NEAR EAST UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

DEPARTMENT OF NURSING

AWARENESS OF OVARIAN CANCER AMONGST INTERNATIONAL STUDENTS IN NORTHERN CYPRUS

M.Sc. THESIS

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Nicosia

September, 2023

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Approval

We certify that we have read the thesis submitted by Emmanuel Akinbode titled "Awareness of ovarian cancer amongst international students in Northern Cyprus" and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Nursing Sciences.

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Emmanuel Akinbode

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Abstract

Awareness of Ovarian Cancer Amongst International Students in Northern Cyprus

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Background: Ovarian cancer is one of the deadliest gynecologic cancers amongst cancers of the female reproductive system. Therefore, determining the level of awareness of ovarian cancer risk factors is important for early diagnosis.

Purpose: The purpose of this study is to determine the levels of awareness of ovarian cancer among international students in Northern Cyprus.

Methods and Materials: This research is a cross-sectional and descriptive study. The population of this study included the international students in Northern Cyprus between September 1, 2022, and March 2023. The sample size of the study consisted of 389 female students. The data was collected using a web based online survey that included a student information form and Ovarian Cancer Awareness Measure. In this study, data analyzed using descriptive statistical tests, the Kruskal-Wallis test, the Mann-Whiteny U test and the Pearson chi-square test.

Findings: It was found that the total mean score of the level of awareness of ovarian cancer is 57.45 (min: 13.00 max: 69.00) which demonstrate good awareness of ovarian cancer. It was determined that the international students had an average of 3.74 (range=1-10) in open warning signs and an average of 1.95 (range:0-12) for open risk factors that indicates a low level of ovarian awareness. As the sociodemographic factors were examined, it was seen that there was a statistically significant difference between ethnic group, educational level and level of awareness of ovarian cancer It was determined that the students had the least awareness of ovarian screening program and age women invited for ovarian screening.

Conclusion: It was determined that international female university students in Northern Cyprus had a good level of awareness about ovarian cancer. In order to

improve personal knowledge of warning signs, risk factors and ovarian screening program, it is recommended to take measures in the campuses to remind and create awareness amongst students like posters and banners on campuses as well as informative articles on school websites.

Keywords: Awareness, Ovarian Cancer, Risk Factors, Signs, Students.

Özet

Kuzey Kıbrıs'taki Uluslararası Öğrenciler Arasında Over Kanseri Farkındalığı

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Danışman: Doç. Dr. Dilek Sarpkaya Güder

Eylül, 2023, 75, sayfa

Giriş: Over kanseri, kadın üreme sistemi kanserleri arasında en ölümcül jinekolojik kanserlerden biridir. Bu nedenle over kanseri risk faktörlerine ilişkin farkındalık düzeyinin belirlenmesi erken tanı açısından önemlidir.

Amaç: Bu çalışmanın amacı, Kuzey Kıbrıs'taki Uluslararası öğrencilerin over kanseri konusundaki farkındalık düzeylerini belirlemektir.

Yöntem ve Gereçler: Bu araştırma kesitsel ve tanımlayıcı bir çalışmadır. Bu çalışmanın evrenini 1 Eylül 2022-Mart 2023 tarihleri arasında Kuzey Kıbrıs'ta bulunan Uluslararası öğrenciler oluşturmuştur. Araştırmanın örneklem büyüklüğü 389 kadın öğrenciden oluşmuştur. Veriler, öğrenci bilgi formu ve Over Kanseri Farkındalık Ölçümü'nü içeren web tabanlı bir çevrimiçi anket kullanılarak toplanmıştır. Bu çalışmada veriler, tanımlayıcı istatistiksel testler, Kruskal-Wallis testi, Mann-Whiteny U testi ve Pearson ki-kare testi kullanılarak analiz edilmiştir.

Bulgular: Over kanserine ilişkin farkındalık düzeyi toplam puanının 57,45 (en az: 13,00 en çok: 69,00) olduğu ve bunun over kanseri konusunda iyi düzeyde farkındalık gösterdiği belirlendi. Uluslararası öğrencilerin over kanser, farkındalığının düşük olduğunu gösteren açık uyarı işaretlerinde ortalama 3.74 (aralık=1-10), açık risk faktörlerinde ise ortalama 1.95 (aralık:0-12) olduğu belirlendi. Sosyodemografik faktörler incelendiğinde, etnik grup, eğitim düzeyi ve over kanser farkındalık düzeyi arasında istatistiksel olarak anlamlı farklılık olduğu görüldü. Öğrencilerin over kanseri tarama programı ve tarama yapılan yaş konusunda en az farkındalığa sahip olduğu belirlendi.

Sonuç: Kuzey Kıbrıs'taki uluslararası kadın üniversite öğrencilerinin over kanseri konusunda iyi düzeyde farkındalığa sahip olduğu görüldü. Uyarı işaretleri, risk faktörleri ve yumurtalık tarama programı konusunda kişisel bilgi düzeyinin

artırılması için kampüslerde poster, pankart, okul web sitelerinde bilgilendirici yazılar gibi öğrencilere hatırlatma ve farkındalık yaratmaya yönelik girişimler yapılması önerilir.

Anahtar Kelimeler: Belirtiler, Farkındalık, Over Kanseri, Öğrenciler, Risk Faktörleri.

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List of Abbreviations

TRNC: Turkish Republic of Northern Cyprus

BRCA: Breast Cancer gene

CA125: Cancer Antigen 125

WHO: World Health Organization

OCAM: Ovarian Cancer Awareness Measure

FIGO: International Federation of Gynecology and Obstetrics

CDC: Center for Disease Prevention and Control

AJCC: American Joint Committee on Cancer

HRT: Hormone Replacement Therapy

CHAPTER I

Introduction

1.1. Statement of the Problem

Ovarian cancer is one of the deadliest gynecologic cancers amongst cancers of the female reproductive system. According to the American Cancer Society, about 19,880 women will receive a new diagnosis for ovarian cancer and about 12,810 will die from it, a 64.4% mortality rate (American Cancer Society, 2022). According to the World Health Organization (WHO, 2020), it was stated that the incidence rate of ovarian cancer per 10,000 papulation was 6.6 and mortality rate is 4.2 in the world.

Globocan emphasizes that incidence of ovarian cancer will rise almost 40% by 2040 with developing countries bearing the greatest burden. Especially, 70% of women diagnosed each year live in low or middle income counties (Globocan, 2020). According to the TRNC Ministry of Health, ovarian cancer was the 6th most common cancer amongst women in Northern Cyprus from the year 2012-2016 in women aged 0-75 years old recording 52 cases of ovarian cancer (TRNC Ministry of Health, 2019). A study was conducted in Northern Cyprus from 2010-2014 (Sancar et. al., 2017) detailing the incidence of Ovarian cancer, it was stated the crude incidence rate of ovarian cancer per 100,000 papulation was 5.36 and the age standardized rate (above 15 years of age) per 100,000 population was 5.85.

There are a lot of risk factors which have been shown to be or potentially risk for an individual woman of developing ovarian cancer. For example, age, socio-economic status, ethnicity, family history, hormonal or reproductive factors (Globacan, 2020). There are also some factors associated with reproduction and gestation that can positively or negatively influence the risk for ovarian cancer in women, menopause and lack of fertility are more linked towards a higher risk whereas pregnancy and hysterectomy are linked to lower risks. Environmental factors and lifestyle can also affect the risk, e.g., obesity and carcinogens like cigarette/tobacco smoke (Salehi et. al., 2008; Sueblinvong & Carney, 2009). The risk of ovarian cancer is also lower in women who have had live births or abortions and for every subsequent live birth, the risk further decreases. The age at childbirth also matters, as it is indicated that advancement in age with pregnancies are associated with a lower risk of ovarian cancer. Endometriosis is also seen to having a relation

with ovarian cancer, increasing its risk, women who are nulliparous and have endometriosis have a 3-time higher chance of developing ovarian cancer (Momenimovahed et. al., 2019).

A study done in India (Naik et. al., 2019) showed that most women had a poor level of awareness about ovarian cancer and its risk factors, about 2.8% knew about risk factors and 14% knew about the symptoms. There were even some that didn't even know what ovarian cancer was. In a study conducted in Palestine (Elashami et. al., 2022) about the awareness of ovarian cancer risk and protective factors it was seen that the knowledge of these factors regarding ovarian cancer were low and there is a need for several interventions to help improve the awareness level of Palestinian women. A study conducted in Malaysia regarding the awareness of ovarian cancer risk factors among women revealed that awareness of ovarian cancer risk factors among Malaysian women is low and indicated a need for improvement of public information of the risks for ovarian cancer as well as additional supporting information for health care professionals (Keng et. al., 2015). Additionally, a study conducted in Oman about the awareness of risk factors, symptoms, and time to seek medical help of ovarian cancer amongst Omani women attending teaching hospital in Muscat Governorate showed that the overall level of detection and recognition of these risk factors as well as symptoms of ovarian cancer were low among Omani women with multiple barriers being emotional, practical, and service directed, not allowing them to seek early help (Al-Azri et al., 2018). In a study conducted (Babaei et. al., 2022), it was seen that participants of the study with a higher educational attainment and those with a family history of cancer showed higher level of knowledge of cancer and its risk factors and symptoms. The findings concluded that Iranian women have a moderate awareness level of ovarian cancer and low level of knowledge on the warning signs (Babaei et. al., 2022). In another study carried out in Nigeria by (Okunowo & Adaramoye, 2018) it was seen that 36% of the participants were found to be aware of ovarian cancer but only 19.5% and 14% demonstrated good knowledge of the symptoms and risk factors respectively (Okunowo & Adaramoye, 2018). These results it obvious that more ovarian cancer awareness measures need to be taken to improve awareness levels and help get past these barriers (Al-Azri et al., 2018).

In Northern Cyprus, there are no studies on the awareness of ovarian cancer. A study was done in Northern Cyprus, was found that age, chronic diseases, Hormone

Replacement Therapy (HRT), chemical substances were the risk factors for ovarian cancer (Sarmis, 2010).

It is believed that this study will close this research gap and contribute to the planning of primary health care services in Northern Cyprus. Oncology nurses have a lot of roles that are educator, risk-anticipator, skilled provider, critical thinker, empathizer, and advocate for safe and high-quality care. Therefore, it is important for nurses to be aware of the risk factors of ovarian cancer and to educate patients or risk groups on this issue. 72% of respondents in a study (Stewart et. al., 2019) done about ovarian cancer awareness in nurses stated that there was not enough awareness of ovarian cancer. Therefore, development of teaching programs for nurses should focus on improving knowledge, skills and attitude in highlighting the signs and symptoms. Posters can also be a good contributor in increasing the awareness levels of risk factors of ovarian cancer (Stewart et al., 2019; Ofinran et. al., 2015). It also seems meaningful for nurses to carry out these awareness programs among students. Universities are important places to reach young women at an early stage and determine their ovarian cancer awareness levels.

As nurses, it is also important to investigate new research and continue to grow as professionals, this study could serve as a good source of statistical information for nurses to develop further research and action plans to battle the seemingly inevitable rise of cancer incidence soon. It is good for nurses to be actively involved in cancer awareness programs in our communities.

1.2. Purpose of the study

The aim of this study is to determine the levels of awareness of ovarian cancer among female international students in Northern Cyprus.

1.3. Research Questions

1) What is the level of awareness of ovarian cancer among female international students in Northern Cyprus?
2) Is there a relationship between the scoring level of awareness of ovarian cancer and sociodemographic characteristics of the international students?

Research Variables

Independent Variables: Sociodemographic characteristics (age, ethnic group, native language, marital status, level of education)

Dependent Variable: Level of awareness of the risk factors, warning signs, barriers to seek medical help and the anticipated time to seek medical help of ovarian cancer.

1.4. Significance of the Study

This study can prove to close the research gap and contribute positively to the primary health care sector as well as the educational sector in Northern Cyprus. The study can help give an indication on whether there is a sufficient level of awareness about ovarian cancer risk factors or if there is a lack and more teaching is needed. Understanding the risk factors can help individuals at risk feel more knowledgeable and empowered and this can also improve a health care provider and patient communication (Puckett, et. al., 2017).

Since the study is done on international students, it provides the international body of North Cyprus data regarding the level of awareness regarding ovarian cancer amongst its international students. In some countries like Norway, gynecological cancers are much less frequently mentioned or talked about compared to other cancers, only 12 percent of participants from a study could name ovarian cancer as one of the female genital cancers (Fonnes et. al., 2021).

As nurses, it is important to be aware of the risk factors of ovarian cancer, this study can also help nurses by providing data about the awareness level of the public, in a previous study nurses stated that they wanted more awareness of ovarian cancer in the media combined with the use of pamphlets, leaflets and posters (Ofinran, et. al., 2015).

1.5. Limitations

The limitation of this study is the sample size and sampling method. The smaller sample size might not be representative of the larger population. It is not possible to reach students studying at all universities in the country. The research sample group was limited to the students that the researcher could reach in Northern Cyprus. Because

the data was collected online, responses to open-ended questions may have been limited.

1.6. Definition of Terms

Ovarian Cancer: Ovarian cancer is a cancer that develops in the tissues of the ovaries that store eggs needed for reproduction. They could either be epithelial or malignant germ cell tumors (National Cancer Institute, 2022).

Awareness: This is defined as the quality or state of being aware, it is the knowledge and understanding that something is happening or of its existence (Merriam-Webster, 2022).

Risk factor: This is something that increases risk or susceptibility (Merriam-Webster, 2022).

International Student: An international student is a student who is not a student or permanent resident of the country in which he/she studies (IGI Global, 2023).

CHAPTER II

Literature Review

This contains research related conceptual definitions, descriptions and data related to the subject that already exists in literature.

2.1. Theoretical Framework

2.1.1. Ovarian Cancer

2.1.1.1. Definition of Ovarian Cancer.

The Ovaries are a pair of female glands where the eggs form and female hormones estrogen and progesterone are formed (National Cancer Institute, 2022).

According to the National Cancer Institute, cancer is a disease where some of the body's cells grow uncontrollably and spread to other various parts of the body (National Cancer Institute, 2022)

Ovarian cancer is a cancer that affects the two ovaries that store eggs necessary for reproduction, sometimes it runs in the family (heredo-familial) but can affect anyone. It is essentially a cancer that begins in the epithelial cells that line the fallopian tubes or the peritoneum and the ovaries. Collectively, they are referred to as epithelial ovarian cancers. Ovarian cancer can originate in other cells like germ cell tumors, which begin in the cells that produce eggs and stromal cell tumors that begin in supporting tissues (National Cancer Institute, 2022).

2.1.1.2. Prevalence of Ovarian Cancer.

According to world cancer research international (2020), ovarian cancer is the 8th most commonly occurring cancer among women in the world and the 18th most common cancer overall. In the year 2020, there were 313,959 new recorded cases of ovarian cancer.

The countries with the highest incidence were Brunei, Samoa, Latvia, Poland, Serbia, Fiji, Hungary, Lithuania, Ireland, Slovakia. Total mortality was 207,252

which equates to a 66% mortality rate (World Cancer Research Fund International, 2020).

Total incidence of all cancers for women in Cyprus was 2,250 with a total mortality of 994 which equates to a 44.1% total mortality rate in 2020 (World Cancer Research Fund International, 2020).

There have been several factors leading to a rising trend in the incidence of ovarian cancer, these include growth of population, decreasing pregnancy and duration of lactation, tube litigation and increased risk factors of cancer. The Age standardized rate of ovarian cancer in 2018 was estimated to be 6.6 (Momenimovahed et al., 2019).

2.1.1.3. Signs and Symptoms of Ovarian Cancer.

There are some common signs and symptoms of ovarian cancer (American Cancer Society, 2022; DeVita et. al., 2019).

- Bloating: Having persistent bloating that doesn't go away.
- Eating complications: The individual may experience some difficulty eating or feeling full quickly.
- Pain: Some may experience some pain in the pelvic or abdominal areas.
- Urinary symptoms: Polyuria (excessive/ frequent urination) and urgent urination are usually seen.
- Changes in bowel habits: There are some cases that might present with some partial bowel obstruction.
- Unusual bleeding: There are usually changes in a woman's period involving heavier bleeding.
- Elevated levels of fatigue: Usually individuals with ovarian cancer experience elevated levels of fatigue and shortness of breath due to possible malignant pleural effusion.
- Unexplained weight loss: Some individuals present with unexplained weight loss as a result of decreased oral intake due to pressure on the intestines and stomach which makes it harder to keep meals down (DeVita et. al., 2019).

Many times, frequent misdiagnosis occurs due to a mix-up of symptoms of less severe diseases like irritable bowel syndrome). Most patients are identified in the

advanced stages of the disease when it becomes harder to treat (Center for Disease Prevention and Control, 2022). These symptoms are also commonly caused by non-cancerous diseases and by cancers of other organs. When ovarian cancer is the cause, they tend to stay longer and persist while exhibiting a deviation from normal, usually with increased frequency and greater severity. If symptoms occur more than 12 times a month, a visit to the physician is advised (American Cancer Society, 2022).

2.1.1.4. Risk factors for Ovarian Cancer.

There is no sure way to know if an individual will have ovarian cancer or not. Many non-high-risk women are affected but there are some factors that may increase the risk of developing ovarian cancer (Center for Disease prevention and Control, 2022).

Age: The risk for ovarian cancer grows as you get older, it is more common in women above the age of 50, although it can happen to a woman at any age. Higher incidence of this cancer is prominent in women above the age of 63 (American Cancer Society, 2022). The relationship between age and ovarian cancer is not certain. Although, researchers (Momenimovahed et. al., 2019; Gaitskell et. al., 2022; Cancer Research UK, 2021) have indicated that the younger age of ovarian cancer is associated with better outcomes. Older age in this disease is associated with more advanced diseases and lower rates of survival because older patients are less aggressively treated as opposed to younger patients, hence why older age is associated with a poorer survival rate (Momenimovahed Z. et al., 2019; Cancer Research UK, 2021; Gaitskell et. al., 2022).

Having / Being born with ovaries: Men are clearly not at any risk for developing this disease as they do not possess ovaries, likewise women who have had a previous oophorectomy will be at less risk for developing ovarian cancer. Other Gynecological procedures like hysterectomy and tubal ligation have also been associated with about 30% - 40% ovarian cancer risk reduction (DeVita et. al., 2019).

Family history: Family history is an important risk factor to assess, individuals with a family history of ovarian, breast or colorectal cancer are at a higher risk of developing ovarian cancer (Center for Disease prevention and Control, 2022; Andrade et. al., 2015). Women who carry the BRCA (Breast Cancer Gene) gene

mutations are at higher risks for both breast and ovarian cancers, family history predicts some possible mutations. 19% of women who had close relatives with breast or ovarian cancer develop a BRCA mutation (Andrade et. al., 2015).

Ethnicity: Those individuals who are of Jewish Eastern European descent are at a higher risk of developing ovarian cancer. Although, in a study done, it was seen that non-Hispanic black women have a worse survival rate than non-Hispanic white women (Center for Disease prevention and Control, 2022; Cheng et. al., 2021).

Reproductive history: A nulliparous woman (Woman who has never delivered a child) is at a higher risk for this disease. In General, a woman's reproductive history is quite strongly associated with her risk for ovarian cancer, full term pregnancies are associated with a lower risk of ovarian cancer (American Cancer Society, 2022; Husby et. al., 2022).

Hormone factors:

Oral Contraceptives: Due to its effect on ovulation, studies have identified that the use of oral contraceptives has prevented about 30,000 cases of Ovarian cancer every year and over the last 50 years about 200,000 cases and 100,000 deaths and oral contraceptives are used more in unaffected mutation carriers but used less in affected mutation carriers and those diagnosed with ovarian cancer (DeVita et. al., 2019; Schrijver et. al., 2021). Although there is an inverse relationship between the age of use and the time, the duration of consumption is more important. The risk reduction can last about 10-15 years after the pills have been discontinued (Momenimovahed et al., 2019).

Hormone replacement therapy: Researchers have stated that oral hormone therapy is associated with an increased risk of ovarian cancer individuals that have never undergone a hysterectomy. The risk between HRT and endothelial ovarian cancer is minimal but is seen to be consistent with declining cases of ovarian cancer alongside declining use of HRT over the last decade (Andrade de Melo et. al., 2015). It is believed that an extended use of estrogen methods, i.e., for ten years or greater is associated with a higher risk of ovarian cancer, also a case control study was done, and its results indicated that even though hormone therapy with estrogen alone increases ovarian cancer risk, it does not affect survival rate of patients (Momenimovahed et al., 2019; Andrade de Melo et. al., 2015).

Genetic mutations: Individuals with certain genetic mutations associated with ovarian cancer such as BRCA gene are at a higher risk for developing ovarian cancer (American Cancer Society, 2022; Schrijver et. al., 2021).

Endometriosis: Women with this condition are known to have a higher risk for also developing ovarian cancer (American Cancer Society, 2022).

Risk factors	***Predisposing***	***Non – predisposing/ Protective***
Age (Older age)	+	
Gynecological Procedures (i.e., tubal ligations, hysterectomy, oophorectomy)		+
Nulliparity	+	
Family History	+	
Oral Contraceptives		+
Hormone replacement therapy	+	
Genetic Mutations	+	

Figure 1. Risk Factors of Ovarian Cancer

(DeVita et. al., 2019; Momenimovahed et al., 2019; American Cancer Society, 2022; Center for Disease Prevention and Control, 2022).

2.2.2. Diagnosis and Screening methods of Ovarian Cancer.

Screening: There is no reliable way to screen for ovarian cancer in women who are asymptomatic. Screening is a way to look for a disease before there are presenting symptoms and cancer screenings are most effective in the initial stages of the disease. Screening can sometimes be over-relied on as a study stated that some individuals would not bother to check for body changes and other signs because they believe the screening should pick up anything (Smits et. al., 2016).

Diagnosis: To diagnose Ovarian Cancer, the physician exams and tests to confirm a suspicion after presenting symptoms (Berek et. al., 2021).

Staging: After diagnosis, the Doctors need to determine how far the spread is, this is called staging. Stages vary from stage I to IV, with IV being the most widespread. There are two systems used in the staging of ovarian cancer, the

International Federation of Gynecology and Obstetrics (FIGO) and the American Joint Committee on Cancer (AJCC), the systems for both are the same (FIGO, 2021; AJCC, 2021).

The factors used for classifying ovarian cancer are: (Berek et. al., 2021).

- The size of the tumor (T): Has the spread of the cancer exceeded the boundaries of the ovaries or the fallopian tubes? Has it metastasized to Pelvic organs like the uterus and bladder.
- The spread to close lymph nodes (N): Has the cancer reached the nodes in the pelvic region or the aorta (para-aortic lymph nodes)?
- The metastasis to farther sites (M): Has the cancer metastasized to other organs like the lungs, bones, liver?

Staging: (Caner Research UK, 2021).

Stage 1: The malignancy is mainly confined in the ovaries; the main treatment is surgery and chemotherapy in some cases.

Stage 2: In this stage, the cancer has spread past the ovaries and is now present in the pelvis. Surgery and chemotherapy are needed.

Stage 3: Here the malignancy has gone even beyond the pelvis and has spread to the lymph nodes and abdominal cavity.

Stage 4: At this stage, there is metastasis to other body organs like the lungs, surgery and chemotherapy are the treatments options.

Staging: (FIGO, 2021; AJCC; 2021).

IA: The tumor is confined in 1 ovary, no malignancy in ascites.

IB: Tumor is confined to both ovaries, no malignancy in ascites.

IC: The tumor is confined to either one or two ovaries with any of these:

IC1: Surgical spill

IC2: Capsule bursts prior to surgery or the tumor surfaces

IC3: Malignancy in ascites or peritoneal space.

IIA: Extensions to the uterus / fallopian tubes

IIB: Extended to the other different pelvic peritoneal tissues

IIIA1: There are retroperitoneal lymph nodes.

IIIA1(i): Metastasis of 10mm

IIIA1(ii): Metastasis > 10mm

IIIA2: Extra pelvic involvement

IIIB: Macroscopic peritoneal metastasis beyond the pelvis about 2cm in size.

IIIC: Macroscopic peritoneal metastasis beyond the pelvis > 2cm

IVA: Pleural effusion

IVB: Parenchymal and extra abdominal organ metastasis.

Surgical staging is usually done, when tissues are removed during an operation and then examined. If a surgical staging cannot be done, a clinical staging is done instead where imaging tests, biopsies and physical examinations are used (American Cancer Society, 2018).

2.2.2.1. Diagnostic test

A diagnostic test is to diagnose or confirm a suspected disease causing an array of symptoms. They can also be used to determine individuals that are considered 'high risk'. Attempts to find an accurate screening test for endothelial ovarian cancer have been unsuccessful till date. Cancer Antigen 125 (CA125), which was initially thought to be an indicator of ovarian cancer is now known to be non-specific and also lacks sensitivity in detection of stage I disease. CA125 is not used as a diagnostic test but instead to measure disease progression, regression and predict recurrence (Gubbels, et. al., 2010).

A pap smear test does not help in the diagnosis of ovarian cancer but rather in cervical cancer. Gynecological cancers do not have a sure-fire screening method (with the exception of cervical cancer) so it's important to recognize the warning signs. Paying attention to your body while noticing and reporting any changes to your physician is crucial (American Cancer Society, 2022).

A physician might recommend some exams and tests if some symptoms of ovarian cancer are present. Referral to a gynecologic oncologist is important to ensure the best treatment is given, it has also been shown to help patients with ovarian cancer live longer (American Cancer Society, 2022).

2.2.2.2. Imaging tests

Ultrasound: The ultrasound test is a test that utilizes sound waves to create images on a screen. If a problem with the ovaries is suspected, the ultrasound test is

mostly used to check for the presence of a tumor or if it's a fluid filled cyst. It can also help determine the size of the ovaries. A transvaginal ultrasound is the most useful non-invasive test that can help tell the difference between a benign and malignant mass (DeVita et. al., 2019).

Computed tomography (CT) Scan: The CT scan is an x-ray that makes more detailed cross-sectional images of your body. This can help determine if there is metastasis of malignancy. A CT scan can be used to evaluate a pelvic mass but isn't always needed (DeVita et. al., 2019).

Barium Enema X-ray: A barium enema test is a test to see if the cancer mas metastasized to the colon or rectum, it is rarely used for women with ovarian cancer (DeVita et. al., 2019).

Chest X-ray: An x-ray might be done to determine whether ovarian cancer has metastasized to the lungs. The spread may cause a fluid collection, referred to as a pleural effusion can be seen with chest x-rays as well as other types of scans (American Cancer Society, 2022).

Biopsy: The only way to determine if a growth is cancerous is to remove a piece of it and examine it in the laboratory. In the case of ovarian cancer, a biopsy is usually done during surgery. If the patient has ascites, a sample of the fluid (via paracentesis) can also be used to diagnose the cancer (American Cancer Society, 2022).

2.2.3. Treatment for Ovarian Cancer.

Ovarian cancer is a cancer that is staged surgically which means it is impossible to detect the stage of the disease without a surgical evaluation of the metastasis. Chemotherapy in the initial stages of the disease depends on the grade of the tumor, it is recommended that patients with more advanced stages (2,3 or 4) undergo a cytoreductive surgery to remove all visible tumor whenever feasible, followed by platinum and taxane based chemotherapy (Gubbels et. al. 2010). Surgery and Chemotherapy are the two main critical treatment regimens for ovarian cancer. Radiation therapy on the other hand isn't a primary method but is used for palliation in brain, bone or another metastasis (Kerr et. al., 2016).

The treatment of ovarian cancer involves two major things: Chemotherapy and Surgery. In Surgery, the doctors remove the malignant tissue from the ovaries in an

operation, while in chemotherapy special medicines are used to reduce the size or kill the cancerous tissues, there are different route of administration for the drugs (Gubbels, et. al. 2010).

Some examples of the medications approved for ovarian cancer chemotherapy include: (National Cancer Institute, 2022).

- Avastin (Bevacizumab)
- Cisplatin
- Doxil (Doxorubicin Hydrochloride Liposome)
- Gemzar (Gemcitabine hydrochloride)
- Niraparib Tosylate Monohydrate
- Olaparib
- Carboplatin.

2.2.4. Nursing care of Ovarian Cancer.

2.2.4.1. Roles of Nurses in Primary Care of Ovarian Cancer.

Community awareness is a very important part of preventive health care and nurses play a significant role in this. A study highlighted the role of nurses in preventive health as significant. An improved outreach via social networking is one way to improve awareness (Fooladi, 2015). Primary care nurses can promote participation in screening, however for the beneficial aspect of screening to be noticed, a good amount of the population must partake. When primary health care professionals recommend, there is a positive turnout to screening (Fooladi, 2015; Skrobanski et. al., 2019).

The awareness of ovarian cancer is lacking amongst a great deal of people, educated and uneducated. Some ways to promote awareness include: (Target Ovarian Cancer, 2023).

Campaigns, these are a way to help awareness by getting materials out to the local communities to provide information as well as on online platforms where individuals can share their individual experiences as well to provide unique perspectives on the matter.

School forums, many educated individuals at universities are not well aware of the signs or symptoms of ovarian cancer, creating forums and awareness programs in universities can increase awareness.

Training for Nurses, to help increase the level of knowledge regarding identifying signs and symptoms of ovarian cancer. Institutions should include training courses for staff members to raise their level of competence.

Sharing facts regarding ovarian cancer can help improve awareness like it being more deadly than the other gynecological cancers or that the survival rates are low and needs improvement as well as the great importance of detecting ovarian cancer on time. Findings are also a great way to support and create awareness, to groups like cancer org UK and American Cancer Society. Putting up posters in the local community and having forums at the place of work and schools can raise awareness levels further (Ovarian Cancer Action, 2022). Online infographics shared across different platforms are also an importance way to spread awareness (Target Ovarian Cancer, 2023).

2.2.4.2. Roles of Nurses in Secondary Care of Ovarian Cancer.

Nurses have a lot of responsibilities when dealing with a patient with cancer. The plan of care involves assessment, pain management, emotional and therapy support as well as nutritional balance.

Cognitive behavioral therapy is an important part of the management of ovarian cancer, high levels of fatigue have been documented in ovarian cancer patients. However, these increased levels of fatigue are associated with an increased risk of sleep disturbance and depression. A study (Zhang et. al., 2018) was conducted on 72 patients who had completed an initial cycle of chemotherapy to determine the feasibility of nurse-led home-based care and CBT for ovarian cancer. After the interventions, the experimental group showed significantly lower symptoms of depression. Duration of sleep, dysfunction in sleep, and daytime dysfunction and quality of overall sleep improved significantly (Zhang et. al., 2018).

Nursing care at its core is holistic and should be in the care of patients with ovarian cancer, as well as patient centered. Oncology nurses play a central role in improving the chances of patient survival by including early detection programs and

treatment. The nurse is to carry out several tasks in clinical settings, outpatient, palliative and home healthcare services. It is shown that nurses spend greater amounts of time with patients than other health care workers so the role of the nurse in patient recovery is proven to be vital (Uwayezu et. al., 2020).

2.2.4.2. Nursing Diagnosis and Intervention in Ovarian Cancer.

Acute pain: This is related to the disease process and the side effects of various chemotherapy agents.

Interventions

- Determine the history of pain and evaluate the effects of certain therapy e.g., radiation, chemotherapy, surgery.
- Determine needed frequency of assessment of patient's comfort.
- Explore with the patient factors that relieve/worsen pain.
- Encourage the use of relaxation and stress management techniques e.g., guided imagery, deep breathing, aromatherapy.
- Administer analgesics as indicated: Opioids, NSAIDs, Corticosteroids
- Evaluate pain relief, control at regular intervals, and adjust meds as needed.

***Imbalanced nutrition, less than body requirements*:** related to (I) hypermetabolic state associated with cancer (ii) effects of chemotherapy, radiation and surgery.

Interventions

- Monitor daily food intake.
- Ensure diet contains high Fiber foods to prevent constipation as ovarian cancer patients often feel bloated.
- Weigh patient at appropriate intervals
- Control environmental factors and avoid foods that are too sweet, spicy, or fatty.
- Adjust patient's diet according to treatment regimen.
- Nausea and vomiting are common side effects of chemotherapy so administer antiemetics as needed.
- Refer to a nutritionist or dietitian.
- If indicated, include the use of a nasogastric tube.

***Grieving*:** related to anticipated loss of physiological health and potential mortality of patient.

Interventions

- Assess stage of grief experienced by the patient and their significant others.
- Provide a non-judgemental and open, safe environment facilitated by therapeutic communication methods.
- Encourage patient to express their current thoughts and emotions, express to them the normality of these current feelings.
- Be observant and aware of patient's mood changes.
- Do not give false hope, provide appropriate teaching regarding the disease process.
- Refer to hospice home/care if needed.

***Risk for infection*:** related to immunosuppression, malnutrition, and invasive procedures.

Interventions

- Monitor vital signs and assess systems.
- Monitor WBC count and differential results.
- Teach patients and family how to avoid infections.
- Promote handwashing and personal hygiene.
- Limit the number of invasive procedures when possible.
- Give antibiotics as indicated and prescribed by physician.
- Promote exercise and adequate rest periods.

Other nursing diagnosis include risk for chronic low self-esteem, fatigue, risk for constipation, Diarrhea, Ineffective sexuality patterns, anxiety, risk for deficient fluid volume, Interrupted family process (NANDA international & Herdman, T. H. 2020; Bulechek et. al., 2012).

2.2.6. Related Research

In a study conducted in Palestine by (Elashami et al., 2022) about the awareness of ovarian cancer risk and protective factors it was seen that the knowledge of these factors regarding ovarian cancer were low and there is a need for several interventions to help improve the awareness level of Palestinian women.

A study conducted in Oman by (Al-Azri et. al. 2018) about the awareness of risk factors, symptoms, and time to seek medical help of ovarian cancer amongst Omani women attending teaching hospital in Muscat Governorate showed that the overall level of detection and recognition of these risk factors as well as symptoms of ovarian cancer were low among Omani women with multiple barriers being emotional, practical, and service directed, not allowing them to seek early help. This makes it obvious that more cancer awareness measures need to be taken to improve awareness levels and help get past these barriers (Al-Azri et al., 2018).

In a study conducted by (Babaei et. al., 2022) it was seen that participants of the study with a higher educational attainment and those with a family history of cancer showed higher level of knowledge of cancer and its risk factors and symptoms. The findings concluded that Iranian women have a moderate awareness level of ovarian cancer and low level of knowledge on the warning signs (Babaei et al., 2022).

In another study carried out in Nigeria by (Okunowo & Adaramoye, 2018) it was seen that 36% of the participants were found to be aware of ovarian cancer but only 19.5% and 14% demonstrated good knowledge of the symptoms and risk factors respectively (Okunowo & Adaramoye, 2018).

Ovarian cancer is one of the most common cancers in women in the United States, it particularly has a poor survival rate which is largely due to late stages of diagnosis. In a survey study, knowledge levels regarding symptoms of ovarian cancer were seen to be as low as 15%, but there was also a low level of knowledge amongst health care providers as well with less than 2/3 of them not being able to correctly identify the symptoms of ovarian cancer. Studies show that NPs (nurse practitioners) and PAs (Physician’s assistant) were noted to have some knowledge deficits regarding the correct identification of symptoms of ovarian cancer. The participants of this study were able to mostly identify bloating and pelvic/abdominal pain more than 90% of the time but not with urinary symptoms (Goldstein et. al., 2016).

A cross-sectional descriptive study was conducted in Osun and Oyo states in Nigeria regarding ovarian cancer symptoms awareness, warning symptoms and help seeking responses by female health care professionals. 457 respondents were selected at random aged between 20 and 62 with the median age being 34.19. About 46.2% were able to recall a warning symptom of ovarian cancer while only 4.4% were able to recall more than 3 warning symptoms. It was seen in this study that the most noted obstacle in seeking professional medical help was anxiety regarding potential findings of the physician, which was seen in 62%, while others felt like it was a waste of the physician's time (18%) and 7.9% reported no barriers in seeking medical help. There was also a correlation between level of education and the awareness and ability to identify warning symptoms of ovarian cancer as 39.9% - 75.9% of individuals with a tertiary education were able to identify the different ovarian cancer symptoms (Adeyemi et.al., 2014).

A survey was conducted by Brian K. et. al. in Wales regarding awareness and beliefs about cancer in adults aged 50 and above. The study included 2298 men and women. The results showed that the most recognized symptoms were post-menopausal bleeding (87.4%), Pelvic pain (79.0%) and Abdominal pain (85.0%). More than 50% of the respondents could identify back pain, increase in abdominal size, tiredness and bloating. There was also a significant correlation between age and ovarian cancer symptom awareness, participants aged 70 and above displayed a significantly lower level of awareness in comparison to those aged 50-59 and 60-69. Usually known as the silent killer, Ovarian cancer is starting to slowly be more recognized as having identifiable early symptoms. Nonetheless, an effective screening method is still needed (Brian et. al., 2014).

In India, a study was done by Naik, et. al. about the awareness of ovarian cancer and its symptoms and risk factors amongst women of a reproductive age. The study showed that only a third (1/3) women had ever heard of ovarian cancer and only 3.5% showed a good level of awareness about the disease. 13.4% had a fair level of awareness and poor awareness levels were noted in a large 83.1% of the women. Only 14.1% knew about the symptoms of ovarian cancer but only 2.8% knew of the risk factors, even though 81.6% of the women had at least a secondary education. The study helped note the poor awareness level about ovarian cancer and the need for better education regarding the subject (Naik et. al., 2019).

Another study was conducted in Malaysia, it was a study about the awareness of ovarian cancer risk factors among women. The participants in this study were also above the age of 20 and highly educated (50.6% having college and university educated). A risk questionnaire was used, and the results showed that most of the women had heard about ovarian cancer in the past (85.1%) while the other 14.9% had never heard of ovarian cancer. The results also showed that 82% of the women answered wrongly regarding height being a risk factor for ovarian cancer and 71% answered wrongly about nulliparity being a risk factor. The majority answered correctly about age (65%), family history (56%), and genetic predisposition (58%). The study also showed a certain correlation between age and the level of awareness, 8.3% of individuals aged 41-60 had higher levels of awareness while 32% of those aged 20-40 had a high level of awareness. The study showed that there is indeed a lack of proper awareness about the risk factors of ovarian cancer in Malaysian women, indicating that more attention should be given to older women (Keng et. al., 2015).

CHAPTER III

Methodology

This chapter provides information regarding research design, sample, data collection, analysis and ethical procedures including.

3.1. Research Design

This study is a cross sectional and descriptive study.

3.2. Population and the Sample

3.2.1 Area of Study, Population and Period of Study.

The population of this study included the international students in the Northern Cyprus between September 1, 2022 and April 1, 2023. International students were chosen because there are too many international students at Universities in Northern Cyprus and there are very few studies on this subject with young groups. It is not unknown official total number of international students in the 2022-2023 academic years. There are a total of 23 universities in Northern Cyprus with a known official total number (50375) of international students in the 2021-2022 academic years (YOBIS, 2022). The population of the study was formed by participating in this study from seven universities, which are the universities with the highest number of students.

3.2.2. Sample Size Determination.

The sample size of 382 (95% confidence interval and 5% sampling error) was determined and calculated using the sample size method of sample size determination of known population. The sample size of the study consisted of 389 female students. Due to the long data collection period, more students were reached than the planned number of students. An additional seven students were seen to have no significant negative effect on the reliability of sample size.
The details of the calculation of the number of samples are as follows;

N: Number of people in the study population

n: Number of individuals to be sampled

p: Frequency of probability of occurrence of the event under investigation

q: Frequency of non-occurrence of the investigated event (probability of not occurring)

t: Theoretical value found according to the t table at a certain significance level

d: It is the sampling error accepted according to the incidence of the event.

$$n = \frac{N * t^2 p * q}{(N-1)d^2 + t^2 * p * q} \quad n = \frac{50375 * (1.96)^2 * 0.50 * 0.50}{(50374)(0.05)^2 + (1.96)^2 * 0.50 * 0.50} = 382$$

In this study, it was used simple random sampling technique from non-probability sampling methods. The criterion for selection includes.

- To speak and understand English.
- To be female gender
- To be international student
- Enrolled graduate or undergraduate students
- Willing to participation in the study

3.3. Data Collection Tools /Materials

The data collection tools are the informed consent form for international students, student information form and the Ovarian Cancer Awareness Measure (OCAM) questionnaire. The study data is collected using a web-based online survey by researcher to collect data, the online survey link will be shared by social media, students' email address and students' WhatsApp groups of universities in Northern Cyprus.

3.3.1. *Informed Consent Form*

This form was used to ascertain the willingness of the participants to be included in this party, they were under no obligation to participate and have the willing option to accept or decline (Attachment A).

3.3.2. *Student Information Form*

This form contained sociodemographic characteristics of about the participants including age, gender, ethnic group, marital status, level of education, current university and department (Attachment A).

3.3.3. *Ovarian Cancer Awareness Measure (OCAM)*

The OCAM is a data collection tool created by Cancer Research UK, Kings college London and Oxford University in 2007-2008. The OCAM contain some questions which evaluate the awareness level of ovarian cancer for risk factors (12 items), warning signs (11 items), barriers to seek medical help (10 items) and the anticipated time to seek medical help (11 items) (Attachment A) (Cancer Research UK, 2022). According to Simon et al.'s study, it was found that the Cronbach's alpha value of the OCAM is $\alpha = 0.88$. In the making of the OCAM scale, scores for overall knowledge were calculated by summing the scores for the risk factors, incidence peak age, warning signs, awareness and lifetime risks. A scale was made such that a higher score indicated better knowledge about ovarian cancer with a minimum score being '0' and a maximum score of '72' (Simon et al., 2012).

Item scoring of OCAM

The analyses of open questions for warning signs and risk factors, 1 point as taken to each warning sign or risk factor that correspond to an item in the prompted list which scores for 'correct' items. The total score of open warning signs is the range 1-10 point and the total score of open risk factors is 0-12 points with higher scores indicate greater knowledge. The prompted warning signs items were taken as 0 (no/don't know) point or 1 (yes) point and the range of total point is 0-10. All of the prompted risk factor items were scored on a 5 point Likert scale (from 1 (strongly disagree) to 5 (strongly agree)). A summed scale for the prompted risk factor was showed with higher scores indicating greater knowledge (range:12-60).

Anticipated time to help-seeking item on anticipated time to seeking for symptoms were scored individually on an ordinal scale from (1-3 days) to 10 (never) with higher total scores indicating higher scores who greater delay in help-seeking.

Peak age of incidence item was taken as correct point (score=1) if a participant answered that the age most likely to develop ovarian cancer was either 0 years or 50

years, but incorrect point (score=0) for the response ’30 years old’. While the correct answer could be considered to be 70 years and 50 years and older (both responses).

Lifetime risk scored into correct (score 1) for responses of 1-2 out of 100 for ovarian cancer.

Total knowledge

For the OCAM, an overall knowledge score was evaluated by adding together scores for all of the items. The higher scores of the OCAM indicated greater knowledge about ovarian cancer (0-72).

3.4. Data Collection Procedures

The data collection was performed from September 1, 2022- April 1, 2023. The participants gave their willing consent and were asked to fill out an online based form. The questionnaires were sent online via email, WhatsApp, and social media. Student e-mail addresses of some universities and phone numbers of class representatives for WhatsApp groups were reached. The link to the Google form was also shared on social media by the researcher and his friends. The participants were informed of the confidential nature of the research study and that names were not required so they could feel safe enough to answer as honestly as possible as the data would be anonymous. Any questions asked by the correspondents were answered and clarified immediately via text.

3.5. Data Analysis Plan

The data was analysed using Statistical Package for Social Sciences (SPSS) 24.0 software. The findings for the sociodemographic characteristics of the students were shown using a frequency analysis. Frequency and percentage analysis were also used to show the history of ovarian cancer of the research participants. A descriptive statistical test was used to show the students’ scores on ovarian cancer awareness, while the Kruskal-Wallis test was used to compare the participants scores by age group, ethnic group, and marital status. The Mann-Whitney U test was used to compare the participants scores by educational levels. Post hoc test (Dunnett T3) test was used to determine the difference between the groups.

3.6. Ethics Consideration.

The study was approved by the ethics committee of Near East University on 28.06.2022 (IRB No. NEU/2022) (Appendix File B). All participants were provided with an informed consent check that was cleared before other data collection commenced. It was stated that the information is confidential and will not be shared with individuals not part of the research study. The responsible author, who verified the validity and reliability of the scale, was contacted and his approval was obtained (Appendix File C).

CHAPTER IV

Findings

This chapter presents the findings based on the collected data.

4.1. Findings for Sociodemographic Characteristics of the Students

Table 1.

Sociodemographic Characteristics of International Students (n=389)

Variable	Categories	Frequency	Percentage
Age range	18 – 22	181	46.5
	23 – 27	155	39.8
	28 & Above	53	13.7
Ethnicity	Black/African	142	36.5
	White	81	20.8
	Asian	68	17.5
	Arab/Middle Eastern	64	16.5
	Hispanic	18	4.6
	Mixed race	16	4.1
Marital Status	Single	307	78.9
	Married/Living with Partner	82	21.1
Education	Bachelor degree	306	78.7
	Postgraduate degree	83	21.3
Department	Health related	83	21.3
	Out of health	306	78.7
University	Near East University	123	31.6
	Cyprus International University	104	26.7
	Lefke European University	57	14.7
	Eastern Mediterranean University	46	11.8
	Girne University	32	8.2
	Girne American University	18	4.6
	Bahçeşehir Cyprus University	9	2.4

In Table 1, the distribution of the international student's descriptive characteristics is given. Majority of the participants were between 18 –22 years 46.4%, 23–27 were 39.8% from 28 and above 13.6%. Regarding ethnicity,

Black/African makeup 36.5%, Asian 17.5%, White 20.8%, Arab/Middle Eastern 16.5%, Hispanic 4.6%, and Mixed race 4.1%. As for marital status, Single accounted for the majority with 78.9%, married/living with partner 21.1%. In terms of education, bachelor's degrees 78.7% and postgraduate degrees 21.3%. 21.3% of students have department on health. Regarding Universities attending, Near East University had the majority of the respondents with 31.6%, Cyprus International University 26.7%, European University of Lefke 14.7%, Eastern Mediterranean University 11.8%, Girne University 8.2%, Girne American University 4.6%, and Bahçeşehir University 2.3%.

Table 2.

History on Ovarian Cancer of International Students (n=389)

Variables	**No**	**I Don't Know**	**Yes**
History of ovarian cancer	**n %**	**n %**	**n %**
You	370 (95.1%)	15 (3.9%)	4 (1.0%)
Partner	360 (92.5%)	20 (5.1%)	9 (2.4 %)
Close family member	155 (39.8%)	116 (29.8%)	118 (30.36%)
Other family members	215 (55.3%)	101 (26.0%)	73 (18.8%)
Close friend	256 (65.8%)	123 (31.6%)	10 (2.6%)
Other friends	241 (62.0%)	117 (30.1%)	31 (8.0%)

In Table 2, the history of ovarian cancer of international students is given. 1% of the international students had history of ovarian cancer. 39.8% of them had no a close family member that has history of ovarian cancer and 30.3% of them have close family members with ovarian cancer. It was found that 65.8% of international student have no close friends and 62.0% of them have no other friends with ovarian cancer.

4.2. Findings for Research Question I

Table 3.

The Descriptive Statistics International Students Scores on Ovarian Cancer Awareness Measure Scores (n=389)

Awareness Section	**Mean**	**SD****	**Min.**	**Max.**
Warning signs (open)	3.74	0.78	1.00	5.00
Warning sign (prompted)	8.07	2.47	1.00	10.00
Risk Factors (open)	1.95	0.29	0.00	4.00
Risk Factors (prompted)	48.57	8.41	12.00	58.00
Peak age of incidence (correct)	0.78	0.41	0.00	1.00
Awareness of ovarian cancer screening program (correct)	0.03	0.17	0.00	1.00
Awareness Section	**Frequency**	**Percentage**		
Peak age of incidence (correct)	304	78.1		
Awareness of breast screening (correct)	313	80.5		
Age women invited for screening (correct)	7	1.8		
Awareness of cervical screening (correct)	295	76.0		
Age women invited Cervical for screening (correct)	146	37.5		
Awareness of Bowel Cancer Screening program (correct)	253	65.0		
Age women invited for screening (correct)	3	0.8		
Awareness of ovarian cancer screening program (correct)	13	3.3		
Age women invited for screening (correct)	5	1.3		
Total OCAM knowledge score*	**57.45**	**11.46**	**13.00**	**68.00**

*Total OCAM knowledge score = Prompted warning signs + Prompted risk factors + Peak age of incidence + Ovarian screening program.

**Standard deviation

In Table 3, the statistics of the level of awareness of ovarian cancer among female international students are presented. The mean warning sign of ovarian cancer (open) is 3.74. The mean warning sign (prompted) is 8.07. The mean risk factor for ovarian cancer (open) is 1.95 while that of the prompted is 48.57. 78% of the students correctly identified the peak age of the incidence of ovarian cancer. 80.5% of the students know that there is a breast screening program and 1.8% correctly

identified the age women are invited for screening for breast cancer. Awareness of cervical screening was correctly identified by 76% of the students while the age women are invited cervical for screening was correctly identified by 37.5% of the students. 65% of them display awareness of bowel cancer screening program correctly while only 3 students were aware of the age women are invited for screening. 5 students knew that there is no ovarian cancer screening program while 5 students correctly knew that there no age at which women are invited for the ovarian screening program.

The total mean score of the level of awareness of ovarian cancer is 57.45 (min. 13-max.68) which is 80% of the total awareness score of 72. This shows that on average, 80% of the students display good awareness of ovarian cancer.

4.3. Findings for Research Question II

Table 4.

The Comparison of International Students points taken from Ovarian Cancer Awareness Measure Scores by Age Group (n=389)

Variables	Age Group	Mean Rank	X^2	df	p
Warning signs (open)	18 – 22	198.72	.974	2	.614
	23 – 27	194.01		2	
	28 & Above	185.17		2	
Warning sign (prompted)	18 – 22	197.62	.491	2	.782
	23 – 27	194.90		2	
	28 & Above	186.32		2	
Risk factors (open)	18 – 22	192.51	.264	2	.876
	23 – 27	196.55		2	
	28 & Above	198.98		2	
Risk Factors (prompted)	18 – 22	188.98	1.839	2	.399
	23 – 27	196.02		2	
	28 & Above	212.58		2	
Total OCAM Score	18 - 22	191.92	.834	2	.659
	23 - 27	194.22		2	
	28 & Above	207.79		2	

Table 4 shows the Comparison of International Students' points taken from Ovarian Cancer Awareness Measure (OCAM) Scores by age groups. As seen from Table 4, The OCAM score of age 28 age and above groups were high (mean rank=207.79) but there is no statistically significant difference between the age group of international students and their awareness of ovarian cancer measure (p>0.05).

Table 5.

The Comparison of International Students points taken from Ovarian Cancer Awareness Measure Scores by Ethnic group (n=389)

Variable	Ethnic Group	Mean Rank	X^2	df	p
Warning signs (open)	Black/African	196.91	4.558	4	.336
	Asian	171.30			
	White	181.35			
	Arab/Middle Eastern	187.05			
	Hispanic	193.42			
Warning signs (prompted)	Black/African	166.19	15.674	4	.003*
	Asian	209.43			
	White	210.12			
	Arab/Middle Eastern	175.09			
	Hispanic	204.72			
Risk factors (open)	Black/African	177.03	3.022	4	.554
	Asian	195.02			
	White	189.69			
	Arab/Middle Eastern	196.20			
	Hispanic	190.50			
Risk Factors (prompted)	Black/African	153.22	28.857	4	.000**
	Asian	214.40			
	White	224.77			
	Arab/Middle Eastern	181.63			
	Hispanic	199.14			
Total OCAM Score	Black/African	154.48	27.410	4	.000**
	Asian	213.49			
	White	223.83			
	Arab/Middle Eastern	179.44			
	Hispanic	204.64			

P≤0.05* p≤0.01**

Table 5 shows the comparison of international students' points taken from OCAM Scores by ethnic group. It was found that there is a statistically significant difference between the ethnicity of students and OCAM of warning signs (prompted) (p=0.003), risk factors (prompted) (p=0.003), and the Total OCAM knowledge Score (p< 0.001). There is a difference between groups: for the warning sign prompted difference is between Black/African –White (p=0.025), for risk factor prompted and the Total OCAM knowledge Score difference is between black/ African – Asia (p < 0.05), black/ African – White (p < 0.05).

Table 6.

The Comparison of International Students points taken from Ovarian Cancer Awareness Measure Scores by Marital Status (n=389)

Variable	Marital Status	Mean Rank	X^2	df	p
Warning signs (open)	Single	196.34	3.337	4	.503
	Married/Having Partner	187.17			
Warning sign (prompted)	Single	198.93	7.193	4	.126
	Married/Having Partner	157.57			
Risk factors (open)	Single	195.10	.293	4	.990
	Married/Having Partner	193.28			
Risk Factors (prompted)	Single	192.82	4.801	4	.308
	Married/Having Partner	180.41			
Total OCAM Score	Single	194.06	5.399	4	.249
	Married/Having Partner	172.44			

Table 6 shows the Comparison of International Students' points taken from OCAM Scores by Marital Status. As seen from Table 6, The OCAM score of single groups were high (mean rank=194.06) but there is no statistically significant difference between the marital status of international students and their awareness of ovarian cancer measures (p>0.05).

Table 7.

The Comparison of International Students' points taken from Ovarian Cancer Awareness Measure Scores by Educational Level (n=389)

Variable	Educational Level	Mean Rank	Sum of Ranks	U	P
Warning signs (open)	Bachelor degree	195.39	59789.00	12580.000	.869
	Postgraduate degree	193.57	16066.00		
Warning sign (prompted)	Bachelor degree	200.39	61320.50	11048.500	.048*
	Postgraduate degree	175.11	14534.50		
Risk factors (open)	Bachelor degree	194.88	59634.00	12663.000	.962
	Postgraduate degree	195.43	16221.00		
Risk Factors (prompted)	Bachelor degree	192.87	59018.00	12047.000	.471
	Postgraduate degree	202.86	16837.00		
Total OCAM knowledge Score	Bachelor degree	194.99	59667.00	12696.000	.997
	Postgraduate degree	195.04	16188.00		

$p \leq 0.05$*

Table 7 shows the Comparison of International Students' points taken from OCAM Scores by educational level. It was determined that there is a statistically significant difference between the educational level and the Ovarian Cancer Awareness Measure of warning signs (prompted) ($p=0.048$) ($p<0.05$). Bachelor's degree has a higher score (mean rank 200) as compared to post graduate.

Table 8.

The comparison of international students' points taken from Ovarian Cancer Awareness Measure (OCAM) Scores by Department

Variable	Educational Level	N	Mean Rank	Sum of Ranks	U	P	
Warning signs (open)	Non - Health	290	193.08	55993.50	13798.500	.309	
	Health	99	200.62	19861.50			
Warning sign (prompted)	Non - Health	290			14050.500	.732	
	Health	99	196.05	56854.50			
Risk factors (open)	Non - Health	290	193.31	55672.00	14056.000	.546	
	Health	99	196.02	19406.00			
Risk Factors (prompted)	Non - Health	290	192. 20	55739.00	14056.000	.400	
	Health	99	203.19	20116.00			
Total OCAM Score	Non - Health	290	193.77	56192.50	13997.500	.711	
	Health	99	198.61	19662.50			

P≤0.05* p≤0.01**

Table 8 shows the Comparison of International Students' points taken from OCAM Scores by Health & Non-Health department. Table 8 shows that there is no statistically significant difference between international students who are studying Health & Non – Health courses and their awareness of ovarian cancer measures.

CHAPTER V

Discussion

This chapter presents the discussion on the personnel characteristic findings of the international students, the level of awareness of ovarian cancer and the relationship between the scoring of OCAM and sociodemographic characteristic findings in comparison to the studies in the literature.

Ovarian cancer, which is the deadliest gynecologic cancer, has many risk factors that go 'under the radar' in terms of awareness and detection of early warning signs. A study by (Brian et. al., 2014) showed that numerous symptoms of ovarian cancer were not known or recognized by women, symptoms associated with eating and bowel/bladder patterns were often the hardest to identify, only 36% of the time for difficulty eating and about 32% for bladder habits in said study. The early detection of ovarian cancer could be a life-saving intervention for many, hence the importance of its awareness in today's society. Which is why it's important to assess the levels of awareness of ovarian cancer and its risk factors as well as the signs and symptoms. Education about the awareness of ovarian cancer is crucial to the community and individuals who are at a higher risk of developing ovarian cancer. This study on ovarian cancer awareness with a group of young women students is considered important. Older age and family history is an important risk factors for ovarian cancer (CDC, 2022). In this study, it was determined that almost half of the students were in the 18-22 age group (Table 1), and it is remarkable that 1% of the students reported that they had a history of ovarian cancer (Table 2). In this study, it was found that one third of students had close family members that has history of ovarian cancer. It is seen that the incidence of ovarian cancer risk in the families of female international students is not low. This data supports the knowledge of international organizations that the incidence of ovarian cancer will increase by almost 40% by 2040 (Globocan, 2020).

5.1. Discussion on Level of awareness of ovarian cancer among female international students

In this study it was found that the total mean score of the level of awareness of ovarian cancer is 57.45 which is 80% of the total awareness score of 72. This shows that on average, 80% of the students display good awareness of ovarian cancer (Table 3). In addition, they had low awareness of open warning signs (mean:3.74, sd:0.7) and risk factors (mean:1.95, sd:0.2) and high awareness of prompted warning signs (mean:8.07, sd:2.4) and risk factors (mean:48.57, sd:8.4) in OCAM (Table 3). In the study, the students did much better when prompted in the warning signs and risk factor questions but scored quite poorly in open questions when asked to list as many as they know. Similarly, in regard to awareness levels of a study group in Palestine (Elashami et. al., 2022), it was seen that the women had low levels of awareness regarding ovarian cancer risk factors when asked to identify them. In a study conducted India by Naik et al 2019, it was found that 13.4% of women had a fair level of ovarian awareness and poor awareness and poor awareness level are noted in a large 83.1% of the women. In a study conducted with young British population, it was found that the level of awareness of ovarian cancer symptoms was low and the risk factors were good (Radu et al., 2023). In Okunowo and Adaramove's study (2018), it was determined that only 19.5% and 14% of women have good knowledge of the symptoms and risk factors respectively. In Babaei et al.'s study (2022), it was found that Iranian women have moderate awareness level of ovarian cancer and low of knowledge on warning signs. Another study was conducted in Malaysia, most of the women had heard about ovarian cancer in the past (85.1%). And, in same study, 82% of the women answered wrongly regarding height being a risk factor for ovarian cancer and 71% answered wrongly about nulliparity being a risk factor. The majority answered correctly about age (65%), family history (56%), and genetic predisposition (58%) (Keng et al., 2015). A study conducted in Oman by (Al-Azri et. al. 2018) about the awareness of risk factors, symptoms, and time to seek medical help of ovarian cancer amongst Omani women showed that the overall level of detection and recognition of these risk factors as well as symptoms of ovarian cancer were low among Omani women with multiple barriers being emotional, practical, and service directed, not allowing them to seek early help. When the studies on ovarian cancer awareness are examined; it is

noteworthy that there are similarities and differences with the results of this study. Unlike these studies, the level of awareness of ovarian cancer in general was high in this study. The fact that this study was conducted with a group of young and highly educated students may be the reason for this difference. Conversely, in this study's results shows students have low awareness of open warning signs and risk factors. In this results supports findings of others studies (Al-Azri et al., 2018; Babaei et al., 2020; Okunowo and Adaramove, 2018; Radu et al., 2023).

In Radu et al.' (2023) study, 57.9% of young people incorrectly answered that there is an ovarian cancer screening programme. On the other hand, 13% of students correctly answered that there is an ovarian cancer screening programme in this study (Table 3). The lack of population screening programs for ovarian cancer may have led to low awareness of this issue. Therefore, early detection of early symptoms of ovarian cancer is still critical (Radu et al., 2023).

In this study, it was determined that the students had the highest awareness of breast and cervical screening program, age of ovarian cancer incidence and the least awareness of ovarian screening program and age women invited for ovarian screening (Table 3). The high incidence of breast and cervical cancer in Northern Cyprus (Sancar et. al., 2017) may indicate that students are more aware of these issues. In a study done (Rahman et al., 2019) on breast cancer awareness it was seen that 99.2% of female students knew about breast cancer and knowledge of risk factors was tied to campus. Most of them seemed to get their information via social media which could indicate that the high level of awareness of breast cancer as compared to ovarian cancer could be due to the higher awareness promotion of breast cancer on social media platforms like Facebook, Instagram and Twitter which were the most reportedly used platforms by the female students. In a Malaysian study done (De, et al., 2019) on students, it was seen that 97% of the students had heard of cervical cancer and 68.7% of them were aware of the screening while 75.8% were aware of the cervical cancer vaccination. It was also noted that social media played an important role in the source of knowledge. So, although, the overall level of awareness of ovarian cancer was good (Table 3), the were some lapses in the awareness of ovarian screening and the age women were invited which indicates a need for awareness promotion in these areas and social media has been seen to be a great tool for awareness promotion as stated in the studies conducted above.

Perhaps a reason for these findings could trickle down to a lack of further education about ovarian cancer in today's society. Most university students may know about cancer and perhaps be aware of the various kinds but that seems to be the point where the knowledge and awareness levels cap off.

5.2. Discussion on Level of awareness of ovarian cancer and socio-demographic characteristics.

In respect to the age of the students, most were between the ages of 18-22 (Table 4), the findings indicated that there was no significant difference between the ages of the students and their level of awareness of ovarian cancer ($0<0.05$). Similarly, in (Okunowo & Adaramoye, 2018) a study in Lagos Nigeria where the participants were aged 18-64 with a median age of 35, only 14% displayed good levels of awareness of risk factors and it was seen that age was not a significant factor in the level of awareness of ovarian cancer among the Nigerian women. In contrast, in a study done by Keng et. al in 2015 showed that younger women in Malaysia displayed a higher level of awareness of ovarian cancer when compared to older women, 32% of women aged 20-40 displayed high levels of awareness compared to 91.7% of women aged 41-60 who showed low level ovarian cancer awareness (Keng, et. al., 2015). There are studies with contrasting results, nonetheless in this study there was no difference and perhaps this is due to the fact that the overwhelming majority of the students were within the same age bracket being that they are all current university students.

When the ethnic characteristics and ovarian cancer awareness levels of the students (Table 5) were examined; There was shown to be a statistically significant difference between ethnicity and awareness levels of ovarian cancer. Black/Africans were the largest group of students and may have scored better than other ethnic groups as well. In other studies, it was seen that Nigerian health care workers had very low awareness levels of ovarian cancer (Adeyemi, et. al., 2014), Omani women had low levels of ovarian cancer awareness (Al-Azri et. al., 2018), and Indian women were also shown to have low levels of ovarian cancer awareness (Naik et. al., 2019). Perhaps ethnic background and upbringing play a role in the education of society about ovarian cancer awareness. In a study conducted in England (Niksic, et. al.,

2016), it was noted that the whites had a higher-level awareness of cancer and its symptoms in comparison to minority groups. A study found that help seeking on ovarian cancer was higher in the Black and Asian ethnicities (Radu et al., 2023). This difference in the ethnic group could boil down to the large population of African students in Northern Cyprus, a vast majority of Africans in the country come to study and in African culture there is a stern educational system which prioritizes knowledge of material over professional practice and competence as compared to other cultures.

The marital status of the international students had no significant effect on the level of awareness of ovarian cancer (Table 6). A previous study had a similar result in terms of cancer awareness level and marital status, a study (Gyamfua et. al., 2019) was done in Ghana that showed no significant effect of marital status of level of cancer awareness. This could be linked to the fact that being married does prevent or provide access to information. Most university students are not married so therefore targeting a married population for ovarian cancer awareness improvement may not be the most beneficial sociodemographic to look into. In Elshami et al.'s study (2022), being married was associated with an increase in the likelihood of showing a good ovarian awareness level.

There was a statistically significant difference seen between educational level and ovarian cancer awareness level, bachelor's degree students performed better than postgraduate students. Perhaps this could be due to newer information that undergraduate students have today compared to postgraduate students in their undergraduate days. Also, the fact that $1/5^{th}$ of all the students is enrolled in a health-related course (Table 1) also could have contributed to this as cancer is a health and biological science topic so those who study in these fields have a higher chance of exposure to material or information regarding the topic. However, it was seen (table 8) that there is no statistically significant difference between the students enrolled in a health related department and those enrolled in a non-health related department which shows that being enrolled in a health department made no difference in the level of awareness of ovarian cancer in the international students. In a different study conducted in Nigeria by Adeyemi et. al., there was an established correlation between educational level and ovarian cancer awareness levels, it was seen that individuals with tertiary education did a better job at identifying different ovarian cancer symptoms (Adeyemi, et. al., 2014). In the study of Keng, et.al., it was seen

that women of a high level of education were more aware than women of low levels of education (Keng et. al., 2015). Elshami et al.'s study (2022), post-secondary education was associated with an increase in the likelihood of showing a good ovarian awareness level.

CHAPTER VI

Conclusions and Recommendations

This chapter presents conclusions based on the research findings according to the questions of the research and gives recommendations accordingly.

6.1. Conclusions

- It was found that almost half of female international students (46.5%) are 18-22 years old, most of them are Black/African (36.5%), single (78.9%) and bachelor's degree students (78.8%).
- It found that 1% of the international students had history of ovarian cancer. 39.8% of them had no a close family member that has history of ovarian cancer
- It was determined that the international students take average of 57.46 (min: 13.00 max: 69.00) points from the OCAM. These results show that 57.46 which accounts for 80% of the total awareness score of 72 displays a good awareness of ovarian cancer.
- It was found that the international students had an average of 3.74 (range=1-10) in open warning signs and an average of 8.07 (range=0-10) in the prompted warning signs. This result shows that students have low awareness of open warning signs and high awareness of prompted warning signs.
- It was seen that the students had an average of 1.95 (range:0-12) for open risk factors that indicates a low level of awareness. In addition, they had an average of 48.57 (range=12-60) for prompted risk factors that indicates a high level of awareness.
- It was determined that the students had the highest awareness of breast and cervical screening program, age of ovarian cancer incidence and the least awareness of ovarian screening program and age women invited for ovarian screening.
- It was found that there was a statistically significant difference between ethnic groups and level of ovarian cancer awareness, prompted warning

signs (p= 0.003), prompted risk factors (p= 0.003) and total OCAM knowledge score (p< 0.001).

- It was also found that there was a statistically significant difference between educational level and ovarian cancer awareness prompted warning signs (p=0.048).
- There was no statistically significant difference between age, marital status, department and ovarian cancer awareness.

6.2. Recommendations

6.2.1. Recommendations according to findings

- It is recommended that more awareness programs should be implemented in the universities in North Cyprus particularly in the postgraduate section of the university, seeing as they performed worse than the undergraduate section.
- It is recommended that non-health related departments should still promote health topics to create more awareness as it is relevant to everyone regardless of career or study choice.
- In order to improve personal knowledge of warning signs, risk factors and ovarian screening program, it is recommended to take measures in the campuses to remind and create awareness amongst students like posters and banners on campuses as well as informative articles on school websites.

6.2.2. Recommendations for further research

- It is suggested that more research should be done amongst health care professionals in North Cyprus to determine if there is gap in the ‘knowledge of ovarian cancer, it’s risk factors and signs & symptoms’ amongst the professionals.
- It is recommended to conduct research on ovarian cancer protective factors among international students in Northern Cyprus.
- It is also important for more research and study project to be done on the effectiveness of awareness promotion methods amongst university students to ensure that future implementation of awareness promotion is effective. Upon

future implementation of intervention for awareness promotion, the effectiveness of these methods should then be evaluated to provide further information on the ‘factors affecting awareness levels of university students following cancer awareness promotion programs.

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APPENDICES

Attachment A. Student Information Form and Ovarian Cancer Awareness Measure (OCAM) Questionnaire

Awareness of ovarian cancer risk factors amongst international students in Northern Cyprus

INFORMED CONSENT FORM FOR STUDENTS

You are invited to participate in a research study conducted by [Nurse Emmanuel Akinbode, Asist. Prof. Dr. Dilek Sarpkaya Güder (advisor)], from the NEAR EAST UNIVERSITY [Nursing Faculty]. The objective of this study is to determine the Awareness of ovarian cancer risk factors amongst international students in Northern Cyprus. Your participation is voluntary. Your decision whether or not to participate will not affect your relationship with [school, etc.]. Any information collected during our research will be kept confidential. The completion of the questionnaire will take about 5 minutes. If you have any questions about the study, please feel free to contact [Emmanuel Akinbode e-mail: emyakins@gmail.com, Phone: 05391108987]. [Advisor: Asist.Prof. Dr. Dilek Sarpkaya Güder, email: dilek.sarpkaya@neu.edu.tr]. The study was approved by the ethics committee of NEU* University on 28 June 2022 (IRB No. NEU/06/22). Thank you very much for participation.

I accept to participate in the research *

- ○ Yes
- ○ No

A. Demographic Questions

1. 1. What is your age? *

2. 2. What is your gender? *

Mark only one oval.

- ◯ Male
- ◯ Female
- ◯ Prefer not to say

3. 3. Which of these best describes your ethnic group? *

Mark only one oval.

- ◯ Black/African
- ◯ Asian
- ◯ White
- ◯ Arab/Middle eastern
- ◯ Hispanic
- ◯ Mixed race
- ◯ Other: _____

4. 4. What is your marital status? *

Mark only one oval.

- ◯ Single/never married
- ◯ Married/living with partner

5. 5. Which university are you studying at? *

Mark only one oval.

- ◯ Girne University
- ◯ Near East University
- ◯ European University of Lefke
- ◯ Cyprus International University
- ◯ Eastern Mediterranean University
- ◯ Girne American University
- ◯ Other: _____

6. 6. Department: *

_____

7. 7. Have you, your family or close friends had cancer? *

Mark only one oval per row.

	Yes	No	Don't know	Prefer not to say
You	◯	◯	◯	◯
partner	◯	◯	◯	◯
Close family member	◯	◯	◯	◯
Other family member	◯	◯	◯	◯
Close friend	◯	◯	◯	◯
Other friend	◯	◯	◯	◯

Ovarian Cancer Awareness measure

8. There are several warning signs and symptoms of ovarian cancer. Please name as many as you can think of: *

_____

9. The following may or may not be warning signs for ovarian cancer. We are interested in your opinion:

Mark only one oval per row

	Yes	No	Don't know
Do you think a persistent pain in your abdomen could be a sign of ovarian cancer?			
Do you think a persistent pain in your pelvis could be a sign of ovarian cancer?			
Do you think persistent bloating could be a sign of ovarian cancer?			
Do you think increased abdominal size on most days could be a sign of ovarian cancer?			
Do you think feeling full persistently could be a sign of ovarian cancer?			
Do you think difficulty eating on most days could be a sign of ovarian cancer?			
Do you think passing more urine than usual could be a sign of ovarian cancer?			
Do you think changes in bowel habit could be a sign of ovarian cancer?			
Do you think that extreme fatigue could			

be a sign of ovarian cancer?			
Do you think that back pain could be a sign of ovarian cancer?	◯	◯	◯

10. If you had a symptom that you thought might be a sign of ovarian cancer how soon would you contact your doctor to make an appointment to discuss it? *

11. In the next year, who is most likely to develop ovarian cancer? *

Check all that apply

	Check
A 30 year old woman	☐
A 50 year old woman	☐
A 70 year old woman	☐
Ovarian cancer is unrelated to age	☐

12. What things do you think affect a woman's chance of developing ovarian cancer? *

13. These are some things that can increase a woman's chance of developing ovarian cancer. How much do you agree that each of these can increase the chance of developing ovarian cancer? *

Mark only one oval per row.

	Strongly disagree	Disagree	Not sure	Agree	Strongly Agree
Having a close relative with ovarian cancer	◯	◯	◯	◯	◯
Having a past history of breast cancer	◯	◯	◯	◯	◯
Using HRT (Hormone Replacement Therapy)	◯	◯	◯	◯	◯
Being overweight (BMI over 25)	◯	◯	◯	◯	◯
Having endometriosis	◯	◯	◯	◯	◯
Having ovarian cysts	◯	◯	◯	◯	◯
Using talcum powder in the genital area	◯	◯	◯	◯	◯
Being over 50 years old	◯	◯	◯	◯	◯
Having IVF treatment	◯	◯	◯	◯	◯
Not having children	◯	◯	◯	◯	◯
Having gone through menopause	◯	◯	◯	◯	◯
Being a smoker	◯	◯	◯	◯	◯

14. *

Mark only one oval per row.

	Yes	No	Don't know
Is there an NHS breast cancer screening program?	◯	◯	◯

15. If yes, at what age are women first invited for breast cancer screening? *

_____

16. *

Mark only one oval per row.

	Yes	No	Don't know
Is there an NHS cervical cancer screening program (smear tests)?	◯	◯	◯

17. If yes, at what age are women first invited for cervical cancer screening? *

_____

18. *

Mark only one oval per row.

	Yes	No	Don't know
Is there an NHS bowel cancer screening program?	◯	◯	◯

19. If yes, at what age are people first invited for bowel cancer screening? *

_____

20. *

Mark only one oval per row.

	Yes	No	Don't know
Is there an NHS ovarian cancer screening program?	◯	◯	◯

21. If yes, at what age are women first invited for ovarian screening? *

_____

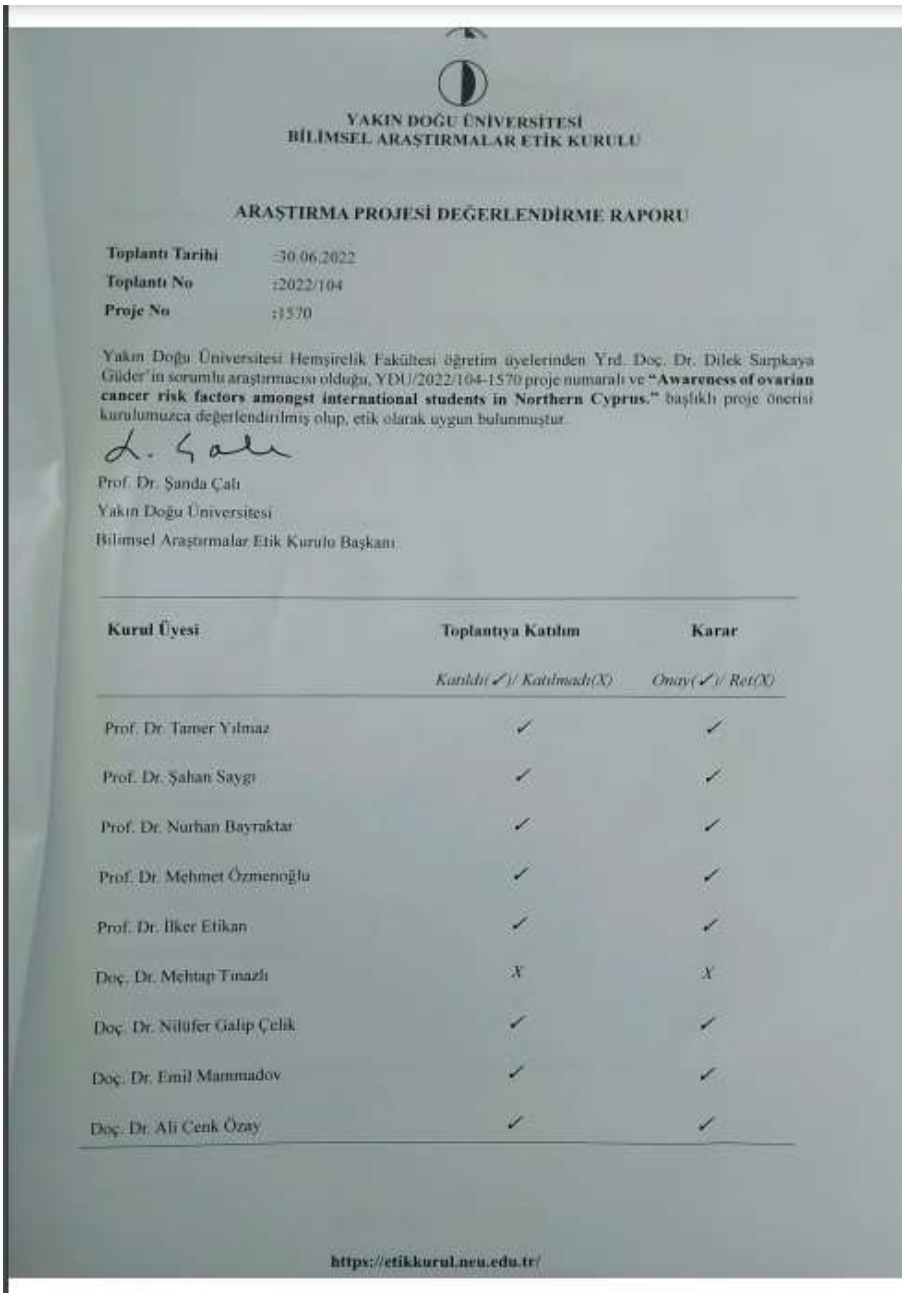
22. How confident are you that you would notice an ovarian cancer symptom? *

Mark only one oval per row.

	Not confident at all	Not very confident	Fairly confident	Very confident
I am	◯	◯	◯	◯

Attachment B. Ethics Approval Letter

Following the jury's opinions, the word risk factors was removed from the thesis title.



YAKIN DOĞU ÜNİVERSİTESİ
BİLİMSEL ARAŞTIRMALAR ETİK KURULU

ARAŞTIRMA PROJESİ DEĞERLENDİRME RAPORU

Toplantı Tarihi :30.06.2022
Toplantı No :2022/104
Proje No :1570

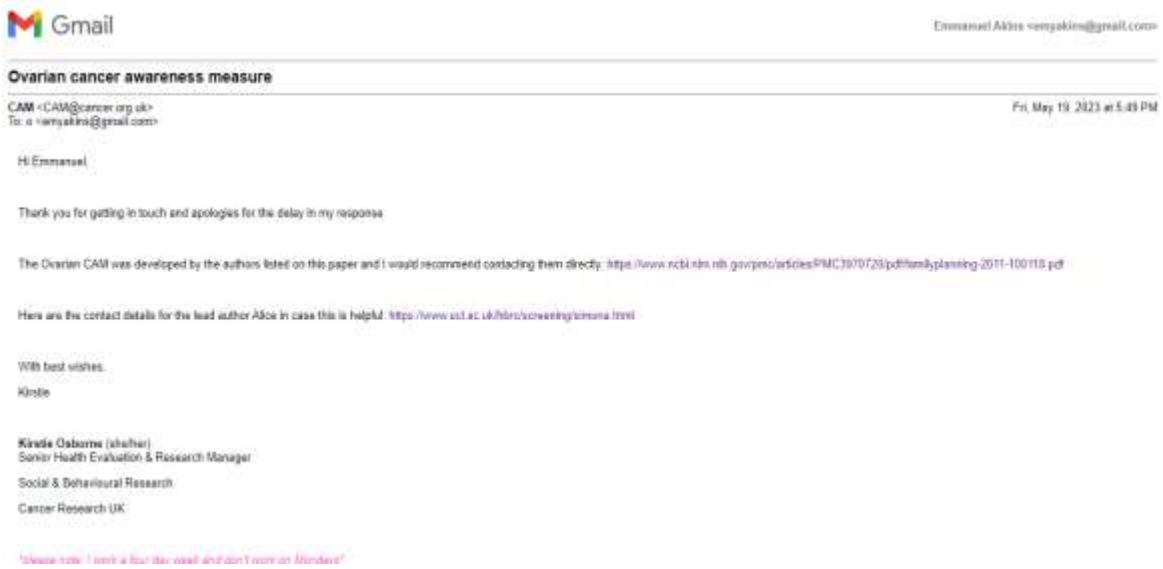
Yakın Doğu Üniversitesi Hemşirelik Fakültesi öğretim üyelerinden Yrd. Doç. Dr. Dilek Sarpkaya Güder'in sorumlu araştırmacısı olduğu, YDU/2022/104-1570 proje numaralı ve **"Awareness of ovarian cancer risk factors amongst international students in Northern Cyprus."** başlıklı proje önerisi kurulumuzca değerlendirilmiş olup, etik olarak uygun bulunmuştur.

Prof. Dr. Şanda Çalı
Yakın Doğu Üniversitesi
Bilimsel Araştırmalar Etik Kurulu Başkanı

Kurul Üyesi	Toplantıya Katılım	Karar
	Katıldı(✓)/ Katılmadı(X)	*Onay(✓)/ Red(X)*
Prof. Dr. Tamer Yılmaz	✓	✓
Prof. Dr. Şahan Saygı	✓	✓
Prof. Dr. Nurhan Bayraktar	✓	✓
Prof. Dr. Mehmet Özmenoğlu	✓	✓
Prof. Dr. İlker Etikan	✓	✓
Doç. Dr. Mehtap Tınazlı	X	X
Doç. Dr. Nilüfer Galip Çelik	✓	✓
Doç. Dr. Emil Mammadov	✓	✓
Doç. Dr. Ali Cenk Özay	✓	✓

https://etikkurul.neu.edu.tr/

Attachment C. Scale Owner's Cancer Research UK email.



Gmail

Emmanuel Akins <emyakins@gmail.com>

Ovarian cancer awareness measure

CAM <CAM@cancer.org.uk>
To: e <emyakins@gmail.com>

Fri, May 19, 2023 at 5:49 PM

Hi Emmanuel

Thank you for getting in touch and apologies for the delay in my response

The Ovarian CAM was developed by the authors listed on this paper and I would recommend contacting them directly: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3970726/pdf/familyplanning-2011-100118.pdf

Here are the contact details for the lead author Alice in case this is helpful: https://www.ucl.ac.uk/hbrc/screening/simona.html

With best wishes

Kirstie

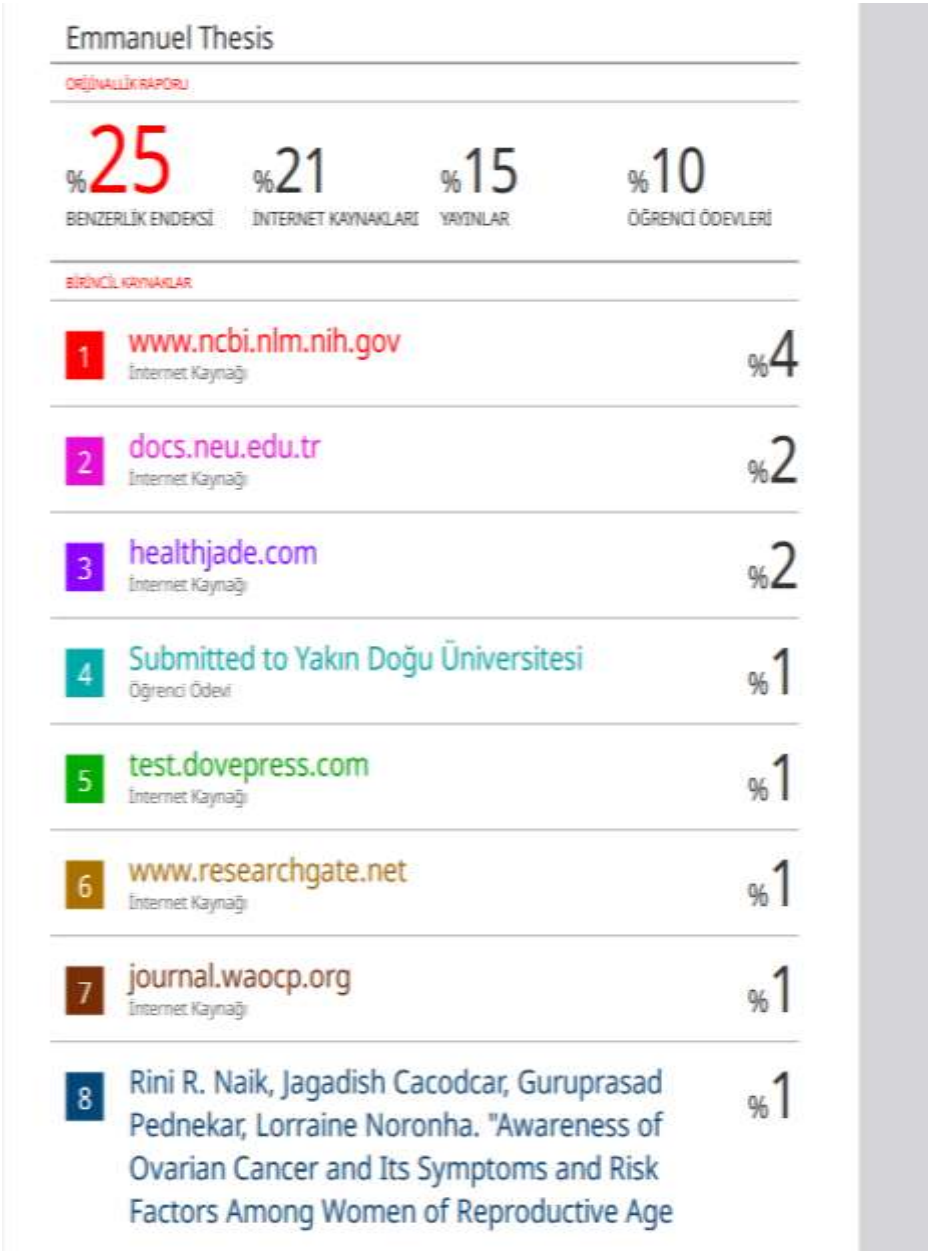
Kirstie Osborne (she/her)
Senior Health Evaluation & Research Manager

Social & Behavioural Research

Cancer Research UK

"please note, I work a four day week and don't work on Mondays"

Attachment D. Turnitin



Emmanuel Thesis

ORİJİNALLİK RAPORU

%25	%21	%15	%10
BENZERLİK ENDEKSİ	İNTERNET KAYNAKLARI	YAYINLAR	ÖĞRENCİ ÖDEVLERİ

BİRİNCİL KAYNAKLAR

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2	docs.neu.edu.tr İnternet Kaynağı	%2
3	healthjade.com İnternet Kaynağı	%2
4	Submitted to Yakın Doğu Üniversitesi Öğrenci Ödevi	%1
5	test.dovepress.com İnternet Kaynağı	%1
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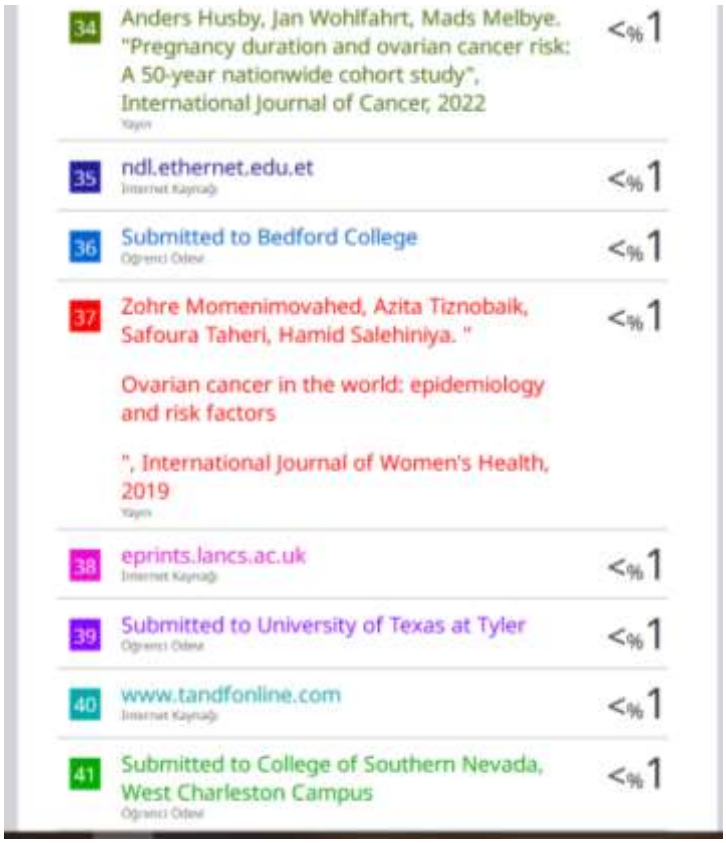

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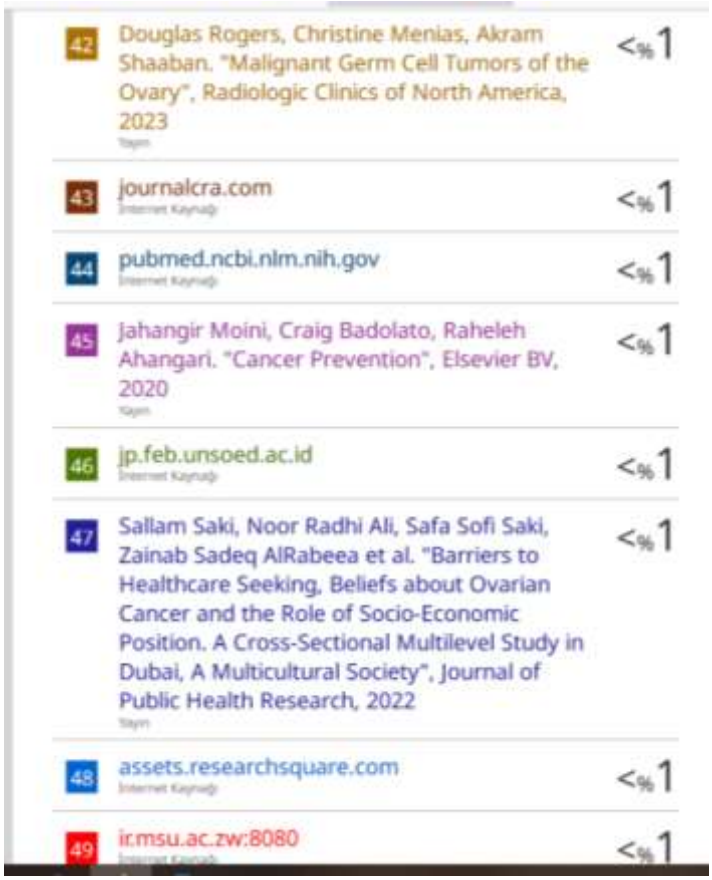

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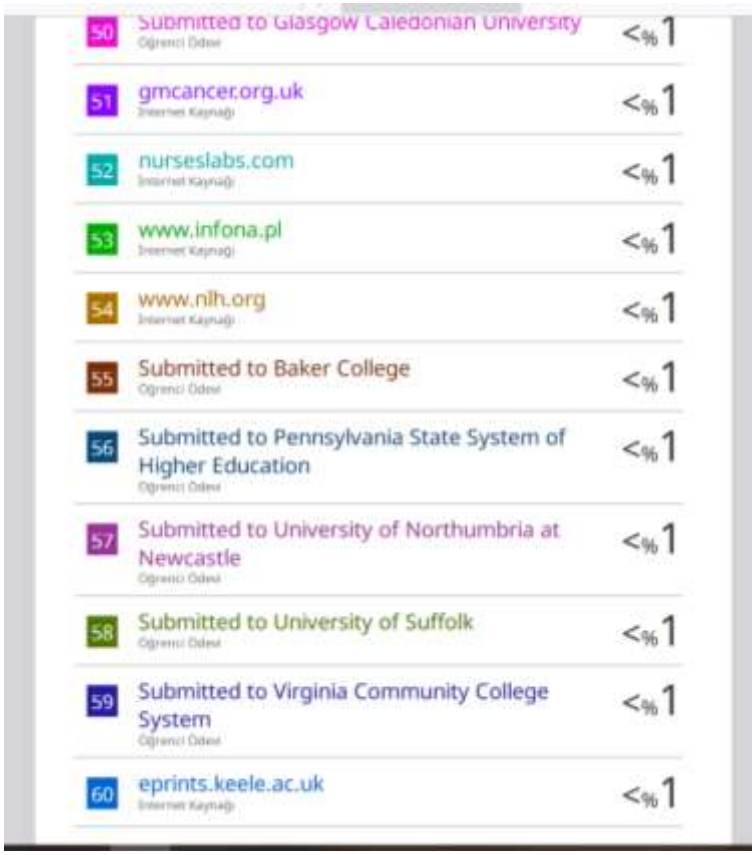

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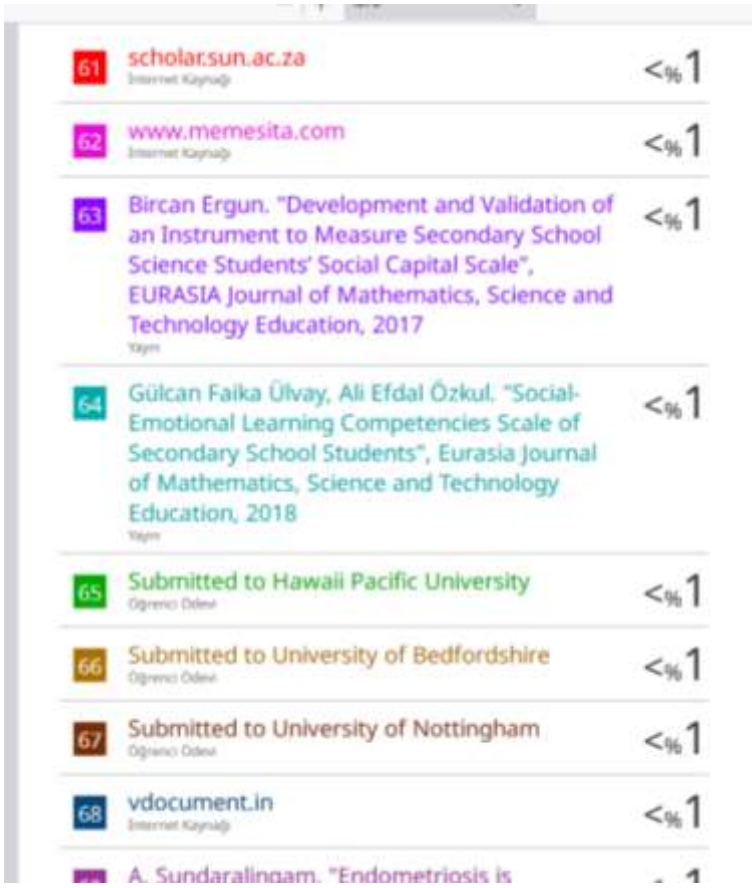

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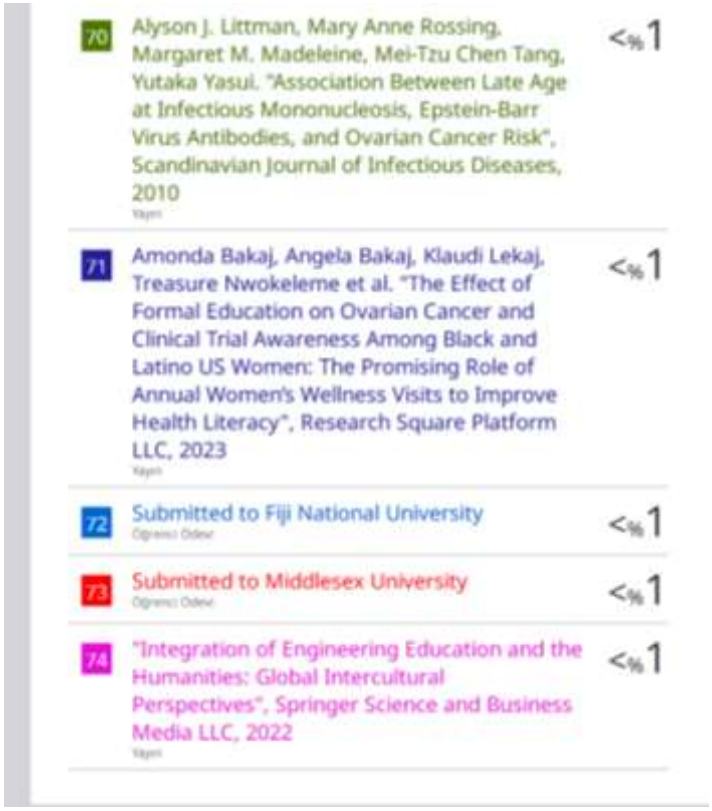

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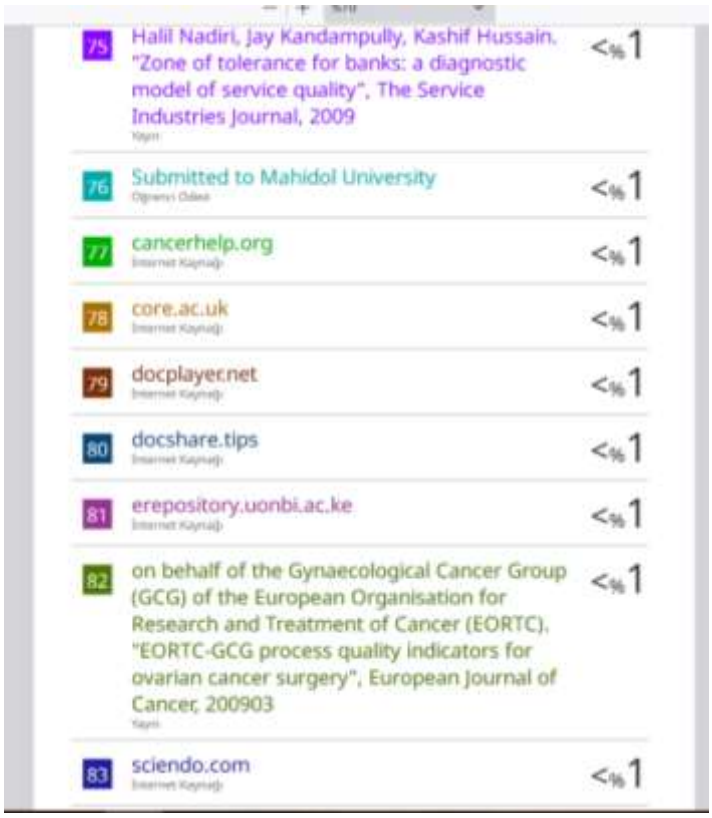

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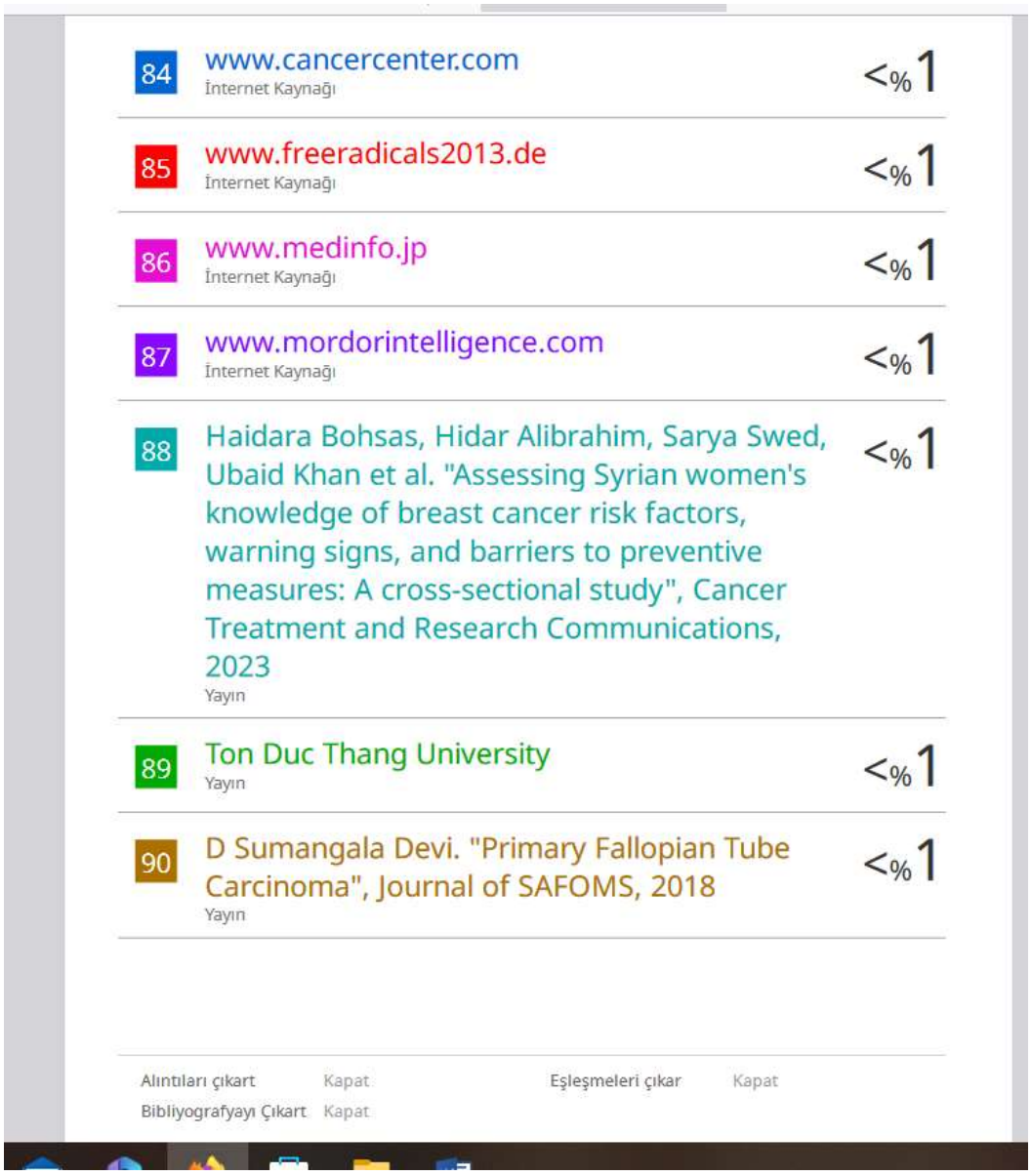

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