancer symptoms (5, 6, 7, 8, 9, 13, 14, 19, 20, 23), observations regarding diagnosis (15, 16, 17, 18, 21, 31), early diagnosis and physiological factors (1, 2, 3, 4), and risks related to delivery (10,1,12). The "correct" answers given by the participants are scored with 1 (one) point, and the "wrong" or "don't know" answers are scored with 0 (zero). Items 10, 11, 12, 16, 17, 18, 21, 28, and 31 are reverse scored. In addition to the total overall score on the scale, the total score for each subdimension is calculated separately. A score between 0 and 35 can be obtained from the scale, and an increase in scores indicates that women's level of knowledge about protection from GC has increased (14).

Statistical Analysis

After collecting the data, IBM SPSS Statistics v22 program was used for statistical analysis. The suitability of the parameters to the normal distribution was evaluated with Kolmogorov-Smirnov and Shapiro-Wilks tests, and it was determined that the parameters did not show normal distribution. While evaluating the study data, the Kruskal-Wallis test was used for the comparison of the parameters between groups in the comparison of quantitative data as well as descriptive statistical methods [minimum (min), maximum (max), mean, standard deviation (SD), median, frequency]. The Mann-Whitney U test was used to compare parameters between the 2 groups. The chi-square test was used to compare qualitative data. Spearman's rho correlation analysis was used to examine the relationships between parameters that did not conform to the normal distribution. Significance was evaluated at the $p<0.05$ level.

RESULTS

This study was conducted with 611 women with a mean age of 33.92±11.12 years (min: 18-max: 65). The distribution of sociodemographic and medical characteristics of the women participating in the study is given in Table 1.

Examination of the participants' knowledge about GC and their characteristics regarding screening tests and HPV vaccines are given in Table 2.

The total mean score of the participants' GCPIS was 15.17±7.08 (min: 0-max: 35), and the distribution of the total and sub-dimension scores of the participants' GCPIS is given in Table 3.

The distribution of the GCPIS sub-dimension and total scores according to various variables is given in Table 4. The total scores of the participants in the 36-65 age group were significantly higher ($p=0.048$). Significant differences were found between education and income levels in terms of total scores of GCBPS

(p=0.002; p=0.004, respectively). Those who were in menopause, those with a history of a gynecological disease, and those who underwent regular gynecological examinations had statistically significantly higher total scores of GCPIS (p=0.043; p=0.026; p=0.031, respectively) (Table 4).

As shown in Table 5, the total scores of GCPIS were statistically significantly higher for those who had received information about GC and screening tests and had Pap-smear tests (p=0.001; p=0.018, respectively). There was also a statistically significant difference between HPV vaccination statuses in terms of total scores of GCBPS (p=0.001) (Table 5).

Table 1. Sociodemographic and medical characteristics of the study group

		Min-max	Mean ± SD (median)
Age (years)		18-65	33.92±11 (12)
Gravida (n=382)		0-10	2.52±1.5 (2)
Age of first intercourse (n=421)		13-55	22.49±4.27 (22)
		n	**%**
Age groups	18-35 years	372	60.9
	36-65 years	239	39.1
Education level	Literate	13	2.1
	Primary school	88	14.4
	Middle school	43	7.0
	High school	148	24.2
	University	319	52.2
Marital status	Single	222	36.3
	Married	389	63.7
Income level	Low	267	43.7
	Middle	283	46.3
	High	61	10.0
Presence of a chronic disease	No	392	64.2
	Yes	219	35.8
Presence of a gynecological disease	No	406	66.4
	Yes	205	33.6
Regular gynecological examination	Yes	185	30.3
	No	426	69.7
Menstruation status	Yes	76	12.4
	No	535	87.6
Sexual activity	Yes	376	61.5
	No	235	38.5

Data are presented as mean ± SD (median), min: Minimum, max: Maximum, n (%) of the participants

DISCUSSION

Main Findings

In this study, which aimed to examine the knowledge status of women between the ages of 18 and 65 about protection from GC and the factors affecting it, according to the score obtained from the scale, participants' knowledge about prevention from GC was at a moderate level. The level of knowledge about GC prevention was higher among those who were university graduates, had medium-high income, had no menstruation, had a history of gynecological disease, had regular gynecological examinations, had received information about GC and screening tests before, and had Pap smear test.

Table 2. Participants' knowledge about gynecological cancers and their characteristics regarding screening tests and HPV vaccinations

		Min-max	Mean ± SD (median)
Age of first Pap smear		17-51	32.64±7.32 (32)
Age at the first HPV-DNA test		18-56	33.76±10.57 (31)
		n	**%**
Obtaining information about gynecological cancers and screening	No	369	60.4
	Yes	242	39.6
Having had a Pap smear test	No	398	65.1
	Yes	213	34.9
Having had an HPV DNA test	No	567	92.8
	Yes	44	7.2
HPV vaccination status	Done	37	6.1
	Planned	142	23.2
	Rejected	432	70.7

Data are presented as mean ± SD (median), min: Minimum, max: Maximum, n (%) of the participants, HPV: Human papilloma virus

Table 3. Total and sub-dimension scores of the gynecological cancer prevention information scale

	Min-max	Mean ± SD	Median
GCPIS total score	0-35	15.17±7.08	15
PFFRC	0-12	6.52±3.21	7
FRCS	0-10	2.73±2.85	2
OFRSRD	0-6	2.27±1.78	2
EDFRSCPF	0-4	2.98±1.11	3
BRRFRS	0-3	0.66±0.84	0

Data presented as mean ± SD (median), min: Minimum, max: Maximum, BRRFRS: Birth-related risks of the female reproductive system; EDFRSCPF: Early diagnosis of female reproductive system cancers and physiological factors; FRCS: Female reproductive cancer symptoms; OFRSRD: Observations on female reproductive system-related diagnosis; PFFRC: Prevention of female reproductive cancers

Comparison with the Existing Literature

Some studies conducted recently have shown that women's level of knowledge about various GC and screening methods, regular gynecological examinations, and especially cervical cancer screening rates are low (5,7,8). Fonnes et al. (15) investigated how often people in the community knew about GC compared with other types of cancer and reported that only 41% of the participants had heard of one or more cancers in female genital organs. It was observed that women's awareness of GC is higher than that of men (15). In our country, there are various studies investigating the awareness of different types of GC. Evcili and Bekar (16) found that women aged 18 years

Table 4. Total and sub-dimension scores of the scale according to the socio-demographic and medical characteristics

		PFFRC	FRCS	OFRSRD	EDFRSCPF	BRRFRS	GCPIS total score
		Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)
Age groups	18-35	6.47±3.29 (7)	2.47±2.78 (1)	2.19±1.86 (2)	2.97±1.17 (3)	0.67±0.85 (0)	14.77±7.43 (14)
	36-65	6.59±3.1 (7)	3.14±2.91 (2)	2.4±1.67 (2)	3.02±1.02 (3)	0.64±0.83 (0)	15.79±6.48 (15)
	[1]p	0.771	**0.002***	0.077	0.915	0.686	**0.048***
Education level	Literate	6.85±3.69 (9)	4±2.86(4)	2.46±1.98 (3)	2.38±1.5 (2)	0.54±0.78 (0)	16.23±8.79 (18)
	Primary s.	5.97±3.25 (6)	3.31±3 (3)	1.93±1.68 (1)	2.95±1.04 (3)	0.58±0.78 (0)	14.74±6.94 (14)
	Middle s.	5.91±3.37 (6)	2.6±2.71 (2)	1.51±1.39 (1)	2.86±1.3 (3)	0.67±0.92 (0)	13.56±6.77 (13)
	High s.	5.77±3.22 (6)	2.31±2.41 (1)	1.86±1.55 (2)	2.84±1.13 (3)	0.66±0.78 (0)	13.43±6.21 (14)
	University	7.09±3.07 (8)	2.73±2.99 (2)	2.65±1.87 (3)	3.11±1.07 (4)	0.69±0.88 (0)	16.27±7.29 (16)
	[2]p	**0.000***	0.095	**0.000***	**0.044***	0.869	**0.002***
Marital status	Single	6.69±3.27 (7)	2.57±2.67 (2)	2.21±1.88 (2)	3.05±1.13 (4)	0.66±0.87 (0)	15.18±7.41 (15)
	Married	6.42±3.19 (7)	2.82±2.95 (2)	2.31±1.73 (2)	2.96±1.1 (3)	0.66±0.83 (0)	15.17±6.9 (15)
	[1]p	0.274	0.742	0.360	0.224	0.830	0.949
Income level	Low	6.15±3.22 (6)	2.4±2.63 (1)	1.99±1.69 (2)	2.88±1.17 (3)	0.54±0.77 (0)	13.96±6.76 (14)
	Middle	6.81±3.16 (7)	2.98±2.94 (2)	2.51±1.85 (2)	3.05±1.07 (3)	0.8±0.91 (1)	16.14±7.15 (15)
	High	6.80±3.33 (7)	3±3.24 (2)	2.39±1.74 (2)	3.2±1 (4)	0.57±0.76 (0)	15.97±7.46 (16)
	[2]p	0.054	0.075	**0.004***	0.105	**0.002***	**0.004***
Chronic disease	No	6.68±3.15 (7)	2.7±2.89 (2)	2.23±1.78 (2)	2.96±1.14 (3)	0.62±0.82 (0)	15.19±6.94 (15)
	Yes	6.22±3.31 (7)	2.79±2.79 (2)	2.34±1.8 (2)	3.05±1.05 (3)	0.74±0.88 (0)	15.14±7.35 (15)
	[1]p	0.104	0.489	0.502	0.502	0.134	0.952
Gynecological disease	No	6.38±3.32 (7)	2.5±2.67 (2)	2.17±1.82 (2)	2.98±1.13 (3)	0.65±0.82 (0)	14.68±7.03 (14)
	Yes	6.79±2.99 (7)	3.19±3.13 (2)	2.47±1.71 (2)	3.01±1.07 (3)	0.69±0.89 (0)	16.15±7.11 (15)
	[1]p	0.216	**0.021***	**0.028***	0.835	0.816	**0.026***
Regular gynecological examination	Yes	6.75±3.06 (7)	3.09±2.89 (2)	2.56±1.67 (2)	3.03±1.14 (3)	0.68±0.84 (0)	16.1±6.76 (16)
	No	6.42±3.28 (7)	2.58±2.82 (2)	2.15±1.83 (2)	2.97±1.1 (3)	0.66±0.85 (0)	14.77±7.19 (14)
	[1]p	0.318	**0.014***	**0.004***	0.376	0.681	**0.031***
Menstruation status	Yes	7.76±3.38 (7.5)	3.91±3.17 (3)	2.42±1.80 (2)	3.01±1.04 (3)	0.56±0.77 (0)	16.67±7.41 (17)
	No	6.48±3.19 (7)	2.56±2.76 (1)	2.25±1.78 (2)	2.98±1.12 (3)	0.67±0.85 (0)	14.96±7.02 (14)
	[1]p	0.363	**0.001***	0.448	0.979	0.340	**0.043***
Sexual activity	Yes	6.43±3.08 (7)	2.74±2.84 (2)	2.32±1.7 (2)	2.97±1.1 (3)	0.67±0.84 (0)	15.13±6.64 (15)
	No	6.67±3.42 (7)	2.72±2.87 (2)	2.2±1.93 (2)	3.01±1.13 (3)	0.65±0.86 (0)	15.25±7.75 (15)
	[1]p	0.235	0.971	0.212	0.525	0.670	0.917

Data presented as mean ± SD (median), min: Minimum, max: Maximum, [1]Mann-Whitney U test, [2]Kruskal-Wallis test, *p<0.05 BRRFRS: Birth-related risks of the female reproductive system, EDFRSCPF: Early diagnosis of female reproductive system cancers and physiological factors, FRCS: Female reproductive cancers symptoms, OFRSRD: Observations on female reproductive system related diagnosis, PFFRC: Prevention from female reproductive cancers

and older had moderate knowledge of GC prevention. Erenoğlu (17) also reported that adult women's awareness of GC is at a sufficient level. However, there are also studies reporting that women's awareness of protection from GC is above the moderate level (6,9,10,12). However, even if women's awareness of GC is high, there may be a lack of correct information and preventive measures (18). awareness of GC increases as health literacy increases (13). In our study, participants' knowledge of GC prevention was found to be moderate. Necessary interventions should be made to increase women's knowledge of GC prevention, and an effective cancer screening program should be conducted.

Various factors such as age, socioeconomic level, and health status can affect women's level of knowledge and awareness about GC (6). In a study conducted by Teskereci et al. (5) in 2021, it was reported that as women's age increased, their awareness of GC increased. In the study of Evcili and Bekar (16), the knowledge of women aged 35-49 on protection from GC was found to be significantly higher than women aged 18-34 years. There are also studies showing that women's awareness of GC decreases as their age increases (10,12). In our study, similar to the literature, the knowledge of the participants in the 36-65 age group to prevent GC was higher than that in the 18-35 age group. In addition to women whose risk for GC increases with age, it is necessary to increase the level of knowledge in all age groups.

There is a relationship between education level and cancer awareness (19). Özcan and Demir Doğan (10) reported that women with higher education and income levels found higher awareness of GC. Evcili and Bekar (16) found that those with high school or higher education had a higher level of knowledge about GC protection. However, it was found that those with "good" economic status had a higher level of knowledge about protection from GC than those who defined it as "bad" and "moderate" (16). In the study conducted by Atlas and Er Güneri (12), it was found that as the level of education increased, the awareness about GC also increased, but there was no difference in terms of income levels. On the other hand, in the study of Teskereci et al. (5) and Kaya Şenol et al. (9), no significant difference was found in terms of awareness about GC according to the education and income level of the participants. In our study, the knowledge level of university graduates on GC prevention was significantly higher than that of secondary and high school graduates. The level of knowledge about protection from GC was found to be higher for those with a middle income level than for those with a low income level. It should be taken into account that people with low socioeconomic status may have a low level of knowledge about cancers due to the inadequacy of access to health services and low health literacy.

Atlas and Er Güneri (12) found that those who had 2 or fewer pregnancies had higher awareness of GC than those who had 3 or more pregnancies, but they did not find a significant correlation

Table 5. Total and sub-dimension scores of the scale according to participants' knowledge about gynecological cancers and characteristics of screening tests and HPV vaccination

		PFFRC	FRCS	OFRSRD	EDFRSCPF	BRRFRS	GCPIS total score
		Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)	Mean ± SD (median)
Obtaining information about gynecological cancers and screening	No	6.08±3.21 (6)	2.36±2.59 (1)	1.85±1.69 (2)	2.86±1.16 (3)	0.59±0.8 (0)	13.74±6.74 (14)
	Yes	7.19±3.11 (8)	3.3±3.12 (2)	2.91±1.74 (3)	3.18±1.01 (4)	0.78±0.9 (1)	17.36±7.05 (17)
	[1]p	**0.001***	**0.001***	**0.001***	**0.001***	**0.010***	**0.001***
Having had a Pap smear test	No	6.47±3.36 (7)	2.53±2.75 (1)	2.07±1.85 (2)	2.98±1.13 (3)	0.68±0.86 (0)	14.73±7.44 (14)
	Yes	6.61±2.94 (7)	3.11±3 (2)	2.65±1.6 (2)	3±1.08 (3)	0.64±0.82 (0)	16±6.3 (15)
	[1]p	0.873	**0.015***	**0.001***	0.957	0.728	**0.018***
Having had an HPV DNA test	No	6.52±3.24 (7)	2.67±2.84 (2)	2.22±1.8 (2)	2.97±1.12 (3)	0.67±0.84 (0)	15.05±7.16 (15)
	Yes	6.5±2.85 (6.5)	3.45±2.86 (3)	2.95±1.49 (3)	3.23±0.99 (4)	0.55±0.85 (0)	16.68±5.89 (15.5)
	[1]p	0.681	**0.043***	**0.004***	0.156	0.249	0.093
HPV vaccination status	Yes	5.51±2.78 (5)	1.49±1.91 (1)	1.54±1.24 (1)	2.76±1.14 (3)	0.62±0.86 (0)	11.92±5.01 (12)
	Planning	7.47±3.23 (8)	3.26±3.13 (2)	3.04±1.8 (3)	3.18±0.99 (4)	0.89±0.93 (1)	17.84±7.81 (17)
	Rejected	6.29±3.18 (7)	2.66±2.78 (2)	2.08±1.75 (2)	2.94±1.14 (3)	0.59±0.8 (0)	14.57±6.74 (14)
	[2]p	**0.001***	**0.003***	**0.001***	**0.047***	**0.002***	**0.001***

Data presented as mean ± SD (median), minimum: Min, maximum: Max, [1]Mann-Whitney U test, [2]Kruskal-Wallis test, *p<0.05, HPV: Human papilloma virüs

with the number of births. In another study, it was reported that as women's gravida and parity increased, their awareness of GC decreased (10). Teskereci et al. (5), on the other hand, did not find a significant relationship between gravida, parity, and knowledge levels of prevention from GC. In our study, there was no statistically significant relationship between the number of pregnancies and the knowledge level on GC prevention.

There are studies in the literature showing that women of reproductive age have a higher awareness of GC (9,12,20). In one study, no statistically significant difference was found in terms of participants' awareness of GC according to their menopausal status (20). In our study, the knowledge level of women who went through menopause to prevent GC was found to be higher than that of people who did not go through menopause.

Women who have regular gynecological examinations and self-external genital organ follow-ups have a higher level of knowledge about the prevention of GC (16,21). However, awareness of GC among those who admit to a physician when they have a gynecological complaint may be higher than among those who admit for routine control (12). In our study, similar to the literature, those who went to regular gynecological examinations and those with a history of gynecological disease had a high level of knowledge about prevention from GC. It was thought that women who went to gynecological examination due to any gynecological complaint/disease might be informed by health professionals.

In addition to routine gynecological examination, the Pap smear test and HPV test can detect GC and precancerous lesions early. HPV vaccination also reduces the risk of cancer (22). The way to increase the number of attempts to prevent GC is to provide a sufficient level of knowledge (10,17). However, the rate of awareness of cervical cancer screening, Pap smear test, and HPV vaccine among women in our country is quite low (23). Awareness of GC was found to be higher in those who participated in the screenings, as in regular examinations (5,16,24). On the other hand, Tiiti et al. (25) did not find a statistically significant relationship between the previous Pap smear status and the level of knowledge about cervical cancer risk factors. Atlas and Er Güneri (12) did not find a statistically significant difference in the awareness of GC according to HPV vaccination status. Among the women who participated in our study, those who had knowledge about GC and screening tests had a higher level of knowledge about GC prevention. It was observed that those who had Pap smear test before and those who were planning to have an HPV vaccine had a higher level of knowledge about GC prevention. The data we have obtained emphasize once again that informative materials for society should be delivered to all women who need to be screened as much as possible. Awareness of all health professionals who can come into contact with women who need GC screening should also be increased through in-service training.

Study Limitations

The main limitation of our study is that it is single-centered and cannot be generalized to the population.

CONCLUSION

According to this study, women's knowledge of prevention from GC is at a moderate level, and those who have a university degree, with a medium and high-income level, who are in the postmenopausal period, with gynecological diseases, who go to regular gynecological examinations, who have information about GC and screening tests before, and who have had Pap-smear test had a higher level of knowledge about prevention from GC. Along with regular gynecological examinations, women should be made aware and encouraged about screening programs and vaccination.

Ethics

Ethics Committee Approval: The study was conducted with the approval of the local ethics committee (date: 08.12.2021, no:390).

Informed Consent: The participants were informed verbally, and in writing, and written consent was obtained.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: N.E., S.T.K., O.B., Design: Data Collection or Processing: N.E., S.T.K., O.B., Analysis or Interpretation: N.E., S.T.K., O.B., Literature Search: N.E., S.T.K., Writing: N.E., S.T.K., O.B.,

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