Psychosocial perspective of patients with gynecological cancer towards medical services during the coronavirus disease pandemic at RSUD Dr. Soetomo, Surabaya, Indonesia

Nanda Bagus Pratiktio
Department of Obstetrics and Gynecology, Dr. Soetomo General Academic Hospital, Medical Faculty – Universitas Airlangga, Surabaya, Indonesia

Brahmana Askandar Tjokroprawiro
Department of Obstetrics and Gynecology, Dr. Soetomo General Academic Hospital, Medical Faculty – Universitas Airlangga, Surabaya, Indonesia
*Corresponding author email: brahmanaaskandar@fk.unair.ac.id

Budi Utomo
Department of Public Health and Preventive Medicine, Medical Faculty – Universitas Airlangga, Surabaya, Indonesia

Nalini Muhdi
Department of Psychiatry, Medical Faculty – Universitas Airlangga, Surabaya, East Java, Indonesia

Abstract---This study aimed to determine the attitudes, anxieties, and expectations of patients with gynecological cancer towards treatment and services during the pandemic. This observational, descriptive, cross-sectional study included 326 participants (246 outpatients and 80 oncology inpatients) at RSUD Dr. Soetomo, Surabaya, Indonesia from August 30, 2021 to October 2, 2021. A COVID-19-related questionnaire and the Hospital Anxiety and Depression Scale questionnaire were administered. The patients (median age, 51 years; range: 13–80 years) were diagnosed with cervical (51.2%), ovarian (26.1%), and endometrial cancers (9.2%). Cervical and ovarian cancers most frequently occurred at ages 36–55 years compared to endometrial cancer (32.2% versus 15.6%). Overall, 249 patients (76.4%) were concerned/worried about the pandemic affecting cancer medical services, 213 (65.3%) were worried about not being able to visit an oncologist on schedule during the pandemic, and 276 (84.7%) were worried about disease progression if treatment/routine

evaluation was canceled/postponed. In total, 197 patients (60.4%) stated that there was no delay in service/treatment during the pandemic. Thirty-nine patients (12%) had moderate anxiety, 9 (2.8%) had severe anxiety, 23 (7.1%) had moderate depression, and 0 had major depression. Two hundred patients (61.3%) wished to have a telemedicine consultation with a doctor; 60.4% of the patients did not receive vaccination. In summary, patients' concern about their cancer because of treatment and medical services disruption changed during the pandemic.

Keywords---coronavirus disease, patient perspective, gynecological cancer.

Introduction

At the end of 2019, the novel coronavirus caused pneumonia in Wuhan, Hubei, China. The rapid spread of the virus resulted in an epidemic followed by a global pandemic(Kenneth McIntosh 2021). COVID-19 causes mild to severe respiratory problems, high fever, severe inflammation, cough, and organ dysfunction until death (Dhama Kuldeep 2020). Global data until July 21, 2021 showed that the pandemic spread to 223 countries with 190,860,860 confirmed cases of COVID-19 and 4,101,414 deaths. The number of confirmed COVID-19 cases in Indonesia was 2,950,058 with a mortality of 76,200 cases (WHO 2021). The COVID-19 pandemic continues to cause high mortality and morbidity worldwide, especially in elderly patients, people with chronic diseases, immunocompromised patients, and patients with cancer(Sorouri et al. 2020).

Global data on cancer incidence in women in 2020 showed that the incidences of breast, colorectal, lung, cervical, uterine, and ovarian cancers were 47.8%, 16.2%, 14.6%, 13.3%, 8.7%, and 6.6%, respectively ((IARC)-WHO 2021). National data from the Indonesian Society of Gynecologic Oncology (INASGO) showed that the incidences of gynecologic cancers in Indonesia in 2016–2020 were as follows: 8,847 cases, cervical cancer; 1,807 cases, ovarian cancer; and 1,109 cases, endometrial cancer(Indonesian Society of Gynecologic Oncology (INASGO) 2021). Cancer causes systemic immunosuppressive conditions due to the disease course, antineoplastic therapy, and the use of supportive drugs (Jacome et al. 2021). Cancer is also associated with myeloid suppression, inducing immunosuppressive conditions, and promoting disease progression by inhibiting antitumor immunity (Sica and Massarotti 2017).

The pandemic has major implications for cancer services related to the risk of SARS-CoV-2 infection including discontinuation or delay of cancer diagnostics and follow-up and/or treatment (Hintermayer et al. 2020). A retrospective study of patients with cancer in Wuhan, China found that 53% of patients had severe symptoms (requiring intensive care, mechanical ventilation, or death), with a mortality rate of 28.6% (Zhang et al. 2020). The urgency of the situation requires dynamic decisions across all levels, with little or no time to incorporate or even consider patients' perspectives. However, in Indonesia, no research has been conducted regarding the impact of the pandemic on medical health services,

either from the patient's perspective or from the healthcare provider's viewpoint. Therefore, this study aimed to determine how women with gynecological cancers perceived modifications of care and the impact of the pandemic on their personal cancer journey.

Methods

Ethics statements

Ethical committee approval for the study was obtained from Dr. Soetomo RSUD, Surabaya, Indonesia (0235/KEPK/VIII/2021). The survey was completely by participants anonymously, and no personal identification information was requested or recorded.

Study design and population

This cross-sectional survey study was conducted at RSUD Dr. Soetomo from August 30, 2021 to October 2, 2021. Consecutive sampling of patients was performed. All patients visiting the outpatient and inpatient gyneco-oncologic clinic with any stage, histology, and type of gynecological cancer were eligible to participate as long as they were still under active treatment or surveillance. Depending on the stage of their treatment journey, patients were divided into four categories: type 1, patients with a diagnosis of primary or recurrent cancer scheduled for surgery; type 2, patients receiving chemotherapy for primary or recurrent disease (neoadjuvant chemotherapy and maintenance-targeted treatment were included); type 3, patients receiving radiotherapy for primary or recurrent disease (neoadjuvant and maintenance-targeted treatment were included); type 4, patients undergoing routine oncologic follow-up after surgery, chemotherapy, or radiotherapy; and type 5, patients receiving palliative treatment. Since we used anxiety and depression scales, we excluded all patients who had a previous diagnosis of a psychiatric disorder, unrelated to their cancer diagnosis, that required medication.

Survey development

The survey consisted of three parts: medical records and treatment data (Section A), two COVID-19-related questionnaires (Sections B, C, and D), and the well-established and validated 14-item Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snalth 1983; Bjelland et al. 2002). All parts were developed by the investigator at RSUD Dr. Soetomo. A copy of the survey is included in the supplement of this article. A validated HADS form is available in 115 languages in Indonesia, and is, therefore, suitable for researchers internationally (Rudy 2015). The HADS is a self-report rating scale of 14 items rated on a 4-point Likert scale (range, 0–3). It was designed to measure anxiety and depression (seven items for each subscale). Some questions determine anxiety, whereas others determine depression. The HADS questionnaire has a maximum score of 21. Scores ≥11 on either subscale are considered to indicate substantial psychological morbidity (abnormal), while scores 8–10 represents borderline and 0–7 normal (healthy).

Statistical analysis

This study's sample size was determined using the formula proposed by Slovin with a 95% confidence level, e = 5%. The total population was taken from Gultekin et al.'s study (2021) with 1388 samples (Gultekin et al. 2021). Age is a well-known significant predictor of poor prognosis in COVID-19, and it is a strong risk factor among elderly patients with COVID-19 older than 65 years of age (Zheng et al. 2020; Liu et al. 2020; Hwang et al. 2020). Therefore, we adjusted all variables for age. Questionnaires with two or more missing or invalid items were excluded. Multivariate logistic regression analysis was used to determine predictors of "having severe anxiety," "having severe depression," and "expressing more fear due to COVID-19 than due to cancer." Dependent variables were coded as categorical variables (1 and 2). The independent variables in the regression model were established as ordinal variables. All Likert-type responses were categorized as 1 (disagree) or 2 (agree). For all variables in the equation, odds ratios (ORs) and lower and upper levels of 95% confidence intervals (CIs) were calculated, and the ORs were assumed to be statistically meaningful at p-values <0.05. Hard-copy survey data were entered into and evaluated using Excel (Microsoft Corp., Redmond, WA) or SPSS version 25.0 (IBM Corp., Armonk, NY).

Results

Patient demographics

Of 1008 patients who visited the outpatient clinic, 173 patients were hospitalized in the inpatient gyneco-oncologic unit; we excluded all 93 new patients. Ultimately, 326 patients were included (246 patients from the outpatient clinic and 80 patients from the inpatient gyneco-oncologic unit). We did not collect data on the number of patients who refused the survey. Demographic characteristics of the study population are presented in Table 1. Patients' median age was 51 years (range: 13–80 years). Overall, 224 (68,7%) women were of productive age (18–55 years), and only 28 (8.6%) belonged to the elderly group (65 years of age or older).

Table 1
Demographics and clinical characteristics of patients at RSUD Dr. Soetomo, Surabaya, Indonesia

Age (years)	n	(%)	Treatment	n	(%)	Comorbidity	n	(%)
0–17	1	0.3	Type 1	38	11.7	Diabetes	14	4.3
18–35	40	12.3	Type 2	117	35.9	Heart disease	4	1.2
36–55	184	56.4	Type 3	24	7.4	Kidney disease	13	4.0
56–64	73	22.4	Type 4	112	34.4	Liver disease	2	0.6
≥65	28	8.6	Type 5	5	1.5	Pulmonary disease	3	0.9
Diagnosis			Types 1, 2	1	0.3	Hypertension	22	6.7
Ovarian cancer	85	26.1	Types 2, 3	15	4.6	Stroke	3	0.9
Uterine cancer	30	9.2	Types 2, 4	1	0.3	None	265	81.3
Cervical cancer	167	51.2	Types 3, 4	6	1.8	Vaccine		

GTN	16	4.9	Types 3, 5	1	0.3	First dose	38	11.7
Vaginal cancer	2	0.6	Types 4, 5	6	1.8	Second dose	62	19.0
Vulva cancer	1	0.3				Not yet	197	60.4
Ovarian tumor	21	6.4	History of COVID-19			Afraid	29	8.9
Leiomyosarcoma	3	0.9	Yes	28	8.6			
Tubal Vulva cancer	1	0.3	No	298	91.4			
HADS Anxiety Score Mean score: 5.85			HADS Depression Score Mean score: 4.94					
0–7	226	69.3	0–7	243	74.5			
8–10	52	16.0	8–10	60	18.4			
11–15	39	12.0	11–15	23	7.1			
16–21	9	2.8	16–21	0	0.0			

Type 1, patients with a diagnosis of primary or recurrent cancer scheduled for surgery; type 2, patients receiving chemotherapy for primary or recurrent disease (neoadjuvant chemotherapy and maintenance-targeted treatment was included); type 3, patients receiving radiotherapy for primary or recurrent disease (neoadjuvant and maintenance-targeted treatment were included); type 4, patients undergoing routine oncologic follow-up after surgery, chemotherapy, or radiotherapy; type 5, patients receiving palliative treatment; GTN, gestational trophoblastic neoplasia; HADS, Hospital Anxiety and Depression Scale; COVID-19, coronavirus disease. Regarding the stage of patients' treatment journey, 134 (41.1%) were receiving chemotherapy for primary or recurrent disease (Type 2); 125 (38.3%) were undergoing follow-up after surgery, chemotherapy, or radiotherapy (Type 4), 39 (11.9%) were preoperative (Type 1), and 46 (14.1%) were receiving radiotherapy for primary or recurrent disease (Type 3). Only 61 (18.7%) patients had comorbidities.

Table 2
COVID-19-related perspective, attitude, and fears of patients with gynecological cancers during the COVID-19 pandemic

Question/Statement	Agree % (N)	Disagree % (N)
I am more afraid of COVID-19 than my cancer	44.8% (146)	55.2% (180)
I think patients with cancer have a higher risk of getting COVID-19 infection than healthy people	55.2% (180)	44.8% (146)
I think patients with cancer have a higher risk of dying when infected by COVID-19 than healthy people	58.9% (192)	41.1% (134)
I am worried that I will not be able to visit my oncologist on schedule	65.3% (213)	34.7% (113)
I think chemotherapy/radiotherapy suppresses the immune system (immunity) and increases the risk of being infected with COVID-19	26.1% (85)	73.9% (241)
I am worried about the progression of my disease if my treatment (chemotherapy/radiation/surgery)/routine evaluation is canceled/delayed	84.7% (276)	15.3% (50)

I am afraid of being infected with COVID-19 at the hospital when receiving treatment/following up at the hospital	46.6% (152)	53.4% (174)
I do not worry about COVID-19 infection because cancer can also cause me to die	57.4% (187)	42.6% (139)
I can receive contact and examinations restrictions carried out by doctors because of the COVID-19 pandemic	85.9% (280)	14.1% (46)

COVID-19, coronavirus disease.

Coronavirus disease-related analysis and patients' views

More than half of the patients (n = 180, 55.2%) thought that they were at higher risk of COVID-19 infection than healthy people, and 192 (58.9%) thought they were at higher risk of death when infected by COVID-19 than healthy people. Most patients (n = 276; 84.7%) were concerned that their cancer would progress because of a delay or cancellation of their treatment or oncologic follow-up. Most patients (n = 280; 85.9%) received contact and examination restrictions carried out by doctors during the COVID-19 pandemic, and more than half (n 187; 57.4%) did not worry about COVID-19 infection because cancer can also cause death (Table 2).

Table 3
Risk factors for more "being more afraid of COVID than of cancer" in multivariate logistic regression analysis

Variable	Odds ratio	95% Confidence Interval		p-value
		Lower	Upper	
Age (≥65 vs. <65 years)	1.723	0.788	3.769	0.173
Comorbidity (yes vs. no)	0.760	0.431	1.341	0.344
Vaccination (yes vs. no)	0.456	0.288	0.723	0.001
Cervical cancer (yes vs. no)	0.968	0.625	1.498	0.884
Delayed treatment (yes vs. no)	0.456	0.288	0.723	0.001
I am afraid of being infected with COVID-19 at the hospital when receiving treatment/following up at the hospital	1.913	1.229	2.978	0.004

COVID-19, coronavirus disease; vs., versus.

In multivariate regression analysis, history of vaccination for COVID-19 (OR: 0.456; 95% CI: 0.288–0.723) and delayed treatment (OR: 0.456; 95% CI: 0.288–0,723) were significantly less likely the protective factors for "being more afraid of COVID-19 than of cancer." Afraid of being infected with COVID-19 from the hospital when receiving treatment/follow-up at the hospital (OR: 1.913; 95% CI: 1.229–2.978) was the only risk factor for "being more afraid of COVID-19 than of cancer," whereas other factors such as advanced age of 65 years or older, having additional comorbidities, and having cervical cancer did not have any significant effect on patients' fear of the pandemic over cancer. Regarding the impact of the COVID-19 pandemic on patient care, 56.4% (n = 184) of patients stated that their care continued as previously planned despite the pandemic. More than half of

patient (n = 277, 85%) underwent COVID-19 screening/testing before or during their treatment, 197 (60.4%) patients reported that their treatment or follow-up was on schedule during the pandemic, only 15 (4.6%) reported that they did not know whether their treatment was postponed or delayed. More than half of the patients (n = 201, 61.7%) stated that the government-related local isolation/lockdown did not affect their cancer treatment, and 231 (70.8%) patients came from outside of Surabaya. Overall, 125 (38.3%) of patients reported that they did not know that RSUD Dr. Sutomo, Surabaya made some modifications to cancer medical services during the pandemic. The majority of the patients (n = 200, 61.3%) hoped for treatment using telemedicine.

Hospital Anxiety and Depression Scale Scores

The mean HADS-Anxiety (HADS-A) score was 5.85, and the mean HADS-Depression (HADS-D) score was 4.94. Detailed HADS-A and HADS-D scores are presented in Table 1. Two hundred twenty-two (69.3%) women had a normal HADS-A score, 52 (16.0%) had borderline, and 48 (14,8%) had abnormal, whereas the equivalent HADS-D scores were 243 (74.5%), 60 (18.4%), and 23 (7.1%), respectively. In multivariate logistic regression analysis, we identified advanced age of 65 years or older (OR: 2.58; 95% CI: 1.065–6.251) and HADS-D score ≥11 (OR: 5.364; 95% CI: 2.199–13.086) as being associated with a significantly high risk for an abnormal HADS-A score (i.e., 11–21). Concern about not being able to visit the oncology doctor during the COVID-19 pandemic, type of treatment or cancer, additional comorbidities, concern about having a higher risk of death when infected by COVID-19 than healthy people, being more afraid of COVID-19 than of cancer, and being concerned about the progression of cancer if treatment/follow-up were cancelled or postponed did not have any significant effect on patients' anxiety levels (Table 4).

Table 4
Risk factors for an abnormal HADS-A score (i.e., 11–21) in multivariate logistic regression analysis

Risk Factor	Odds ratio	95% Confidence Interval		p-value
		Lower	Upper	
Age (≥65 vs. <65 years)	2.580	1.065	6.251	0.036
HADS-D score (≥11 vs. <11)	5.364	2.199	13.086	<0.001
Comorbidity (yes vs. no)	1.171	0.548	2.548	0.683
Vaccination (yes vs. no)	1.584	0.772	3.250	0.210
Cervical cancer (yes vs. no)	0.858	0.464	1.587	0.626
Concern about having a higher risk of getting COVID-19 infection than healthy people (yes vs. no)	0.782	0.423	1.444	0.432
Concern about having a higher risk of dying than healthy people when infected by COVID-19 (yes vs. no)	1.077	0.576	2.013	0.817
I am worried that I will not be able to visit my oncologist on schedule (yes vs. no)	0.780	0.415	1.463	0.439

| I am worried about the progression of my disease if my treatment (chemotherapy/radiation/surgery)/routine evaluation is canceled or postponed (yes vs. no) | 0.890 | 0.389 | 2.035 | 0.782 |

HADS-A, Hospital Anxiety and Depression Scale-Anxiety; HADS-D, Hospital Anxiety and Depression Scale-Depression; vs., versus.

For patients presenting with abnormal HADS-D scores (i.e., ≥11), multivariate analysis did not identify age, comorbidities, vaccination status, cervical cancer diagnosis, concern about having a high risk of getting infected and dying when infected by COVID-19, concern about not being able to visit the oncology doctor during the COVID-19 pandemic, and being afraid more of COVID-19 than of cancer as independent prognostic factors. However, abnormal HADS-A scores (OR: 5.364; 95% CI: 2.19–13.08) were associated with a significantly higher risk for abnormal HADS-D scores (i.e., 11–21). Patients concerned about cancer progression if treatment/follow-up was cancelled or postponed were significantly less likely to show high depression scores (OR: 0.378; 95% CI: 0.147–0.973) (Table 5).

Table 5
Risk factors for an abnormal (i.e. 11–21) HADS-D score in multivariate logistic regression analysis

Risk Factor		95% Confidence Interval		
	Odds ratio	Lower	Upper	p-value
Age (≥65 vs. <65)	0.465	0.060	3.583	0.462
HADS-A score (≥11 vs. <11)	5.364	2.199	13.086	<0.001
Comorbidity (yes vs. no)	0.909	0.298	2.774	0.866
Vaccination (yes vs. no)	1.012	0.403	2.543	0.979
Cervical cancer (yes vs. no)	0.647	0.272	1.540	0.325
Concern about having a higher risk of getting COVID-19 infection than healthy people (yes vs. no)	0.909	0.298	2.774	0.572
Concern about having a higher risk of dying when infected by COVID-19 than healthy people (yes vs. no)	1.092	0.459	2.602	0.842
I an worried that I will not be able to visit my oncologist on schedule (yes vs. no)	1.230	0.491	3.083	0.659
I am worried about the progression of my disease if my treatment (chemotherapy/radiation/surgery)/routine evaluation is canceled or postponed (yes vs. no)	0.378	0.147	0.973	0.044

HADS-A, Hospital Anxiety and Depression Scale-Anxiety; HADS-D, Hospital Anxiety and Depression Scale-Depression; vs., versus.

Discussion

Our surveys found that, as expected, even though patients were diagnosed with cancer, a major risk factor for developing COVID-19, less than 50% of them were actually more afraid of COVID-19 than of their cancer condition. Although patients were aware of their increased risk of developing COVID-19, their main concern was the potential to develop progressive disease because of treatment disruption during the pandemic. Therefore, more than 50% of patients attended their planned treatment appointments as originally scheduled. Based on the distribution of cases by age, global data from the IARC (2021) showed that the highest incidence of cervical cancer is 35.7% in women aged 55 years or older, with an incidence of ovarian cancer of 24% ((IARC)-WHO 2021). Our study showed no difference in the incidence rate with the national data (32.2% and 15.6%, respectively)[6]. The difference in the incidence of our national data and this study's findings with global data shows that the incidence of gynecological cancer in developed countries is higher in women aged >55 years, while in our country and among the patients at RSUD Dr. Soetomo, Surabaya, the incidence is higher in women of productive age (36–55 years).

Many studies have discussed the safety of the COVID-19 vaccine in patients with cancer, including those undergoing therapy (Cavanna et al. 2021). Studies in Germany on patients with breast and gynecological cancers showed that patients with cancer who received the Moderna, Pfizer, and Astra Zeneca vaccines had local and mild symptoms that disappeared >48 hours after injection, especially in patients aged >55 years (Forster et al. 2021). The present study's results showed that 60.4% of patients had not received a vaccine, most patients were not afraid of vaccination. This suggests that many patients with gynecological cancer might not have had the opportunity to be vaccinated. Therefore, more efforts are needed to ensure that patients with cancer can receive vaccinations immediately, considering that they have a higher risk of morbidity and mortality when infected with COVID-19.

Our study found that more than half of the patients were worried about the pandemic and their cancer. Most patients were more afraid of their cancer than of COVID-19; patients with cancer had a higher risk of contracting COVID-19 infection and a higher risk of death than healthy people. These findings were in accordance with those of a previous study in which 73.2% of patients agreed that patients with cancer had a higher risk of being infected with COVID-19 than healthy people, and 58.8% of patients were more afraid of their cancer than of COVID-19 (Gultekin et al. 2021). Overall, 57.4% of patients in our study stated that both the COVID-19 infection and cancer could cause their death, which is in accordance with findings of another study in which the cancer diagnosis made patients more steadfast and unafraid of COVID-19 (Hintermayer et al. 2020).

The COVID-19 pandemic has caused substantial pressure on health services, particularly in the care of women with cancer (O'Neill and El-Ghobashy 2021). The present study's results showed that most patients worried about the pandemic affecting their cancer care and disease progression if their treatment (chemotherapy/radiation/surgery)/routine evaluation was canceled/postponed. Gultekin et al. (2021) also reported that patients worried about their disease

progression if their treatment or follow-up was delayed (Gultekin et al. 2021). An article stated that restrictions/lockdowns disrupt patient access to health facilities, which causes delays in treatment (Bhandoria et al. 2020). In this study, 61.7% of patients stated that there was no effect of government restrictions on accessing and delaying their treatment. The majority of our patients came from outside of the city, and 59.4% stated that the restrictive policies implemented by the government did not affect the decline/process of cancer treatment. Some patients stated that this was because of their enthusiasm. It sends a clear message to the healthcare community that even in times of crisis, patients are more concerned about their individual health needs, and our responsibility as healthcare professionals are not to fail despite all challenges.

In addition, our study found that the majority of patients were not anxious. Only five respondents (1.5%) with suspected malignant ovarian tumors who had delayed surgery had moderate levels of anxiety. This finding was different from another study in that <50% of the patients were not anxious due to COVID-19. Our multivariate analysis of risk factors that increase anxiety found that advanced age of 65 years or older and a HADS-D score >11 were risk factors of anxiety disorders; in another study (Gultekin et al. 2021), a HADS-D score >11 increased the risk of anxiety disorders by 11.98 times. Concern about not being able to visit the oncology doctor during the COVID-19 pandemic and being concerned about the progression of cancer if treatment/follow-up was cancelled or postponed did not have any significant effect on patients' anxiety levels in our study; however, Gultekin et al. found that these factors increased the risk of anxiety disorders by 1.52 and 1.94, respectively (Gultekin et al. 2021).

The majority of our patients were not depressed (normal HADS-D score), and there was no significant difference in depression based on cancer diagnosis and therapy. This finding indicates that differences in diagnosis, therapy, and delayed/postponed service did not significantly affect the level of anxiety and depression in patients undergoing treatment in our study during the COVID-19 pandemic. Multivariate analysis showed that patients with a HADS-A score >11 had 5.36 times risk of depression. Gultekin et al.'s study (2021) found that 51.2% of patients had depression; a HADS-A anxiety score >11 increased depression (12.02 times), whereas comorbidities (1.52 times) and concern about not being able to visit the oncology doctor had less of an effect on depression (0.65 times) (Gultekin et al. 2021). Most patients expected that surgery, chemotherapy, or radiotherapy could still be provided on schedule during the pandemic and used telemedicine to decrease hospital visits. Therefore, we must categorize diseases that can be followed up using telemedicine to prevent negative effects on medical services in the future.

Conclusions

Patients' concern about their cancer because of treatment and medical services disruption changed during the pandemic. During the COVID-19 pandemic, most patients with gynecological cancer were not anxious and depressed (normal). However, an advanced age of 65 years or older and a HADS-D score ≥11 were associated with a significantly higher risk of anxiety, whereas a HADS-A score ≥11 was associated with depression.

Acknowledgments

Competing Interests

Financial Support

Data Availability

Due to the sensitive nature of the questions asked in this study, survey respondents were assured raw data would remain confidential and would not be shared.

References

(IARC)-WHO, International Agency for Research on Cancer. 2021. "Estimated Age-Standardized Incidence Rates (World) in 2020, Worldwide, Females, All Ages." 2021. https://gco.iarc.fr/today/online-analysis.

Bhandoria, Geetu, T. S. Shylasree, Prashant Bhandarkar, Vijay Ahuja, Amita Maheshwari, Rupinder Sekhon, and S. P. Somashekhar. 2020. "Impact of COVID-19 Pandemic on Gynecological Oncology Care: Glimpse into Association of Gynecological Oncologists of India (AGOI) Perspective." Indian Journal of Gynecologic Oncology 18 (3). https://doi.org/10.1007/s40944-020-00421-8.

Bjelland, Ingvar, Alv A. Dahl, Tone Tangen Haug, and Dag Neckelmann. 2002. "The Validity of the Hospital Anxiety and Depression Scale: An Updated Literature Review." Journal of Psychosomatic Research 52 (2): 69–77. https://doi.org/10.1016/S0022-3999(01)00296-3.

Cavanna, Luigi, Chiara Citterio, Claudia Biasini, Serena Madaro, Nicoletta Bacchetta, Anna Lis, Gabriele Cremona, et al. 2021. "COVID-19 Vaccines in Adult Cancer Patients with Solid Tumours Undergoing Active Treatment: Seropositivity and Safety. A Prospective Observational Study in Italy." European Journal of Cancer 157: 441–49. https://doi.org/10.1016/j.ejca.2021.08.035.

Dhama Kuldeep. 2020. "Coronavirus Disease 2019–COVID-19." Clinical Microbiology Reviews 33 (4): 1–48. https://doi.org/https://doi.org/10.1128/CMR.00028-20.

Forster, Marie, Rachel Wuerstlein, Alexander Koenig, Niklas Amann, Susanne Beyer, Till Kaltofen, Tom Degenhardt, et al. 2021. "COVID-19 Vaccination in Patients with Breast Cancer and Gynecological Malignancies: A German Perspective." Elsevier. https://doi.org/10.1016/j.breast.2021.10.012.

Gultekin, Murat, Sertac Ak, Ali Ayhan, Aleksandra Strojna, Andrei Pletnev, Anna Fagotti, Anna Myriam Perrone, et al. 2021. "Perspectives, Fears and Expectations of Patients with Gynaecological Cancers during the COVID-19 Pandemic: A Pan-European Study of the European Network of Gynaecological Cancer Advocacy Groups (ENGAGe)." Cancer Medicine 10 (1): 208–19. https://doi.org/10.1002/cam4.3605.

Hintermayer, Matthew A, Mark Sorin, Joan M Romero, Sarah M Maritan, Owen J Chen, and Surabhi Rawal. 2020. "Cancer Patient Perspectives during the COVID-19 Pandemic: A Thematic Analysis of Cancer Blog Posts." Patient Experience Journal 7 (3): 31–43. https://doi.org/10.35680/2372-0247.1514.

Hwang, Jihye, Ho Sung Ryu, Hyun Ah Kim, Miri Hyun, Ji Yeon Lee, and Hyon Ah Yi. 2020. "Prognostic Factors of Covid-19 Infection in Elderly Patients: A Multicenter Study." Journal of Clinical Medicine 9 (12): 1–13. https://doi.org/10.3390/jcm9123932.

Indonesian Society of Gynecologic Oncology (INASGO). 2021. "National Data View." 2021. http://www.inasgo.org/fusionchart/APP/opt_National_bar.asp.

Jacome, Lizbeth Soto, Sachin Kumar Deshmukh, Padmamalini Thulasiraman, Nicolette Paolaungthong Holliday, and Seema Singh. 2021. "Impact of Covid-19 Pandemic on Ovarian Cancer Management: Adjusting to the New Normal." Cancer Management and Research 13: 359–66. https://doi.org/10.2147/CMAR.S287152.

Kenneth McIntosh, MD. 2021. "Coronavirus Disease 2019 (COVID-19): Clinical Features." Www.Uptodate.Com ©2021 UpToDate, Inc. https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-clinical-features/.

Liu, Kai, Ying Chen, Ruzheng Lin, and Kunyuan Han. 2020. "Clinical Features of COVID-19 in Elderly Patients: A Comparison with Young and Middle-Aged Patients." Journal of Infection 80 (6): e14–18. https://doi.org/10.1016/j.jinf.2020.03.005.

O'Neill, Danielle, and Alaa El-Ghobashy. 2021. "Impact of COVID-19 on Gynaecological Oncology; a Global Perspective." Heliyon 7 (4): e06658. https://doi.org/10.1016/j.heliyon.2021.e06658.

Rudy, et al. 2015. "Reliability Indonesian Version of the Hospital Anxiety and Depression Scale (HADS) of Stroke Patients in Sanglah General Hospital Denpasar." Researh Gatee 2 (July): 1–23. https://doi.org/10.13140/RG.2.1.3604.5928.

Sica, Antonio, and Marco Massarotti. 2017. "Myeloid Suppressor Cells in Cancer and Autoimmunity." Journal of Autoimmunity 85: 117–25. https://doi.org/10.1016/j.jaut.2017.07.010.

Sorouri, Majid, Amir Kasaeian, Helia Mojtabavi, Amir Reza Radmard, Shadi Kolahdoozan, Amir Anushiravani, Bardia Khosravi, et al. 2020. "Clinical Characteristics, Outcomes, and Risk Factors for Mortality in Hospitalized Patients with COVID-19 and Cancer History: A Propensity Score-Matched Study." Infectious Agents and Cancer 15 (1): 1–11. https://doi.org/10.1186/s13027-020-00339-y.

WHO. 2021. "WHO Coronavirus (COVID-19) Dashboard, Situation by Region, Country, Territory & Area." 2021. https://covid19.who.int/.

Zhang, L., F. Zhu, L. Xie, C. Wang, J. Wang, R. Chen, P. Jia, et al. 2020. "Clinical Characteristics of COVID-19-Infected Cancer Patients: A Retrospective Case

Study in Three Hospitals within Wuhan, China." Annals of Oncology 31 (7): 894–901. https://doi.org/10.1016/j.annonc.2020.03.296.

Zheng, Zhaohai, Fang Peng, Buyun Xu, Jingjing Zhao, Huahua Liu, Jiahao Peng, Qingsong Li, et al. 2020. "Risk Factors of Critical & Mortal COVID-19 Cases: A Systematic Literature Review and Meta-Analysis." Journal of Infection 81 (2): e16–25. https://doi.org/10.1016/j.jinf.2020.04.021.

Zigmond, A. S., and R. P. Snalth. 1983. "The Hospital Anxiety and Depression Scale. Acta Psychiatr. Scand. [Revista En Internet] 2014 [Acceso 28 de Noviembre de 2019]; 64(5): 361-370." Acta Psychiatrica Scandinavica 67 (6): 361–70. https://www.ncbi.nlm.nih.gov/pubmed/6880820.

Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). The COVID-19 pandemic. International Journal of Health Sciences, 5(2), vi-ix. https://doi.org/10.53730/ijhs.v5n2.2937

Akbarov, A. N., & Xabilov, D. N. U. (2021). The condition of the oral cavity in patients who have had a viral infection COVID-19. International Journal of Health & Medical Sciences, 4(4), 381-383. https://doi.org/10.21744/ijhms.v4n4.1796