Original Article

"Everything has been Dramatically Changed Since The Outbreak Began": A Descriptive Qualitative Study of Cancer Care Experiences of Patients and Oncology Nurses during the COVID-19 Pandemic

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Abstract

Background: Cancer during the novel coronavirus disease 2019 (COVID-19) pandemic has changed, leading to challenges in the management of the two serious health conditions of cancer and COVID-19. This study was conducted to explore the experiences of cancer care among hospitalized patients with cancer and oncology nurses in the COVID-19 pandemic environment. **Materials and Methods:** This descriptive qualitative study included interviews with patients with cancer and oncology nurses. Observations and field notes were recorded. In this study, we purposively recruited 11 patients and 10 oncology nurses from a tertiary referral hospital affiliated with the Tabriz University of Medical Sciences, northwest Iran. Face-to-face interviews were conducted between June and July 2021. The interviews were recorded, transcribed verbatim, open-coded, and analyzed thematically. All these steps were managed using MAXQDA 10. **Results:** Three themes were generated regarding patients' and nurses' experiences of cancer care during the COVID-19 pandemic: 1) feeling scared and neglected, 2) appearance of fundamental changes in all aspects of life, and 3) facing challenges beyond routine cancer care. **Conclusions:** This study demonstrates the experiences of a "vulnerable" population during the COVID-19 pandemic. Understanding the experiences of patients with cancer and frontline healthcare providers during this unprecedented time of COVID-19 can help provide guidance and support for health policymakers in evidence-informed decision-making for cancer care beyond the COVID-19 pandemic era.

Keywords: *COVID-19, oncology nursing, patients, qualitative research*

Introduction

Cancer is the main cause of death worldwide and negatively influences the lives of patients, compelling them to face numerous physical and mental challenges.[1] Iran is considered to be at an intermediate risk of cancer worldwide, with an expanding drift of approximately 17.3% in new cancer cases until 2025.[2] Amid the widespread novel coronavirus disease 2019 (COVID-19), those with comorbidities or compromised immunity due to cancer and transplantation were at a higher risk of developing extreme symptoms of COVID-19 with a higher fatality rate.[3] However, patients with cancer, because of their immunosuppressed status and cancer treatment interruption, appear to have more complications when infected with COVID-19.[4] COVID-19 has influenced cancer care in different ways. Most cancer-related arrangements or scheduled screenings were not suggested throughout the pandemic and thus were postponed.[5] Delayed diagnosis and care may have unfavorable consequences on cancer outcomes, driving to a "cancer tsunami" in the upcoming years.[6] Above all, patients with cancer admitted to the hospital for treatment have an increased risk of hospital-acquired COVID-19. This shows the significance of managing patients with cancer in outpatient settings rather than in hospitalization.[7]

Cancer care at the time of COVID-19 has driven inequity and poorer health outcomes for patients with cancer. For instance, cancer care in the COVID-19 national lockdown in Rwanda has ceased, leading to decreased access and utilization of healthcare services in inaccessible regions.[8] In Gaza, within the occupied Palestinian territory, due to the existing lack of resources for cancer care,

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many cancer treatments were confronted with delays or no access in the COVID-19 era.[9] In Iran, the care of patients with cancer affected by the pandemic. Cancer prevention and routine and genetic cancer screening strategies were not recommended or were provided with consideration of the patients' harm-benefit analysis. Cancer surgery, radiation therapy, and chemotherapy are among the complicated and debatable cancer care-related issues during the pandemic, depending on the available resources.[5]

COVID-19 was not the first or last pandemic. It is apparent that directing these two serious health conditions (cancer and COVID-19) at the same time has posed additional challenges to patients, caregivers, healthcare providers, the health system, and the society. Assessing the experiences of the affected population by this qualitative study can assist healthcare providers, health policymakers, and managers in developing evidence-informed policies that could improve the quality of cancer care through and on the far side of the pandemic. To our knowledge, there are exceptionally few studies published in Iran regarding cancer care experiences during COVID-19; therefore, this study provides valuable evidence for this issue. In this study, we explored the experiences of cancer care among hospitalized patients with cancer and oncology nurses in the COVID-19 pandemic environment.

Materials and Methods

This study was conducted between April and September 2021. In this descriptive qualitative study, we assessed the cancer care experiences of patients with cancer, their caregivers, and oncology nurses in a tertiary hospital in Tabriz, northwest Iran. The study was conducted in the context of high incidence, high mortality, and national lockdowns at the beginning of the fifth wave of the COVID-19 pandemic. The study was reported according to the checklist of Consolidated Criteria for Qualitative Studies (COREQ).

Interviews were conducted between June and July 2021. The participants recruited from a tertiary hospital in Tabriz, Iran. Among the 32 contacted participants, 21 agreed to participate. Participants were 10 nurses, 10 patients with cancer, including patients with leukemia, colorectal cancer, gastric cancer, esophageal cancer, breast cancer, brain cancer, and prostate cancer, and one family caregiver. All participants were 18 years or older and could provide written informed consent to participate in the interview and be audio-recorded. The inclusion criteria for nurses were working for 5 years or more in an oncology ward.

A female Ph.D. student conducted 21 interviews under the supervision of a senior female researcher experienced in both cancer care and qualitative research. The interviewer did not have any bias or assumptions before and during the data collection and had no idea about the impact of COVID-19 on cancer care. Observations and field notes were taken during each interview to support data analysis. The interviews were guided by a schedule, the main questions of which are provided in Table 1. To ensure consistency, the interview schedule was pretested in three interviews, and based on the results of the analysis, small changes were made to the schedule.

All interviews were conducted face-to-face at the hospital, mostly without the presence of any other participant or patient, except in one of the interviews, in which, one family member of a patient was in the room, and due to his participation in answering our questions, the interview was changed to a paired interview, in which "the researcher interviews two people at the same time and in the same place so that the two interviewees can interact during the interview."[10] The objectives of the research as well as the reasons and interests of the research topic were first described to the participants. The interviews ranged from 15 to 36 minutes. All interviews were audio-recorded and assigned an identification code (Patient: P1, P2/ caregiver: C1/Nurse: N1, N2). The author who conducted the interviews transcribed audio-recordings verbatim. After 18 interviews, we reached data saturation in the coding process and found no new codes in the data. Three additional interviews were conducted to ensure that no new codes had emerged.

We used a thematic analysis approach, a six-phase process outlined by Braun and Clarke, which is an accessible, flexible, and increasingly popular method of qualitative data analysis.[11] These six steps included 1) becoming

Table 1: Interview guide

Questions related to the patient/caregiver
Can you tell me about your experience regarding coincidence of your disease and COVID-19 pandemic?
What changes have occurred with your treatment process during the COVID-19 pandemic?
What do you think about needs and issues that should be paid much more attention according to your disease and the pandemic coincidence?
What were the main challenges and concerns regarding your disease during the pandemic?
What expectations have you had about the hospital staff during the pandemic?
What expectations have you wished to be met by the health policymaking of essential care in the pandemic era?
Can you tell me about your experience regarding your family and the changes that occurred during the COVID-19 pandemic?
Questions related to the nurse
Can you tell me about your experience of caring for patients with cancer during the COVID-19 pandemic?
What challenges have you faced in caring for patients with cancer since the COVID-19 pandemic?
What expectations have you wished to be met by the health policymaking of essential care in the pandemic era?
What challenges have you faced in policymaking of cancer care during the COVID-19 pandemic?

familiar with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining themes, and 6) writing-up. We organized and managed the data using the qualitative data analysis software MAXQDA v10 (2011). One researcher transcribed the interviews, recalled important points that happened during the interviews, referred to the field notes, and frequently red and reviewed the transcripts to draw initial codes from the data. We used open-coding to identify distinct concepts and themes for categorization. After becoming familiar with the data through reading and re-reading, two independent researchers collated codes, grouped them, and categorized them according to their meanings, similarities, and differences. A list of characterized codes and categories was provided, which was supported by code notes. Both researchers reviewed, organized, and reorganized the data into themes and subthemes. Difficulties in coding and categorizing were discussed by two authors. Finally, the entire dataset was read again to verify that the constructed themes accurately represented the data, and theme titles and definitions were finalized. Themes that were insufficiently supported by data were discarded. Samples of direct quotes for themes and subthemes were selected from the texts.

We used the four evaluative criteria of Lincoln and Guba—credibility, transferability, dependability, and conformability—to validate our findings.[12] First, we enrolled participants with sufficient experience in cancer care in this study. To increase credibility and establish a relationship with the participants before the study commencement, the researcher attended the ward in April 2021. Additionally, the credibility of the data was achieved through immersion in the data. Moreover, the researcher's sustained involvement in all stages of the study and the allocation of sufficient time increased the credibility of our study. Data collection and analysis the data were conducted simultaneously. After each interview and the final analysis, a summary of the interview and a summary of the main findings were provided to the interviewee to operationalize the member checking. Peer checks were also conducted by sharing the extracted themes with other co-authors and asking for their comments. For transferability, we attempted to describe the details of the research process, including the setting and people, to evaluate the extent to which the conclusions drawn are transferable to other contexts. To ensure dependability, an external researcher, who was not involved in the research process, examined whether the findings and conclusions were supported by the data. Finally, for conformability, we reported a transparent description of the research steps taken from the start of a research project to the development and reporting of the findings.

Ethical considerations

The ethics committee of the Tabriz University of Medical Sciences approved this study (IR.Tbzmed.Rec. 1400.247). We obtained signed informed consent from all participants. The research objectives were explained to participants. All participants were free to leave the study at any time. Participants' quotes were anonymized by removing their information.

Results

Participants were 10 nurses, 10 patients with cancer, and one family caregiver. Fourteen participants were female. The majority of patients were diagnosed with leukemia (n = 3) and were diagnosed between 2 and 6 months before the commencement of the interviews (n = 8). The main demographic characteristics of the participants are provided in Tables 2 and 3.

Three themes and nine subthemes were generated from 182 codes on the experiences of patients, caregivers, and nurses about cancer care during the COVID-19 pandemic: 1) Theme 1: feeling scared and neglected; 2) Theme 2: appearing fundamental changes in all aspects of life; and 3) Theme 3: facing challenges beyond routine cancer care.

Theme 1: Feeling scared and neglected

COVID-19 is considered a disaster because of its unique features. Patients with cancer have an extra concern in addition to their serious illness. Patients and nurses were worried about the newly appearing context because of the pandemic, which might make cancer treatment a little difficult.

Subtheme 1: Fear from the new conditions caused by the COVID-19

The new condition in the world caused by COVID-19 has imposed fear and panic in humans, especially in patients with cancers. One of the patients declared that: *"Everything has been dramatically changed since the outbreak began. When I go out, even in open air, I can neither breathe nor eat anything. Many problems arise. It's not just me and it's the same for everyone."* (P5, a patient with colorectal cancer)

However, some people who also suffered from defects in their immune systems simultaneously turned this fear from COVID-19 into cancer in their bodies. In this regard, one of the nurses mentioned, *"Women get cancer mostly because of stress, and one of the patients [with leukemia] said that since Coronavirus came, I was so stressed that it was the reason for my platelets to decrease."* (N6)

Subtheme 1-2: Loneliness and feeling isolated

The participants experienced moral injury due to letting their family members alone during the critical period of their illness. The COVID-19 pandemic and lockdowns have added tremendous emotional burden to patients with cancer. Participants described their experiences in terms of loneliness, house arrest, distress, and anxiety about attending hospital appointments and being cared for at

Table 2: Demographic features of patients and a caregiver

Code	Gender	Age	Education degree	Marital status	Primary tumor of patient	Cancer history (months)
P1	Male	60	Less than diploma	Married	Esophageal	4
P2	Female	38	Less than diploma	Married	Leukemia	2
P3	Female	22	Bachelor's degree	Single	Leukemia	4
P4	Female	59	Bachelor's degree	Married	Gastric	2
P5	Male	75	Less than diploma	Married	Colorectal	10
P6	Male	45	PhD*	Married	Colorectal	6
P7	Female	40	Bachelor's degree	Married	Gastric	8
P8	Male	71	Bachelor's degree	Married	Prostate	3
P9	Female	58	Less than diploma	Married	Breast	1
P10	Female	35	Bachelor's degree	Single	Brain tumor	5
C1	Male	28	Bachelor's degree	Single	Leukemia	2

*: Doctor of Philosophy

Table 3: Demographic features of nurses

Code	Gender	Age	Education degree	Marital status	Work length (years)
N1	Female	32	Bachelor's degree	Single	8
N2	Female	28	Bachelor's degree	Married	2
N 3	Female	35	MSc*	Single	7
N 4	Male	46	MSc	Married	12
N 5	Female	49	MSc	Married	22
N 6	Female	33	MSc	Divorced	4
N 7	Male	38	Bachelor's degree	Married	15
N 8	Female	55	Bachelor's degree	Married	26
N 9	Female	39	PhD**	Married	7
N 10	Female	29	Bachelor's degree	Single	3

*: Master of Sciences. **: Doctor of Philosophy

home. For example: "*There is no empathy. I have been diagnosed with cancer for three months, but still, a friend or family member cannot come and see me. Because of coronavirus. This makes me sicker.*" (P4, a patient with gastric cancer)

However, nurses expressed this issue from another aspect: After taking care of patients with polymerase chain reaction (PCR)-positive test results, they had to spend 14 days in quarantine and away from their families and children, which doubled the hardness of their job. One nurse expressed the following: *"For example, we worked with a patient for 24 hours, and when his PCR returned positive, we were worried about what would happen next. We have to quarantine ourselves at home. Staying away from the children."* (N5)

Theme 2: Appearing fundamental changes in all aspects of lives

Due to the specific characteristics, misconceptions, and clinical manifestations of COVID-19 on the one hand, and the specificity of the cancer and the complexity of diagnosis and the importance of timely treatment, on the other hand, in the simultaneity of these two disasters, a series of fundamental changes occurred in cancer care for patients, healthcare staff, and health systems.

Subtheme 2-1: Delay in receiving/or providing healthcare services

The unprecedented COVID-19 pandemic has resulted in delays in cancer diagnosis and treatment. Patients were stressed and avoided going to the hospitals to receive their routine healthcare services (check-ups or treatment) because of uncertainties about the COVID-19 situation and the risk of exposure to the virus, which affected timely access to the healthcare service and delayed it until disease progression. One nurse told us about this issue:

"Because they [patient] thought that this hospital was a coronavirus place, they arbitrarily delayed their treatment and did not return for receiving care. And sometimes, one or two months later, they would come for treatment, but due to the delay, we would see that the patient was in critical condition, and the COVID-19 has greatly affected their treatment process." (N1)

For another example

"During the pandemic, I had fear and did not go my routine check-up, so this problem [the advanced stage of cancer] appeared. Maybe if I understood earlier, it [the treatment] would be easier and I did not suffer so much." (P1, a patient with esophageal cancer)

Delays in receiving healthcare services also occurred on the supply side of care. For example, a patient with positive PCR test results should inevitably be quarantined and isolated in one room, which reduces the capacity of the hospital to admit new patients and postpones receiving services, which may lead to the disease progression. One participant noted that: *"If one of the patients had a positive PCR test result, the room, regardless of the number of beds, was devoted to only one patient. So taking a turn to be admitted to hospital will be delayed."* (P3, a patient with leukemia)

Another form of postponement in cancer care was in such a way that if the patient was on the emergency list for surgery, his or her operation could be postponed due

to the positive PCR results. The long waiting time for surgery after a positive PCR resulted in great anxiety and stress in the participants. For example: *"Exactly. When I went for surgery, even though my surgery was necessary and had to be done in the shortest possible time, they said that I should take a COVID PCR test first. Unfortunately, my test result was positive, and I had to spend two weeks in quarantine. During this time, my disease progressed a lot."* (P6, a patient with colorectal cancer)

Subtheme 2-2: Confusion in cancer/COVID diagnosis

Due to the similarities of COVID-19 symptoms to patients with cancer, patients felt that their symptoms were misinterpreted, and they were more likely to receive the wrong diagnosis and treatment. One participant mentioned the following:

"Because we have a dry cough and gastric reflux, sometimes it is not diagnose appropriately and they transmit us to corona wards." (P2, a patient with leukemia)

In addition, one nurse participating in the study mentioned:

"Many mistakes have been made in diagnosing and identifying symptoms. In some cases, the patient had a decrease in hemoglobin level and a decrease in O2 saturation. Here the diagnosis is COVID-19, and the patient is discharged [by mistake]." (N7)

Subtheme 3: Unnecessary interference of patients in the type of care they receive

During the COVID-19 pandemic, patients preferred to avoid hospital treatment and receive treatment as much as possible in outpatient clinics or even at home, and the result was that patients unnecessarily interfered in their treatment and preferred not to receive special services or have easy access to that service. As one participant described: *"In COVID-19 peaks, the number of patients with cancer in our hospital decreases. Patients prefer to take medications at clinics or at home. The doctor is asked [by the patient] to prescribe a low-dose drug so that they can inject it on an hourly basis and not be hospitalized."* (N10)

Theme 3: Facing challenges beyond routine cancer care

Cancer itself is a difficult and complex condition, and is receiving healthcare services because of its specific characteristics. The COVID-19 pandemic has created additional challenges for the patients that extend beyond their routine cancer care.

Subtheme 3-1: Difficulties in access to hospital

Substantial policymaking uncertainties during the pandemic caused patients to be stressed and anxious about their care, such as transportation restrictions, lockdown durations, and uncertainties related to treatment costs, and financial difficulties. The caregiver who participated in this study mentioned the following: *"When we come from rural areas, we are fined at least five million Rials each time due to travel restrictions. However, it is not always possible to get a permission letter. Sometimes, the admission time falls in the afternoon, and they [nurses] say, come and be hospitalized. This is a horror. We have to pay five million Rials. Then we come [Tabriz], there is no bed here [at the hospital] and we have to go and come again a few days later."* (C1, for a patient with leukemia)

Subtheme 3-2: Unexpected shortage in equipment

During some peaks of the pandemic, the Iranian health system suffered from a lack of equipment, such as personal protective equipment for healthcare staff and patients. Participants in this study were expected to have access to personal hygiene equipment for their protection and for others during their hospitalization. For example:

"Masks and gloves were unavailable. In the COVID-19 wards, they do not wear clothes and wear ordinary gowns that do not protect them." (N2)

In addition, participants declared that, at some peaks of the pandemic, there was a shortage of medical equipment. One of the participants added

"The number of thermometers [in the wards] is low. In the year when thermometers became scarce and expensive, we worked with one thermometer for 40 patients. Equipment is always scarce in public hospitals, and the COVID-19 pandemic has become an excuse… [Became sad]" (N9)

Subtheme 3-3: Lack of human resources due to the COVID-19 quarantines

Based on the narratives, participants pointed out the problems related to the quality of care affected by the standard of nurse-to-patient ratio, which, according to them, was theoretical, and it was not possible to implement them in practice due to shortages and lack of human resources. Nurses' shortage due to the high number of COVID-19 patients was felt to compromise care by several participants. For example, a participant declared *"One of the patients had coronavirus here and she [the nurse] went to see him and then she went to rest and quarantine for two weeks/a month. Nurses are always on rest for two or three of them because they have taken the coronavirus. [Laughed]"* (P10, a patient with brain tumor)

Subtheme 3-4: Sacrificing the needs of patients with cancer due to COVID-19

According to the participants, the COVID-19 pandemic affected the needs, quality, and scope of care of patients with cancer. Cancer is considered an important disease because the resources allocated to it should not be allocated to other diseases under any circumstances. One participant declared the following:

"This [cancer] is a special disease so it's everything must be separated. For example, they should have separate insurance because its costs are high. For example, they

should have a higher budget and equipment. Because the disease progresses rapidly." (P9, a patient with breast cancer)

Or another participant added

"COVID-19 patients should not be brought here [this hospital] because of cancer patients. Sometimes there is a shortage of beds in other hospitals, which is why COVID-19 patients are brought here." (P8, a patient with prostate cancer)

Discussion

This qualitative study explored the experiences of cancer care of hospitalized patients with cancer and oncology nurses during the period of high incidence, high mortality, and national lockdowns of the COVID-19 pandemic in Iran. Three themes emerged from the participants' narratives: 1) feeling scared and neglected, 2) appearance of fundamental changes in all aspects of life, and 3) facing challenges beyond routine cancer care.

Patients and nurses in this study expressed high levels of fear during the pandemic due to the underlying health conditions of patients, the impact of quarantine measures, social isolation, and uncertainty surrounding the pandemic. Our findings are in line with those of Mirlashari and colleague's study[13] on children with cancer, which revealed increased fear among patients and their families during the COVID-19 outbreak. Similarly, consistent with Seven and his co-authors' research,[14] participants expressed concerns not only for their own health but also for the well-being of their healthy children. However, our findings diverge from Ebrahimi and colleagues' study, which reported that some patients found solace in solitude during the quarantine period and embraced the opportunity to live in the moment and utilize available resources.[15]

During the quarantine period, elderly patients experienced increased depression due to the inability to utilize digital technology, such as mobile video calls. Furthermore, their hearing impairment compounded communication challenges arising from mask and face shield usage.[16] It seems that social and support networks, pandemic awareness campaigns, and reliable information dissemination can mitigate outbreak-related stress and insecurity among vulnerable patients. However, comparative studies are needed before concluding this.

A significant concern expressed by patients and nurses was the delay and potential confusion surrounding cancer care during the pandemic. Patients experienced a great deal of fear about their cancer prognosis due to treatment postponement. These findings align with Gatellier *et al*.'s research,[17] which identified delays in cancer care and missed diagnosis as key patient concerns during COVID-19. It is estimated that a potential increase in cancer-related deaths will occur within the next 5 years in England, attributed to pandemic-induced disruptions in diagnosis and treatment.[18] This issue is particularly pronounced in low- and middle-income countries but is also evident in developed nations.[19-21] Notwithstanding these challenges, e-health interventions, such as telemedicine, telephone visits, and videoconferencing, have been replaced in certain aspects of cancer care within many healthcare systems.[22-24] Mostafaei *et al*.'s[25] qualitative systematic review and meta-synthesis revealed a preference for telemedicine over face-to-face appointments during the pandemic for cancer care. While patients generally expressed satisfaction with telemedicine, its applicability is limited to certain cancer-related services, primarily consultations, and follow-up visits. The infrastructure and the cost-effectiveness this technology in various countries should also be considered.

Findings from this study drew attention to the shortages of equipment and human resources during the COVID-19 pandemic. The importance of the optimal resource management during crises is undeniable. This was also observed in another healthcare setting,[26] in which there was a shortage of medication in 80% of healthcare centers in the Middle East, North Africa, and West Asian regions during the COVID-19 pandemic. Bed deficiency and supportive care shortages were reported in 40% of these centers. Results of a study in the United States showed that there was a lack of personal protective equipment due to global supply chain disruptions amid the outbreak.[27] Jazieh and colleagues observed similar challenges globally, with access to cancer medications and personal protective equipment negatively influenced during the pandemic.[28] Managing cancer medication supply during a health crisis and balancing the national budget between non-communicable diseases and the pandemic is crucial for ensuring equitable access r to cancer treatment. Regulatory agencies, such as the US Food and Drug Administration, the European Medicines Agency, and the United Nations, have implemented guidelines to address medication shortages during a health crisis.[28]

Our participants also discussed the shortage of oncology medical staff during the COVID-19 pandemic, which has been reported in some other circumstances.[16,27-29] Indeed, healthcare professionals expressed physical and emotional stress due to long working hours, excessive workload, infection risk, and high mortality rate. Isolation from families further exacerbated mental distress. Additional studies are needed to assess the post-COVID mental health of nurses. Top health managers and policymakers must design and implement persuasive interventions to prevent such disorders in the post-pandemic period.

Finally, our participants noted an unequal resource allocation to cancer care compared to other diseases. Policymaking for cancer care during the COVID-19 crisis has encountered inevitable challenges. These effects have

been reported in other study,[13] implicating an unfair distribution of financial resources in Iran, with a greater emphasis on COVID-19 than cancer care, and leading to sacrificing patient needs. Indeed, many cancer-related challenges arose from a decreased focus on preventive measures for non-communicable diseases, although few participants reflected this. More particularly, the unfair distribution of resources for COVID-19 diagnosis, treatment, and prevention will inevitably hinder the management of non-communicable diseases (NCDs) now and in the future. NCDs will continue to claim lives and consume a significant portion of the global budget. Therefore, the international community should not allow the coronavirus outbreak and other communicable diseases spoil global attempts in controlling and preventing NCDs. Resource allocation for COVID-19 or any other health crisis and NCDs should be balanced, advocating for secure, sustainable financing to overcome this challenge.[30] This study is valuable for understanding the status of cancer care at a local level. As future crises are possible, similar research will help to recognize the experiences of patients with cancer, design, and implement support interventions, prepare for crises, and promote self-empowerment according to their needs. There are several limitations to our study. Although this is a qualitative study, there is a potential risk of selection bias as participants were only recruited from a single oncology center, and the respondents may not represent the entire population of patients with cancer and oncology nurses. Also, conducting the study at the onset of the fifth wave of the outbreak in Iran caused more experienced nurses to fail to participate in the study due to burnout and a busy schedule, which is a major concern.

Conclusion

The COVID-19 pandemic posed critical challenges to patients living with cancer, their caregivers, and healthcare providers both during and after the end of the pandemic. These challenges were categorized as patients and healthcare provider's feelings, changes in the providing/receiving of cancer care, and challenges beyond routine cancer care. Recognizing the experiences of these "vulnerable" populations can shed light on new perspectives for the upcoming threats in the future, whether natural or human-induced. International organizations and governments should be restructured in a way that they can deal with and continue to live within the crisis period. Implementing policies for prevention, screening, and early detection of major non-communicable diseases, as the main killer of individuals, should not be sacrificed with any new and uncertain conditions, rather, must become an inevitable part of the health policy agenda under any circumstances. Also, health policymakers and top health managers can conduct programs for empowering nurses and healthcare providers to better manage themselves and patients during a health crisis.

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Conflicts of interest

Nothing to declare.

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