

Women's Gynecological Cancer Awareness: What is the Situation in North Cyprus?

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Abstract

BACKGROUND/AIMS: Awareness about gynecological cancers is important for cancer prevention. This study aimed to determine the awareness of women aged 20-65 living in North Cyprus regarding gynecological cancers and the relationship between these types of cancers.

MATERIALS AND METHODS: This research study was designed and conducted as a descriptive and cross-sectional study. As a result of the sample selection calculation made from the sample group whose population was known for the research, 400 voluntary women individuals were included. Participants who were living in North Cyprus, were married women between the ages of 20-65, who could read and write Turkish, and who did not have disabilities were included in the study. Data were collected using a form, and the general knowledge level of the participants as well as comparisons (socio-demographic characteristics and gynecological cancer statements) were determined. The data were collected by meeting participants face to face between 01 February and 30 April 2023.

RESULTS: The overall scale score average of women was determined as 150.76 ± 25.98 . Statistically significant findings were obtained when comparing the general average scale scores of the participants with their descriptive characteristics. A statistical significance was determined between scale general average scores, education level, occupation, income-expense status, knowledge about gynecological cancers, information source such as internet and scientific articles, reason for gynecological examination, and knowledge about early diagnosis of gynecological cancers (each, $p=0.001$) and birth control pill/medication use status ($p=0.002$) ($p<0.05$).

CONCLUSION: According to the study results, the awareness levels of the participants regarding gynecological cancers are above average. However, this result does not indicate the expected or desired level.

Keywords: Awareness, cancer, North Cyprus, gynecological cancer, women

INTRODUCTION

According to World Health Organization data, cancer is the world's leading cause of death and caused a total of 10 million deaths in 2020, equivalent to one in six deaths.¹ It was reported by World Cancer Research Fund International that the five most common cancer types in women as of 2020 are breast (25.8%), colorectal (9.9%), lung (8.8%), cervix uteri (6.9%) and thyroid (5.1%). In the same report, ovarian (3.6%), vulva (0.5%), and vagina (0.2%) cancers and their rates are also stated.²

Gynecological cancers have many risk factors. These include alcohol, body mass index, individual factors, environmental causes, genetic predisposition, inactivity, hormonal factors, occupation, perinatal development, smoking, socio-economic status, viruses, and age.^{3,4} Knowing such risk factors and increasing awareness of gynecological cancers in women are among the primary health care services in cancer prevention.^{5,6} Thanks to awareness, positive results can be achieved in early diagnosis, treatment, and reducing mortality among women.^{7,8}

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Based on this information, this study aimed to determine the awareness of women aged 20-65 living in North Cyprus regarding gynecological cancers. This study was conducted to determine the awareness of women aged 20-65 living in North Cyprus regarding gynecological cancers and the relationships between different types of these cancers.

MATERIALS AND METHODS

This research was designed and conducted as descriptive and cross-sectional. As a result of the sample selection calculation on a known population sample group, 400 people were included (n=400). As of the end of 2017, it was reported that the female population aged 20-65 in North Cyprus was 104,453 people.

The data were collected through a data collection form created by the researchers after reviewing the literature.^{9,10} The form consists of two parts. The first section contains questions and statements indicating the descriptive characteristics of the participants. In the first section, consisting of 20 questions and statements in total, age, education level, employment status, occupation, income status, presence of health insurance, presence of children, number of children, number of pregnancies, age at first menstruation, use of birth control methods, and knowledge about gynecological cancers are collected. There is information about the patient's condition, sources of information regarding the patient, reason for going to gynecological examination, frequency of examination, smoking and alcohol use, age at menopause, knowledge about early diagnosis methods, and family history of gynecological cancer.

The second part of the form includes the Gynecological Cancer Awareness Scale (GCAS). The scale developed by Alp Dal and Ertem¹¹ consists of 41 items and four sub-dimensions. The Cronbach's alpha value of the scale was determined to be 0.94. 20th-41st years of GCAS. The items constitute the "Routine Control and Serious Disease Perception Awareness in Gynecological Cancers" subscale, and the Cronbach's alpha value is 0.97. Levels 3-11 of the scale. The items are the "Gynecological Cancer Risks Awareness" subscale, for which the Cronbach's alpha value is 0.84. 14th-19th on the scale. The items are the Gynecological Cancers Protection Awareness subscale, and the Cronbach's alpha value is 0.77. 1st-2nd and 12th-13th grades in the scale. The items of the "Early Diagnosis and Information Awareness in Gynecological Cancers" subscale have a Cronbach's alpha value of 0.70. The scale is evaluated on a total score basis; a minimum of 41 and a maximum of 205 points can be obtained. As the average score that individuals receive on the scale increases, their awareness also increases.¹¹

In this study, the Cronbach's alpha value of the scale was determined as 0.94. Cronbach's alpha values in sub-dimensions; Routine Control and Serious Disease Perception Awareness in Gynecological Cancers was found to be 0.94, Routine Control and Serious Disease Perception Awareness was 0.94, Gynecological Cancer Risks Awareness was 0.83, Gynecological Cancers Protection Awareness was 0.69, and Early Diagnosis and Information Awareness in Gynecological Cancers was found to be was 0.74.

The data was collected by meeting participants face to face between 01 February and 30 April 2023. Application of the data collection form took an average of 10-15 minutes. Participants who were living in North Cyprus and who were married women between the ages of 20-65, could

read and write Turkish, and did not have visual, auditory or mental disabilities were included in the study.

To conduct the research, ethical permission was obtained from the Cyprus Health and Social Sciences University (approval number: KSTU/2023/145, date: 01.02.2023); scale permission was obtained from the authors who conducted the GCSA Turkish validity and reliability study; and written consent was obtained from the participants who were included in the study during the data collection process.

Statistical Analysis

Statistical Package for Social Sciences 25.0 program was used for the statistical analysis of the data. The distributions of the descriptive characteristics of the participants are determined as numbers (n) and percentages (%) and are shown in tables. The average values of the scale are calculated as mean ± standard deviation and are presented in the tables. The Kolmogorov-Smirnov Z test was applied to evaluate whether the data conformed to the normal distribution. It was determined that the data did not conform to a normal distribution. Accordingly, Mann-Whitney U (U) tests were applied for binary variables, and Kruskal-Wallis H (X²) tests were applied for more than two variables, and the results are given in the comparison tables. Pearson correlation analysis (r) was applied to determine the correlation between descriptive features and scale score average. Data were evaluated and interpreted at a 95% confidence interval and a significance level of p<0.05.

RESULTS

Table 1 shows the participants' mean scores on the scale and its subscales. Women's GCSA general score average was 150.76±25.98. The mean score of the Routine Control and Serious Disease Perception Awareness in Gynecological Cancers Sub-Dimension is 85.50±17.05, the Gynecological Cancer Risks Awareness Sub-Dimension is 27.71±6.92, the Gynecological Cancer Protection Awareness Sub-Dimension is 21.07±4.89, and the Early Diagnosis and Information Awareness in Gynecological Cancers Sub-Dimension is 27.71±6.92. The average score was found to be 16.47±3.29 (Table 1).

The average age of the participants in the study was found to be 40.26±11.44. 40% (n=160) of the women were university graduates, 77% (n=308) were working, and 22% (n=88) were working in the management-civil service field, 47% (n=188) had income, and it was determined that their expenses were balanced, while 52% (n=208) did not have health insurance. 67.5% (n=270) of the participants had children, 32.5% (n=130) had two children, and 31% (n=124) had two pregnancies. The average age of women's first menstrual period is

Table 1. Average score distribution of scale general and sub-dimensions (n=400)				
Scale	Av.	SD	Min.	Max.
GCSA General Score Average	150.76	25.98	41	196
Routine Control and Serious Disease Perception Awareness in Gynecological Cancers	85.50	17.05	22	110
Gynecological Cancer Risk Awareness	27.71	6.92	9	43
Gynecological Cancers Protection Awareness	21.07	4.89	6	30
Early Diagnosis and Information Awareness in Gynecological Cancers	16.47	3.29	4	20
Av: Average, SD: Standard deviation, Min.: Minimum, Max.: Maximum.				

12.11±2.92. Seventy-five percent (n=300) of the participants did not use birth control pills/medicines, 71% (n=284) had information about gynecological cancers, 32.5% (n=130) said their source of information was the internet, 45.5% (n=182) had a gynecological examination when they had any complaints, 34% (n=136) had a gynecological examination once a year, and 26% (n=104) smoked while 28% (n=112) consumed alcohol. This information has been detected. The average age of women at menopause is 47.55±6.45. It was determined that 42% (n=168) of the participants did not have sufficient knowledge about gynecological cancer early diagnosis methods and 30% (n=120) had a family history of gynecological cancer (Table 2).

The distribution of participants' GCSA general average scores is shown in Table 2. The variables with the five highest awareness levels are: 1) Individuals whose source of information is scientific articles (163.00±13.32) (highest), 2) Individuals whose profession is in the field of management-civil service (160.43±23.29), 3) Individuals who have a postgraduate education (158.87±15.86), 4) Individuals who are women who have three children (158.60±25.62), and 5) Individuals whose income exceeds their expenses (157.86±25.18). The variables with the lowest awareness level are 1) Literacy level (124.00 ± 25.40), which is the lowest, 2) Not having a gynecological examination (136.32±35.95), 3) Not having knowledge about gynecological cancers (139.17±26.53),

Table 2. Descriptive characteristics of the participants and statistical comparison of these characteristics and the scale general score averages (n=400)								
Descriptive characteristic	n	%	Av. ± SD	Min.	Max.	Test value	p	Difference
Education level								
Literate	4	1.0	124.00±25.40	102	146	X²=20.759	0.001*	2-6 5-6
Primary school	38	9.5	142.57±27.50	86	189			
Middle school	16	4.0	147.00±37.29	64	179			
High school	116	29.0	154.50±29.65	46	196			
Undergraduate	160	40.0	147.68±23.51	41	191			
Graduate	66	16.5	158.87±15.86	126	194			
Employment status								
Yes	308	23.0	151.01±26.45	41	196	U=13600.000	0.559	-
No	92	77.0	149.91±24.43	64	188			
Occupation								
Education	58	14.5	154.62±15.53	122	192	X²=22.295	0.001*	1-3 2-3 2-4
Management/officer	88	22.0	160.43±23.29	90	196			
Health	66	16.5	140.12±31.51	41	186			
Other	96	24.0	147.31±27.24	69	196			
None	92	23.0	150.30±24.70	64	188			
Income status								
Low	154	38.5	144.45±24.65	64	194	X²=20.368	0.001*	1-2 1-3
Moderate	188	47.0	153.73±26.31	41	196			
High	58	14.5	157.86±25.18	117	196			
Presence of health insurance								
Yes	192	48.0	149.40±28.24	41	192	U=19784.000	0.873	-
No	208	52.0	152.00±23.69	69	196			
Presence of children								
Yes	270	67.0	150.38±27.16	41	194	U=17518.000	0.976	-
No	133	33.0	155.21±25.58	64	196			
Number of children								
One	92	23.0	149.93±29.29	46	194	X²=5.528	0.237	-
Two	130	32.5	151.09±23.83	41	192			
Three	30	7.5	158.60±25.62	102	191			
Mora than three	16	4.0	142.62±25.98	103	184			
None	132	33.0	150.21±25.58	64	196			
Number of pregnancies								
One	78	19.5	151.35±30.72	46	194	X²=1.606	0.808	-
Two	124	31.0	149.80±27.31	41	192			
Three	40	10.0	149.65±21.04	102	188			
More than three	30	7.5	151.06±23.96	103	191			
None	128	32.0	151.59±23.58	69	196			

Table 2.Continued								
Descriptive characteristic	n	%	Av. ± SD	Min.	Max.	Test value	p	Difference
Use of birth control methods								
Yes	100	25.0	146.20±20.48	81	194	U=11840.000	0.002*	-
No	300	75.0	152.28±27.43	41	196			
Knowledge about gynecological cancers								
Yes	284	71.0	155.49±24.25	46	196	U=9286.000	0.001*	-
No	116	29.0	139.17±26.53	41	196			
Sources of information								
Health-care proffesionals	122	30.5	152.13±25.57	46	192	U=15230.000	0.104	-
Internet	130	32.5	157.40±21.97	90	196	U=13618.000	0.001*	
Scientific article	44	11.0	163.00±13.32	142	192	U=4982.000	0.001*	
Newspaper	18	4.5	158.66±9.22	145	172	U=2658.000	0.104	
Relative/neighbour	48	12.0	145.91±28.15	64	192	U=7592.000	0.255	
Other	20	5.0	160.50±24.44	122	191	U=3074.000	0.150	
Reasons for going to gynecological examination								
In case of unbearable distress	44	11.0	143.40±26.35	64	184	X²=26.720	0.001*	1-3
In case of complaint	182	45.5	152.39±21.96	46	196			2-4
Routine	118	29.5	157.83±22.75	81	196			3-4
None	56	14.0	136.32±35.95	41	189			
Frequency of examination								
Once in a six month	20	5.0	151.70±38.67	46	184	X²=10.496	0.062	-
Once a year	136	34.0	153.51±22.07	81	192			
Once in two years	34	8.5	151.23±27.01	64	194			
Every three years	24	6.0	154.75±22.55	102	184			
Less frequently	30	20.0	149.25±25.56	86	196			
None	106	26.5	147.13±28.39	41	192			
Smoking status								
Yes	104	26.0	148.05±24.50	69	191	X²=2.366	0.306	-
No	272	68.0	151.41±26.83	41	196			
Quit	24	6.0	155.00±21.90	115	191			
Intaking alcohol status								
Yes	112	28.0	153.25±22.47	69	194	X²=0.715	0.699	-
No	282	70.5	149.77±27.41	41	196			
Quit	6	1.5	150.66±14.54	138	169			
Knowledge about early diagnosis methods								
Knowledgeable enough	50	12.5	154.66±26.29	81	184	X²=23.492	0.001*	1-3
Knowledgeable	182	45.5	155.91±23.14	46	196			2-3
Not enough	168	42.0	143.92±27.35	41	196			
Family history of gynecological cancers								
Yes	120	30.0	150.15±31.97	46	196	U=16242.000	0.598	-
No	280	70.0	151.02±23.00	41	192			
Av.: Average, SD: Standard deviation, Min.: Minimum, Max.: Maximum, p: Significance level, X²: Kruskal-Wallis, U: Mann-Whitney, *p<0.05.								

Av.: Average, SD: Standard deviation, Min.: Minimum, Max.: Maximum, p: Significance level, χ^2 : Kruskal-Wallis, U: Mann-Whitney, *p<0.05.

(4) Working in the health profession group (140.12 \pm 31.51) and having more than three children (142.62 \pm 25.98) (Table 2).

Statistically significant findings, were obtained when comparing the GCSA general average scores of the participants with their descriptive characteristics. Scale general average scores and education level, occupation, income status, knowledge about gynecological cancers,

information source (internet and scientific articles), reason for going to gynecological examination, knowledge about early diagnosis of gynecological cancers (each; p=0.001) and statistical significance was determined between birth control pill/medication use status (p=0.002) (p<0.05) (Table 2).

DISCUSSION

In this study, which investigated the awareness of gynecological cancers and the relationship between them among women aged 20-65 living in North Cyprus, the participants' overall scale score average was determined as 150.76 ± 25.98 . This result can indicate that women's awareness levels are above average. There are studies in the literature with similar results across different populations.

In Kiyak and Burucu¹⁰ research examining university students' awareness of gynecological cancers and related factors, the overall score average of the scale was found to be 154.5, and in Kaya Şenol et al.⁹ study on women of reproductive age and postmenopausal period, it was found to be 150.7. In Özcan and Demir Doğan¹² study, the average score was determined as 150.53, and in Teskereci et al.¹³ study, it was 151.08. The reason women's awareness of gynecological cancers is above average is their high level of education. In the study, 342 women had an equivalent education level of high school or above.

In the study, statistical significance was determined among variables such as women's education level, occupation, financial status, birth control pill/medication use, knowledge about gynecological cancers, reasons for gynecological examination, and knowledge about early diagnosis of gynecological cancers. In Öztürk et al.¹⁴ study, a statistically significant relationship was found between the general score average and financial status. In Atlas and Er Güneri¹⁵ study, statistical significance was determined among the scale's overall score average and the variables of education level, profession, and reason for applying to the polyclinic.

In the study of Alp Dal et al.⁷ statistical significance was found between the general score average, knowledge about female reproductive organ cancers, and knowledge about early diagnosis of female cancers. Socio-demographic conditions, such as education level, related profession, and economic status, can affect awareness levels positively and/or negatively. In addition, awareness of situation-specific factors such as gynecological cancers, prevention methods, and early diagnosis may affect the awareness of the subject.

The study also includes the general averages of the scale scores and the relationships resulting from the correlation analysis. Accordingly, occupation, income-expense status, birth control pill/medication use status, knowledge about gynecological cancers, internet information source, scientific article information source, and gynecological cancer early diagnosis knowledge status were determined as related factors. In the study of Teskereci et al.¹³, knowledge about gynecological cancers was identified as a contributing factor. In the study of Erenoglu and Bayraktar¹⁵, knowledge about gynecological cancers was stated as a statistical factor.

There is a limited amount of literature measuring gynecological cancer awareness. In the literature, it is possible to find awareness studies focused primarily on a single type, such as cervical, ovarian, or endometrial cancer. Gynecological cancers continue to exist as an important public health issue. It is important to determine awareness levels and increase investments in education and medical research for

the future so that precautions can be taken in this area. However, it should be noted that the most important issue is education.¹⁶

Study Limitations

The study group, women aged 20-65 living in the North part of Cyprus, can be considered a limitation of the study. The results should not be generalized to the whole world or a larger group.

CONCLUSION

According to the study results, the awareness levels of the participants regarding gynecological cancers are above average. However, this result does not indicate the expected and/or desired level. It may be recommended to conduct more research on the lack of information on the subject in the literature, enhance public health training for awareness, focus on programs, and make educational investments, such as informative advertisements, posters, and brochures, at the public level on the subject.

MAIN POINTS

- Gynecological cancers account for a significant number of cancer-related deaths worldwide (10 million as of 2020).
- The knowledge of women who participated in the study about gynecological cancers was determined to be at a moderate level (150.76 ± 25.98).
- Individuals' level of education, field of work, income level, birth control method, knowledge about gynecological cancers, information sources, reasons for gynecological examination, and knowledge of early diagnosis methods are significant factors affecting their knowledge levels ($p < 0.05$).
- Information sources are scientific articles and the knowledge levels of people working as management/officer servants are higher.

ETHICS

Ethics Committee Approval: The study received approval from Cyprus Health and Social Sciences University Ethics Committee (approval number: KSTU/2023/145, date: 01.02.2023).

Informed Consent: Written consent was obtained from the participants who were included in the study during the data collection process.

Footnotes

Authorship Contributions

Concept: A.T., U.K., Design: A.T., U.K., Data Collection and/or Processing: A.T., U.K., Analysis and/or Interpretation: A.T., U.K., Literature Search: A.T., U.K., Writing: A.T., U.K.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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