Arch Health Sci Res. 2024;11(2):102-106
DOI: 10.5152/ArcHealthSciRes.2024.23134

Original Article

Determination of Women's Gynecological Cancer Awareness Levels and Affecting Factors

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Cite this article as: Dulkara GH, Abiç A, Mamuk R. Determination of women's gynecological cancer awareness levels and affecting factors. *Arch Health Sci Res*. 2024;11(2):102-106.

ABSTRACT

Objective: This descriptive study, aims to determine the level of women's awareness on gynecological cancer in Turkish Republic of Northern Cyprus and the factors affecting their awareness.

Methods: A total of 378 women participated in the study through an online questionnaire. Descriptive information forms and Gynecological Cancer Awareness Scale were used for data collection. The Statistical Package for Social Sciences version 25.0 software (IBM Corp.; Armonk, NY, USA) was used for data analysis. Mann–Whitney *U*-test was used to compare two groups, whereas the Kruskal–Wallis test was used to compare multiple groups.

Results: The average Gynecological Cancer Awareness Scale score of the women included in the study was found to be 152.15 ± 18.31. Scale scores were found to be higher in women who used family planning methods, had knowledge about gynecological cancers, received information from healthcare professionals, had a gynecological examination once or more a year, had a Pap smear test,and performed self-vulva examinations.

Conclusion: In this study, it was found that the awareness of gynecological cancer of women living in the Turkish Republic of Northern Cyprus was at a moderate level, and that the awareness of gynecological cancer was higher among women who had a higher level of education, had a good economic situation, underwent Pap smears, went to a gynecological examination once a year or more, and performed a self-vulva examination.

Keywords: Gynecological cancers, awareness, nursing, women's health

Introduction

Cancer is a major chronic disease and a leading cause of mortality.[1] It is responsible for nearly one-sixth of all deaths worldwide, and 70% of these deaths occur in low and middle-income countries.[2] Amongnoncontagious diseases, cancer ranks second after cardiovascular diseases.[3] By 2040, the number of cancer cases is projected to increase to 40 million, and approximately 2 million of these new cases are expected to be gynecological cancers.[4]

Gynecological cancers are among the most common types of cancer in women.[5] They are defined as cancers in the organs of the female reproductive system.[6] With a global incidence of 1.2 million cases in 2018, gynecological cancers are the most frequently observed types of cancer in women after breast cancer.[7] Having a high risk of mortality and morbidity, gynecological cancers resulted in the loss of 600 thousand women around the world in the same year.[8,9] According to Globocan statistics, the most common types of gynecological cancers are cervix, corpus uteri, and ovarian cancer, respectively.[10] In Türkiye, gynecological cancers rank second after breast cancer, with the most common types being corpus uteri, ovarian, and cervical cancers, respectively.[11] Similarly, gynecological cancers were among the 10 most common cancer types in the Turkish Republic of Northern Cyprus (TRNC) between 2012 and 2016.[12,13]

Gynecological cancers affect fertility, quality of life, sexual life, and body image of women by creating physical, psychological, and economic problems.[14-17] About 30%-50% of all cancers are preventable.[11] Early diagnosis is vital to prevent cancers, and the World Health Organization

Received: October 6, 2023
Accepted: November 29, 2023
Accepted: January 10, 2023
Accepted: January 23, 2023
Publication Date: June 7, 2024

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emphasizes the importance of cancer awareness as a component of early diagnosis.[18] Raising awareness for cancer is crucial to take early steps in diagnosis and treatment. The number of studies on gynecological cancers is limited, and most studies dealt with knowledge, awareness, and attitudes toward cervical cancers.[3] The analysis of the literature reveals that gynecological cancers are mentioned less frequently than other types of cancers, such as breast, hematologic, and lung cancers. About 60.8% of women did not have sufficient knowledge about gynecological cancers, 51.3% did not have Pap smear test, and only 25% of women performed vulvar self-examination.[3,8,19] Besides, there was a decrease in the diagnosis of gynecological cancers during the COVID-19 pandemic.[20] Existing studies on the awareness of gynecological cancers reported that the level of awareness ranged from moderate to high levels and was affected by factors such as age, income and education levels, and the numbers of pregnancies and births.[21,22] Gynecological cancers are important social problems as they cause mortality and morbidity. We have found studies that only dealt with awareness of and early diagnosis of cervical cancer in TRNC.[23,24] In order to promote the welfare of gynecological cancer and women's participation in screening programs, the work of the government and midwives in this field is valuable. Therefore, in TRNC, where this method is limited, regional determination of women's gynecological cancer and the diversity of education and screening programs for this purpose contribute to improving women's health. Within this context, this study aims to determine the level of women's awareness of gynecological cancer in TRNC and the factors affecting their awareness.

Methods

Design

This descriptive study was conducted to determine the level of awareness of gynecological cancer among women living in TRNC and to identify the factors influencing their awareness.

Data Collection Procedures

The target population of the study consisted of women aged between 20 and 65 years, who resided in TRNC. Since the researchers could not identify the possible participants in a digital environment, convenience sampling, a non-random sampling method, was used. In the research, data were collected via online survey forms which were sent to the participants' personal social media accounts (Facebook, Instagram, Twitter, etc.), WhatsApp, and e-mail addresses between May 15, 2022 and June 15, 2022. The settings of the form enabled it to be completed only once, and answering all questions was mandatory, thus preventing duplicate forms and missing data. Of the 463 women to whom an online survey was sent during the study, 391 responded. In the analysis, 13 survey forms were excluded from the study because they did not meet the sample acceptance criteria (not between the ages of 20 and 65, unmarried, etc.), and the study was completed with 378 participants.

Data Collection Tools

Descriptive information form and the Gynecological Cancer Awareness Scale (GCAS) were used for data collection.

Descriptive Information Form

The form was prepared by the researchers in line with the literature and included 8 questions on sociodemographic characteristics and 15 questions on gynecologic and obstetric characteristics of the participants.

Gynecological Cancer Awareness Scale (GCAS)

The GCAS was developed by Dal and Ertem in 2017 to measure awareness of gynecological cancers in married women aged 20-65 years.[6] The 41-item scale comprises 4 subscales, namely, "awareness about early diagnosis and knowledge in gynecologic cancers (items 1, 2, 12, and 13)," "awareness about gynecologic cancer risks (items 3-11)," "awareness about avoiding gynecologic cancers (items 14-19)," and "awareness about routine control and serious disease in gynecologic cancers (items 20-41)," respectively. The Cronbach's α values of the total scale and the 4 subscales were 0.944, 0.708, 0.843, 0.778, and 0.979, respectively. The scale has no cutoff value. Scores range from 41 to 205, with higher scores indicating a higher level of awareness of gynecologic cancers.

Statistical Analysis

The study data were analyzed using the Statistical Package for Social Sciences version 25.0 software (IBM Corp.; Armonk, NY, USA), and the statistical significance was accepted as $P < .05$. Shapiro–Wilk and Levene tests were utilized to determine whether the data were distributed normally. Since the data did not show a normal distribution, nonparametric tests were used in the data analysis of the study. Mann–Whitney *U*-test was used to compare 2 groups, whereas Kruskal–Wallis test was used to compare multiple groups. Number, percentage, median, and quartile range values were used as descriptive statistics.

Ethical Considerations

Before the study was conducted, ethics committee approval was obtained from the Eastern Mediterranean University Health Sciences Ethics Committee (Approval no: ETK00-2022-0131, Date: May 6, 2022). Participants were asked to submit their consent via an online consent form prepared in accordance with the Declaration of Helsinki. Permission to use the GCAS was obtained from the authors via e-mail.

Results

This study involved a total of 378 women. Table 1 demonstrates GCAS total and sub-scale mean scores. The total GCAS score was 152.15 ± 18.31.

Comparisons of the participants' mean GCAS scores based on selected sociodemographic characteristics are shown in Table 2. Accordingly, the participants aged 35-65 years had significantly higher GCAS scores compared to those aged 20-35 years ($P = .021$). Besides, the GCAS scores of the women who had undergraduate and graduate degrees ($P < .001$), were employed ($P = .016$), had an income more than expenses ($P = .008$), and had spouses with undergraduate and graduate degrees ($P > .001$), were statistically significantly higher.

Comparisons of the participants' mean GCAS scores based on gynecologic and obstetric characteristics are shown in Table 3. The mean

Table 1. Mean GCAS Scores (n = 378)

Subscales of GCAS	$X \pm$ SD	Minimum–Maximum	Cronbach α
Awareness about routine control and serious disease in gynecologic cancers	87.40 ± 12.77	35-110	0.94
Awareness about gynecologic cancer risks	26.45 ± 5.18	10-45	0.81
Awareness about avoiding gynecologic cancers	21.57 ± 3.87	7-30	0.62
Awareness about early diagnosis and knowledge in gynecologic cancers	16.72 ± 2.83	4-20	0.75
GCAS total	152.15 ± 18.31	81-205	0.92

Table 2. Comparison of GCAS Scores According to Sociodemographic Characteristics (n = 378)

	n	%	Median	IQR	Test *P*
Age (years)					
20-35	188	49.7	150	23.75	$Z = -2.312$ $P = .021$
36-65	190	50.3	153	23	
Education					
Primary school	50	13.2	147	21.25	$\chi^2 = 35.411$ $P < .001$
Secondary school	132	34.9	147	21.5	
Undergraduate	121	32.0	152*,†	23	
Graduate	75	19.8	163*,†	22	
Employment status					
Employed	256	67.7	152	24.75	$Z = -2.398$ $P = .016$
Unemployed	122	32.3	149	17.25	
Income level					
Lower than expenses	107	28.3	148	23	$\chi^2 = 9.651$ $P = .008$
Equal to expenses	206	54.5	151.5	20	
More than expenses	65	17.2	158*	25.5	
Spouse's education					
Primary school	90	23.8	148.5	22	$\chi^2 = 35.157$ $P < .001$
Secondary school	117	31.0	148	21.5	
Undergraduate	130	34.4	155*,†	22	
Graduate	41	10.8	163*,†	22.5	
Spouse's employment status					
Employed	347	91.8	151	24	$Z = -0.846$ $P = .398$
Unemployed	31	8.2	149	23	

IQR, interquartile range; *Z*, Mann–Whitney *U*-test; χ^2, Kruskal–Wallis test.
*Difference with the first category.
†Difference with the second category.

GCAS scores of the women who used family planning methods ($P < .001$), had knowledge about gynecological cancers ($P < .001$), received information from health professionals ($P < .001$), received gynecological examinations once or more a year ($P < .001$), had a Pap smear test ($P < .001$), and performed vulvar self-examination ($P < .001$) were significantly higher than those of other participants.

Discussion

Gynecological cancers have a significant impact on women's lives.[25] Therefore, early diagnosis and treatment of these cancers are vital.[3] One of the most important mechanisms for early diagnosis of gynecological cancers is to raise awareness.[18] This study, which evaluated the level of awareness of gynecological cancers among women residing in TRNC found that the participants obtained moderate GCAS scores (152.15 ± 18.31). Existing studies supported our finding. The mean GCAS scores in the studies of Atlas and Güneri, Özcan and Demir Doğan, Evcili and Beker, and Kıyak and Burucu were 160.31 ± 22.42, 150.53 ± 18.26, 151.08 ± 3.84, and 154.5 ± 16.7, respectively.[19,25-27] The median GCAS score in the study of Gözüyeşil et al. was 153.[21] Similarly, Alp Dal et al.[28] found that the GCAS scores of female academicians, administrative personnel, and health professionals were 157.05 ± 21.42, 150.94 ± 27.28, and 159.96 ± 24.27, respectively. Gynecological cancers, which threaten women's lives, can be prevented by raising awareness about their causes, symptoms, screening, and early diagnosis. Therefore, the moderate level of awareness among the participants indicated that the women in TRNC need education on this issue.

The analysis of the literature reveals that awareness of gynecological cancers is affected by factors such as age, gender, education, profession, and socioeconomic status.[21,25,26,29] In our study, the level of

Table 3. Comparison of GCAS Scores According to Gynecologic and Obstetric Characteristics (n = 378)

	n	%	Median	IQR	Test *P*
Age at first menstruation (years)					
9-13	239	63.2	152	23	$Z = -1.816$ $P = .069$
14-17	139	36.8	150	20	
Age at first sexual intercourse (years)					
14-20	181	47.9	150	24.5	$\chi^2 = 1.021$ $P = .796$
21-25	139	36.8	152	23	
26-30	48	12.7	151	20.25	
31 and above	10	2.6	154.5	35.5	
Gravida					
0	39	10.3	150	27	$\chi^2 = 1.172$ $P = .982$
1	105	27.8	152	26.5	
2	106	28.0	152	23.25	
3 and above	128	33.9	151	20.75	
Parity					
0	64	16.9	152.5	25.25	$\chi^2 = 4.029$ $P = .258$
1	137	36.2	151	24	
2	124	32.8	152	24.75	
3 and above	53	14.0	149	13.5	
Abortus					
0	309	81.7	151	25	$\chi^2 = 0.679$ $P = .712$
1	58	15.3	150	19.25	
2 and above	11	2.9	160	24	
Curettage					
0	274	72.5	151	23.25	$\chi^2 = 0.747$ $P = .688$
1	71	18.8	150	26	
2 and above	33	8.7	152	23	
Uses family planning methods					
Yes	216	57.1	155.5	22	$Z = -4.921$ $P < .001$
No	162	42.9	147	21.25	
Has knowledge about gynecological cancers					
Yes	270	71.4	154	22.25	$Z = -5.570$ $P < .001$
No	108	28.6	146	22.25	
Source of information about gynecological cancers					
No source	44	11.6	143.5	16.25	$\chi^2 = 45.194$ $P < .001$
Family and friends	35	9.3	141	26	
Mass media	37	9.8	150	19	
Social media	103	27.2	149	15	
Health professionals	159	42.1	160*,†,‡	22	
Frequency of gynecological examination					
None	52	13.8	141	29	$\chi^2 = 31.679$ $P < .001$
Once or more a year	149	39.4	157*	22.5	
Once in 1-3 years	125	33.1	148†	21.5	
Once in 4-5 years	34	9.0	152*	9.75	
Once in more than 5 years	18	4.8	145.5	31.25	
Had a Pap-smear test					
Yes	266	70.4	154	21.5	$Z = -3.576$ $P < .001$
Yes	112	29.6	147	24	
Performs vulvar self-examination					
Yes	115	30.4	160	25	$Z = -5.390$ $P < .001$
No	263	69.6	149	21	

IQR, interquartile range; *Z*, Mann–Whitney *U*-test; χ^2, Kruskal–Wallis test
*Difference with the first category
†Difference with the second category
‡Difference with the third category

awareness among participants aged 35-65 years was higher than that among women aged 20-35 years. Similarly, Öz found that women aged 35 years and above had a higher level of awareness compared to those under 35 years of age.[29] On the other hand, Gözüyeşil et al.[21] found that women aged 30-39 years had a higher level of awareness. Positive relationship between age and awareness of gynecological cancers may be related to the adoption of a healthier lifestyle and increased importance given to health during the aging process. Contrary to these findings, Atlas and Güneri[25] found that the GCAS scores of women aged 18-29 were significantly higher than those of older women. This difference may be related to the differences in cultural and sociodemographic characteristics of women. Additionally, it is expected that awareness amongyoung people who have a high risk of gynecological cancer is also high.

Education level plays a crucial place in the screening and diagnosis of cancers. Existing studies suggest that individuals with higher levels of education are more likely to participate in cancer screening programs.[30,31] The GCAS scores of the participants with undergraduate and graduate degrees were significantly higher ($P < .001$). Similarly, Özcan and Demir Doğan[26] reported a positive association between education and awareness of gynecological cancers. In fact, this association is an expected one since the health literacy of individuals is closely related to the level of education. Women with a high level of health literacy will be able to access knowledge, which, in turn, will increase their awareness. Existing studies have confirmed the positive relationship between health literacy and awareness of gynecological cancers.[32-34] Therefore, it is plausible to expect that raising the education level of women may increase the level of awareness of gynecological cancers, which, in turn, may positively affect women's health.

Not only women's education but also the education levels of their spouses affect the level of awareness of gynecological cancers. We found that the GCAS scores were higher for participants who had spouses with undergraduate and graduate degrees ($P < .001$). Similarly, Karabaş[35] found a positive relationship between the education levels of spouses and the level of awareness of gynecological cancers. On the other hand, employment status and income level were other factors affecting awareness. The GCAS scores were higher for the participants who were employed ($P = .016$) and had an income higher than their expenses ($P = .008$). Existing studies have confirmed our findings. Özcan and Demir Doğan[26] found that GCAS scores of working women were significantly higher. Atlas and Güneri reported that the mean GCAS scores of housewives were lower.[25] Participation of women in professional life is expected to increase their socioeconomic status.[36] Given that women with lower socioeconomic status will benefit less from education and health services,[37-39] it is plausible to find higher GCAS scores for working women.

Participants who used family planning methods had higher level of awareness of gynecological cancers ($P < .001$). Existing studies in the literature supported our finding. Kaya Şenol et al.[22] found that women who used oral contraceptives and intrauterine contraceptive devices had a higher level of awareness of gynecological cancers than women who did not use any family planning methods or used other methods. Karabaş[35]reported a higher levels of awareness in women who used family planning methods. Women who intend to use family planning methods are more likely to consult health professionals and participate in regular check-ups, which may have a positive effect on their awareness of gynecological cancers. On the other hand, participants who had prior knowledge of gynecological cancers had higher level of awareness. Our finding was parallel to the findings of the studies of Teskereci et al.[18] and Öztürk et al.[40] We also found that participants who received information from health professionals obtained higher scores on the GCAS. Similarly, Öz found that women who received information on gynecological cancers from health professionals or during university education had a higher level of awareness.[29]

The Pap smear test plays an important role in screening cervical cancer, and undergoing this test reduces the incidence of cervical cancer.[41] This study was conducted in places where Pap smear test expenditures for women with a high risk of gynecological cancer are high ($P < .001$). Similarly, Öz[29] and Teskereci et al.[3] found that women who underwent Pap smear test had a higher level of awareness of gynecological cancers. On the other hand, the GCAS scores were higher for participants who had gynecological examinations once or more a year ($P < .001$). Frequent visits to health centers may increase the level of health awareness by receiving accurate information from health professionals. Therefore, it is plausible to expect a higher level of awareness among women who frequently visit health centers for gynecological examination.

Finally, women at high risk of gynecological cancer are more likely to perform vulvar self-examination. Several studies supported our finding.[40] Vulvar self-examination is a practice that enables women to recognize changes in their genital area. Women who perform vulvar self-examination understand that this practice is performed for early diagnosis of vulvar cancer. Therefore, it is plausible to expect a higher level of awareness among these women.

A higher level of awareness of gynecological cancers has a positive impact on early diagnosis and treatment, reducing mortality and morbidity rates.[40] This finding, along with others, suggests that factors such as education, health literacy, socioeconomic status, and the frequency of gynecological examination have a positive effect on the level of awareness of gynecological cancers. Therefore, these factors may be taken into account to increase women's health and avoid negative consequences of gynecological cancers.

Conclusion

The results of this study showed that the gynecological cancer awareness of women residing in TRNC was at moderate levels. Participants who had higher levels of education and income, underwent pap smear tests, had gynecological examinations once or more a year, and performed vulvar self-examination demonstrated a higher level of awareness of gynecological cancers. Based on these findings, nurses and midwives should aim to enhance women's knowledge about the early diagnosis of gynecological cancers by providing training. They should also identify groups with low gynecological cancer awareness and encourage women to participate in gynecological cancer screenings. Future research on this topic should consider qualitative and mixed methods approaches to explore gynecological cancer treatment among women with low birth rates.

Ethics Committee Approval: Ethics committee approval was received for this study from the Eastern Mediterranean University Health Sciences Ethics Committee (Approval no: ETK00-2022-0131, Date: May 6, 2022).

Informed Consent: Written informed consent was obtained from participants who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – G.H.D., A.A., R.M.; Design – G.H.D., A.A., R.M.; Supervision – A.A., R.M.; Resources – G.H.D., A.A., R.M.; Materials – G.H.D., A.A., R.M.; Data Collection and/or Processing – G.H.D., A.A., R.M.; Analysis and/or

Interpretation – A.A., R.M.; Literature Search – G.H.D., R.M., A.A.; Writing Manuscript – G.H.D., A.A., R.M.; Critical Review – A.A., R.M.

Declaration of Interests: The authors have no conflict of interest to declare.

Funding: The authors declared that this study has received no financial support.

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