

Üzar-Özçetin Yeter Sinem (Orcid ID: 0000-0003-3744-1398)
Öcalan Sinem (Orcid ID: 0000-0001-6128-4666)

Covid-19 related ruminations: A qualitative study based on the perspectives of the cancer survivors

Running head: Ruminations in Cancer Survivors

Study Authors:

Yeter Sinem Üzar-Özçetin PhD, RN, Associate Professor, Sinem Öcalan MSc, PhD Student, RN, Res.
Assist.

1. Yeter Sinem Üzar-Özçetin: PhD, RN, Associate Professor

Postal address: University College Dublin, School of Nursing, Midwifery, and Health Systems,
UCD Health Sciences Centre, Dublin/Ireland

E-mail: sinem.uzarozcetin@ucd.ie

Phone: +903123051580

ORCID: 0000-0003-3744-1398

2. Sinem Öcalan: MSc, PhD Candidate, RN, Research Assistant

Postal address: Hacettepe University Faculty of Nursing Psychiatric Nursing Department, 06100
Ankara/Turkey.

E-mail: sinem.cln@hotmail.com

Phone: +903123051580

ORCID: 0000-0001-6128-4666

Corresponding author: Sinem Öcalan, MSc, PhD Candidate, RN, Research Assistant

Postal address: Hacettepe University Faculty of Nursing Psychiatric Nursing Department, 06100
Ankara/Turkey.

E-mail: sinem.cln@hotmail.com

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Phone: +903123051580

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Author contributions

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Methodology: YSÜÖ, SÖ

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Abstract

Cancer survivors can develop repetitive ruminations due to the unexpected and challenging effects of Covid-19. This qualitative descriptive design study aimed to comprehend the Covid-19-related ruminations from the subjective perspective of the cancer survivors (n = 33), accessed via online Facebook self-help groups of a cancer association. A semi-structured interview guide was used for data collection following a systematic analysis. Based on the descriptive analysis of the data, three main themes with two sub-themes emerged, including cancer survivors' experiences: "*welcome to my life*," "*cancer vs. Covid-19*," and "*fight vs. lose*." The findings suggested that cancer survivors have many ruminations about cancer and the pandemic. Their ruminations were mainly concerned with the possibility of suffering from cancer again and catching Covid-19. Nonetheless, participants also had positive cognitions that they could overcome the pandemic as they have previously beat cancer. The findings may also offer a promising resource for nurses to understand the ruminations of cancer survivors and develop novel approaches and interventions to help cancer survivors replace their intrusive ruminations with deliberate ones.

Keywords: Cancer, Covid-19, pandemic, rumination, survivors

Key points

- The study underlines the influence of ruminations on how cancer survivors perceive their cancer experience and the Covid-19 pandemic.
- Cancer survivors have many ruminations about cancer and the pandemic, activating the vicious cycle of intrusive thinking.
- The findings offer a resource for oncology nurses to understand the ruminations of cancer survivors and develop their skills for supportive care.

1 INTRODUCTION

Cancer is commonly equated with death and is viewed as a devastating life disease. As a result, it generally results in great distress that continues from diagnosis through survival (Chiriac et al., 2018). It is also recognized that even after they finish active cancer treatment and enter the remission period, individuals with cancer mainly suffer from psychological problems (e.g., fear of recurrence, anxiety, depression, posttraumatic distress disorders, etc.) (Palesh et al., 2020; Ringash et al., 2018). Unfortunately, psychological issues related to cancer continue to be a concern for many individuals and have worsened during the Covid-19 pandemic among cancer survivors due to the unexpected, unknown, and challenging effects of the virus (Jones et al., 2021). Although at its early stages of development, recent literature has shown the psychological influences of the Covid-19 pandemic on cancer survivors (Ng et al., 2019; Swainston et al., 2020). However, one underrecognized aspect of cancer-related psychological problems during the pandemic relates to ruminations (Choobin et al., 2021). Rumination is defined as persistent thoughts about difficult events (Cann et al., 2011). The cognitive process involved in rumination consists of actively thinking about adversity, the thoughts and feelings it evokes, and their effects on one's present and future. It includes two types: intrusive and deliberate (Nolen-Hoeksema, 2008). Intrusive rumination can induce negative feelings such as worry, sadness, and fear. Whereas deliberate rumination aids individuals in understanding the distress that they are experiencing (Kamijo & Yukawa, 2018). As a result, it has greater value in shaping the consequences (Tan et al., 2021). According to Response Style Theory (RST), rumination enhances maladaptive coping and dysfunctional attitudes, which impair problem-solving and intensify emotional distress (Nolen-Hoeksema, 2008). Similar to the perspective of RST, in the literature, it is evident that individuals with cancer are prone to focus on intrusive ruminations (Renna et al., 2021; Öcalan & Üzar-Özçetin, 2021; Tan et al., 2021). This subsequently leads to catastrophic cognitions (e.g., *"What did I do to deserve this? Why me?"*)

(McLaughlin and Nolen-Hoeksema, 2011). These catastrophic cognitions are characterized by negative inferential or attribution styles, dysfunctional attitudes, hopelessness, pessimism, self-criticism, and low mastery. In this regard, it is also known that intrusive rumination has a close relationship with perceived identity and emotional representation of depression (Lu et al., 2014).

In the long term, rumination is a way of responding to distress that exhausts the psychosocial resources of cancer survivors, increasing anxiety, causes depression, decreasing the quality of life, and interrupting daily life (Renna et al., 2021). Therefore, ruminations may directly affect both how one uses one's resources and how one interprets the sickness (McLaughlin and Nolen-Hoeksema, 2011). However, there is a lack of literature about ruminations of cancer survivors during the Covid-19 pandemic. In this context, there is a need to understand cancer-related ruminations during the pandemic. The present qualitative study aimed to comprehend Covid-19-related ruminations from the subjective perspectives of cancer survivors.

2 METHODS

2.1 Design

This study used a qualitative descriptive design. The COREQ (Consolidated criteria for Reporting Qualitative Research) Checklist was used to ensure quality reporting (Tong et al., 2007).

2.2 Setting

The study setting was Facebook groups of a National Cancer Association in Turkey. The Facebook groups were exclusive and confidential, with thousands of people with cancer or survivors as members. In the group, both members might access useful information related to cancer from the webinars of experts in the field of oncology, psychology, and psychiatry. Additionally, they can share their experiences and may ask questions to each other and the

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experts. The interviews with cancer survivors were held using Zoom meetings. Participants in this meeting were free to express themselves without feeling compelled.

In Turkey, every aspect of inpatient and outpatient treatment processes follows the regulation of inpatient treatment institutions' management (Resmi Gazete, 1983). Individuals should use the online patient appointment system to make an appointment; if an emergency arises, they can also apply to emergency departments. Otherwise, the polyclinics are the first evaluation units among institutions for outpatient processes. In accordance with the first assessments of outpatient units, further examination for inpatient diagnosis and treatment services might be provided. All evaluations during the inpatient and outpatient processes are managed by health care providers, specifically physicians, and nurses. Physicians choose the hospitalization and treatment processes, and nurses apply the treatment, monitor the side effects and treatment results, and provide complete nursing care.

2.3 Sample

The study was conducted between December 2020 and June 2021 from online Facebook self-help groups of a National Cancer Association that served all cancer survivors due to hospital disapproval during the Covid-19 pandemic. The association was first provided the study protocol and ethics permission. After getting consent, the association added the researchers to the Facebook groups. The researchers then shared a weekly announcement that included detailed information about the study and the contact information of the researchers. Voluntary participants contacted the researchers. The study was explained to eligible cancer survivors via an online letter with google forms, along with a request for their approval of the form. After approval, a time was decided for an in-depth online interview with eligible participants. The interviews with the participants were carried out by one of the researchers using the Zoom program.

The participants were cancer survivors meeting the following criteria: having been in remission for at least a year, voluntary participation, and being at least 18 years old. Finally, 33 participants were included in the study's conclusion.

2.4 Data collection

Cancer survivors who saw the announcement of the study via Facebook groups of a cancer patient association connected with the researchers. The researchers then shared a link to a Google Form containing a consent form and questions about contact information (phone number). Further, the researcher [SO] contacted eligible voluntary participants by telephone to arrange an appropriate time for the Zoom interview. Before the interview, the researchers provided further information about the study to the participants. Following that, participants were asked to approve online informed consent. All the interviews were conducted by one of the researchers [SO] to avoid unanticipated issues arising from the interviewer change. The researcher [YSUO] is an Associate Professor with a Ph.D. degree in psychiatric nursing, while the researcher [SO] is a Research Assistant with an MSc degree in psychiatric nursing. They have both published qualitative design studies and conducted qualitative research.

Data were collected by conducting Zoom interviews using a semi-structured interview guide (Figure 1). Each interview was conducted via the Zoom platform. There were no prior interactions or uneven power relations between the researchers and the subjects. The interviews were audio-recorded, and each lasted an average of 50 min. No repeated interviews were conducted.

2.5 Trustworthiness

Kvale and Brinkman's (2015) guideline was followed to ensure reliability. As per the guideline, validity is connected to every step of the research process, starting from selecting participants and conducting interviews to the transparency of further analysis. To assure validity, purposeful sampling was performed. Secondly, in the semi-structured interviews, open-ended questions

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were used rather than guiding questions, which might have threatened the validity of the qualitative interview data. The interviewer carefully determined the participants' quotes and used probing questions such as "*Can you tell me more about that*" and "*What do you mean when you say [xxx]?*" to confirm genuine understanding. Field notes were made, and transcripts were completed immediately after each interview. Another way to ensure reliability is that it is compatible with the aim of the study and the interview questions (Brinkman and Kvale, 2015). Semi-structured interview questions were prepared in line with the study aim. Data saturation is reached by continuing data collection until no further new relevant information can be identified (Speziale et al., 2011). In this study, the researchers determined that saturation had been reached when they saw repetition in the participants' replies and no new information pertinent to the study's aim. The transcribes were completed by two researchers. The researchers identified the themes based on which similar ideas should be clustered to ensure credibility and trustworthiness. The researchers have been working with cancer survivors about ruminative thinking for many years, which makes them aware of not reflecting their predetermined assumptions on the research. The researchers make sure of reflexivity in this method.

2.6 Data Analysis

A systematic data analysis procedure was followed to understand the subjective experiences and meanings of data from in-depth interviews (Malterud, 2012). First, the researchers independently transcribed and read the audio-type interviews to have a general understanding of the experiences of cancer survivors during the Covid-19 process. Second, all transcribed interviews were exclusively proofread to ensure familiarity with the contents. The content was divided and coded into meaningful units representing the participants' ruminative thoughts and coping experiences regarding the Covid-19 process and cancer experiences. The conclusions were then discussed about the contents of the code groups and subgroups in the transcripts to

capture the intended meanings. Finally, the researchers shared the interpretations and reached a consensus on the final form of themes. Without adding any commentary, direct quotations from the semi-structured interviews were used.

2.7 Ethics

All the study procedures were completed following the principles of the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee of the Hacettepe University (Ref ID: GO21/181), and the necessary permissions were obtained from the cancer association, which was communicated to access the cancer survivors in this study. Before mailing the participants a copy of the permission form, the study's protocol was described to them. They were also informed that the interviews would be confidential, and that each participant would remain anonymous in the reporting. It was made clear to participants that they might leave the research at any moment without any consequences. All audio copies and written materials were stored and locked.

3 FINDINGS

The themes identified based on the descriptive analysis of the data included cancer survivors' experiences: "*welcome to my life,*" "*cancer vs. Covid-19,*" and "*fight vs. lose*" (Table 1). The mean age of the participants was 49.8, the duration since diagnosis was 5.8 years, and the duration of remission was 4.5 years on average. Participants represented diagnoses of a heterogeneous group of cancers (12 diagnosed with breast cancer, four with myeloma, three with lymphoma, three with the rectum, and two with Lung cancer) (Table 2).

Each quote is recognized using the signifier "P" for the participant to ensure that individual participants were anonymized.

3.1 Welcome to my life

Many participants highlighted that they were used to living with limitations due to their experiences with cancer and its restrictions. Hence, they designated that Covid-19 restrictions

were very acquainted to them, but this time, they are not alone, which made them feel more comfortable.

3.1.1 Used to live in isolation

Participants specified that many people complained about the limitations and life-changing new normal. However, cancer survivors were used to living in isolation for a long time during their active cancer processes. As a result, participants stated that they were surprised when they heard harsh and exaggerated comments about limits. During Covid-19, the restrictions were for everyone, so participants said that this time they felt like they were part of the society.

“During the cancer period, I did not go out for months, or rather, I could not go out. Some cry because they could not go shopping, those are sad because they could not go to the market, those who say they cannot meet anyone, they said the pandemic stopped in our lives. We’ve already experienced these, they were very funny, nothing more. We [cancer survivors] had a huge illness, so it was funny. I watched people complaining about a pandemic like that; I did not comment much; I just looked at them. I just wanted to say hello and welcome.” (P23, M, 36y)

“Here are the thoughts that come to my mind regarding the Coronavirus: I think that I already know these concepts, such as mask, distance, and cleaning, that we all have been put into our lives by heart and that I cannot understand people who alienate these concepts so much. Because many people diagnosed with cancer are accustomed to these hygiene rules and live in isolation in this way. It was not a very foreign situation for me either. The precautions are taken when we encounter such a pandemic with the Coronavirus. But there were things that I felt were already familiar.” (P26, F, 56y)

3.1.2 Not feel lonely

Participants mentioned that they expressed a sense of community as the constraints applied to everyone and that everyone experiences the same issues. Although restrictions were boring and

made participants remember their previous challenges with cancer treatment-related isolations, they could easily embrace the Covid-19-related restrictions.

“If you look at people who have experienced cancer, these things [restrictions during the pandemic] are not far away; we have experienced these before. When I encountered the disease, I had a completely different view of my life; I was completely out of it. Similar feelings to Covid-19, but this time everyone is experiencing it at the same time. You get disconnected from something for a moment; it’s the same when you are sick; all worldly problems come to an end at once, all worries, worries, ambitions, work, school, education, career, money, everything suddenly loses its importance. The only thing that matters is love, family, these concepts remain. Suddenly, we went out of our normal life; all the daily problems suddenly lost their importance. Life is suspended. I had experienced this before when I was sick, and it helped me a lot.” (P3, F, 44y)

“In the pandemic, I thought I was not alone this time. I was alone before, but this time I thought everyone was the same as me. The other time, I was alone. I was isolating myself alone. In this pandemic, everyone was on the same level as me; we were in the same boat, and we shared the same thing, fears, same feelings. I was thinking this. I was alone during my cancer.” (P17, M, 65y).

3.2 Cancer vs. Covid-19

Participants often made comparisons between the effects of COVID-19 and cancer. Although Covid-19 has many devastating results, many participants mentioned that their cancer fear is greater than that of Covid-19. They stated that a person who defeated cancer might likewise deal with Covid-19. However, few of them also underlined their uncertainty about survivorship due to their physical weaknesses.

3.2.1 Whoever defeats cancer defeats Covid-19

Participants felt sorry for themselves regarding the challenging processes they experienced due to the cancer. They expressed concern about the recurrence which means experiencing those challenges again. As a result, they said they were less concerned about getting Covid-19 than they were about getting cancer. However, dealing with such a threat required them to question their capacity to beat Covid-19.

“Cancer is a much more dangerous disease. Currently, 28,000–29,000 people have lost their lives due to Covid-19, but over 180,000 people lose their lives from cancer per year. So, cancer kills more people.” (P1, F, 48y)

“My fear is not Corona, frankly. Am I so afraid of Corona or not so afraid? No, actually, I’m more afraid of cancer.” (P2, M, 49y)

“Now, I’m sure it’s not a pain that is many times greater than the pain people experience when they receive chemotherapy, but the only thing that can make me nervous is the fear of not being able to breathe. This much. I’m not afraid of anyone else.” (P25, F, 54y)

3.2.2 Not sure if I can survive

Cancer survivors were unsure of their ability to conquer Covid-19 given their cancer trajectory because they stated that their immune system was not as strong as individuals who did not experience cancer. Most participants expressed uncertainty about their ability and competency to overcome Covid-19 infection if they get it.

“As cancer patients, now we have been treated, thank goodness, we passed the normal checks, but I always think that there is a time bomb inside us ready to explode, so we cancer patients cannot say that we are completely healed. Because, for example, I survived, 3 years later, new metastasis. That fear is enough for us, so the fear of cancer is enough for us. And when there is fear of Covid-19, now, for example, if I get caught [Covid-19], you know, I need to try to get over it, take that treatment there anyway, and the immune system is already falling, so you inevitably get nervous.” (P30, M, 58y)

“Covid-19 took me back to the same days [cancer treatment]. Now, what will happen, where are we going, how will it be, when will it get better? You know, there is uncertainty but also the hope of trying to do something, but I lost everything when all my life suddenly changed, the flow of my life stopped. When it stopped, I felt a great sense of hopelessness about the future.”
(P5, M, 25y)

Some participants specified that they preferred not to attend their routine doctor checkups at the beginning of the pandemic because they were afraid of not having a strong immune system. *“I was going for a routine checkup every 6 months. Nonetheless, I never ever attend my checkup appointments after the Covid-19 pandemic has started. Everyone was very afraid of the epidemic, and my immune system would be weaker than others.”* (P3, F, 44y)

“Of course, because of the restrictions, my routine checkups were automatically delayed when it [Covid-19] first showed up. Then, I purposely delayed my checkups because I preferred to be at home instead of going to the hospital and catching that virus [Covid-19]. I preferred to delay.” (P9, F, 47y)

3.3 Fight vs. Lose

Participants have compared this process to a war that they must fight or lose. They were aware of the effects of their risk of Covid-19 infection on their thoughts. Participants claim that uncertainty renders their sources and makes them vulnerable to intrusive maladaptive thinking. These catastrophic thoughts affect participants negatively, so they try to overcome them by focusing on daily life activities. The uncertainties that the Covid-19 process brings as a major obstacle leads to worries and provoke anxiety. However, they were also aware of the value of resisting and wanted to win this fight.

3.3.1 Repetitive cognitions

Participants indicated that they experience uncomfortable repetitive cognitions related to their Covid-19 which make them uncomfortable. Their primary concern is the possibility of losing a loved one. This fear enhances their anxiety and enriches their negative thinking style.

“In any Covid-19-related news, the first thoughts that frequently come to my mind are the ones I love if I have loved ones and I will lose them. I was very afraid of him, not of myself. I did not hesitate too much for myself and cannot stop these thoughts.” (P28, F, 51y)

“In the first period, I was afraid of being separated from my children or losing one of them or a loved one. Not necessarily because I have cancer because I am going to die, but I was afraid to infect people I love, or their death would make me nervous. I always had a fear of loss in my mind and very often find myself thinking on it.” (P12, F, 56y)

3.3.2 Withstanding intrusive cognitions

Participants emphasized the importance of resisting to carry on with normal life, whereas the Covid-19 process brought many repetitive thoughts that they struggled to overcome. They were also aware of the effects of these cognitions and tried to find ways to overcome them. Further, they also highlighted their coping strategies with negative cognitions.

“You always think about it when you’re empty anyway, but I always tried to find a pastime, so of course, there were times when I was worried, but as I said, I chose to divert my attention to another place/thing to prevent my thoughts about the pandemic, so I found something to do. One of them was reading a book, and the other was playing a game. There were times when I was watching TV series. I try to do my best to get rid of negative cognitions about the pandemic.” (P1, F, 48y).

“I’m a bit lethargic and confused, so I said myself that I should not be like this, I ca not live depending on these thoughts [Covid-19 related worries]. Thus, I started to do knitting, gardening, field vegetables. If I get very bored, I am driving my children to get fresh air and to walk around. This is how I tried to forget.” (P24, F, 44y)

4 DISCUSSION

Cancer is a life-devastating disease that causes profound, difficult changes in life, which range from physical (alopecia, eczema, vomiting, etc.) to psychological problems (e.g., depression, anxiety, posttraumatic distress, etc.). These changes persist even after remission and force its sufferers to adopt a ‘new normal’ (Frey et al., 2020). Cancer survivors must adapt to several difficult adjustments in their everyday lives during the Covid-19 epidemic, much like the rest of the globe (Nicolescu & Băban, 2021). However, the challenges that Covid-19 brings might increase cancer survivors’ existing problems due to their cancer experience. In this context, it is essential to comprehend how cancer survivors perceive the Covid-19 pandemic and its effects based on their underlying lived experiences.

The uncertainties and fears associated with the Covid-19 outbreak, along with lockdowns and economic recession lead to psychological distress and dramatically altered people's lives, as well as multiple aspects of global and public well-being (Xiong et al., 2020). The COVID-19 pandemic may disproportionately affect cancer survivors by exacerbating their traumatic cancer experience and increasing mental health distress (Nekhlyudov et al., 2020). Recent studies revealed a risk of Covid-19-related mortality and morbidity among cancer survivors (Albiges et al., 2020; Jazieh et al., 2020; Mehta et al., 2020). This risk arose from the infectious and unpredictable nature of Covid-19 (Jazieh et al., 2020). Wong et al. (2021) reported that cancer survivors had increased levels of anxiety that worsen the psychological distress after the Covid-19 outbreak. The evidence from this study suggests that some cancer survivors evaluate their fear of cancer recurrence much more than the Covid-19 risk. The anxiety seemed to be heightened in particular by the uncertainty of when control appointments will resume as usual owing to the epidemic. This result can be explained by the devastating nature of cancer treatment processes that no one wants to experience again. Nicolescu & Băban (2021) showed that cancer patients were more concerned about their cancer and treatment than

the treatment of Covid-19 infection. Similarly, Kilgour et al. (2021) reported that cancer survivors were afraid of relapse during the pandemic due to the lack of prioritization of cancer patients and problems to access health care systems as before. Leach et al. (2021) found that cancer survivors worried about cancer care delays, catching an infection, and how Covid-19 would influence their remission.

The COVID-19 outbreak has caused to emerge anxiety, depression, post-traumatic stress disorder, and stress symptoms in the community. Globally, a vast majority of the society who have already chronic diseases, experienced fear of being alone, being unemployed, and catching an infection (Tee et al., 2020; Xiong et al., 2020). Especially, individuals with cancer, who were more vulnerable due to the risk factors; experienced uncertainty, isolation, health vulnerability, and loneliness during the pandemic (Nicolescu & Băban, 2021). In this regard, literature commonly expressed that cancer survivors were worried about the adverse health outcomes due to the pandemic (Leach et al., 2021; Wong et al., 2021). In a previous study, participating cancer survivors mentioned that they stocked the house, and they could only go for their check-ups (Seven et al., 2021). However, study results indicate the notable ability of cancer survivors to adapt to the pandemic-imposed limitations. In line with this result, Galica et al. (2021) reported that cancer survivors could adapt the pandemic period with strengths-based approaches. Numerous research participants claimed that society was overreacting to the temporary Covid-19 limits that are in place to save lives. Cancer survivors also stressed that they had very similar restrictions related to cancer, but this time all people have the same conditions, which helps them feel less isolated. Although this finding was unexpected, it led us to believe that many participating cancer survivors assessed their cancer-related restrictions experiences more convincing than Covid-19. Another factor can be the current health status of a cancer survivor, as they were unhealthy and suffering from cancer, so they can evaluate their preceding isolation processes struggling. Studies, however, revealed that during the epidemic,

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depression and anxiety symptoms of cancer survivors dramatically increased (Han et al., 2021; Schellekens & van der Lee, 2020). However, by promoting coping strategies that facilitate positive framing of negative and uncertain circumstances like a pandemic, cancer survivors can also develop psychological resilience (Nicolescu & Băban, 2021). Previous studies have stressed that with guidance and counseling on psychological support, cancer survivors may be adapted effectively to the pandemic (Frey et al., 2020; Spicer et al., 2020). Hao et al. (2020), found that communication with family members and friends provided psychological support and motivation to individuals with cancer during the pandemic. Therefore, future studies should consider the implementation of psychological support for cancer survivors and assess the impacts. Although participating cancer survivors believed they might defeat Covid-19, they were unsure if they could survive. These results relieved their uncertainty about the Covid-19 pandemic. Like the rest of the world, cancer survivors share many uncertainties, which might lead to ambivalence. Similarly, Young et al. (2020) also showed that cancer survivors described uncertainty about the Covid-19 pandemic and its future impacts on their lives.

Another significant finding of the study was how cancer survivors commonly equated their cancer experience with war, in which there are only two outcomes: fight or lose. Participants who had cancer said they used all of their all resources to cope with negative cognitions, which are repetitive and intrusive. Similarly, given the hardship of the cancer process, recent studies showed that Covid-19 predicts catastrophic cognitions among cancer survivors (Slivjak et al., 2021; Poort et al., 2021). Cancer survivors are catastrophizing related to Covid-19 (Öcalan & Üzar-Özçetin, 2021); the current findings suggest that cancer survivors who observe themselves as more vulnerable to Covid-19 may engage in greater catastrophic thinking connected to losing someone they love. On the other hand, cancer survivors attempt to suppress their ruminations with distracting activities. This ensures that cancer survivors might overcome intrusive thinking if they get support and care.

4.1 Strengths and Limitations

The study sample contained data from only Turkey and identified a small number of cancer survivors. Participating cancer survivors with different demographics (e.g., locations, cultures, etc.) might report different ruminations. However, this study is the first in the literature to overview the Covid-19 related ruminations of cancer survivors.

5 CONCLUSIONS

The findings underline the influence of ruminations in structuring one's life and perspectives toward experiencing cancer and the pandemic. The results revealed that cancer survivors have many ruminations about cancer and the pandemic, and they have a great ambivalence leading to ruminations about "how the pandemic can affect their life or whether they will survive despite the pandemic? In contrast, participating cancer survivors also have positive cognitions that they can handle the pandemic because of their previous struggling cancer experiences. Therefore, even in the pandemic, implementations fostering deliberate ruminations can be used in facilitating cancer survivors' adaptation to their post-cancer lives. Further studies on facilitating individuals' ruminative thinking are required to assist cancer survivors in better coping with adversity and adapting to it throughout their all-challenging experiences.

6 RELEVANCE FOR CLINICAL PRACTICE

The findings are relevant to oncology nurses as they are limitless caregivers. The potential consequences of ruminations on the psychosocial well-being of cancer survivors should be understood by oncology nurses. Although cancer survivors are in remission period and are less at risk than active patients, cancer survivors also have concerns about the pandemic. Therefore, oncology nurses should be aware of their influence on supporting cancer survivors. Additionally, it may help in the development of therapies that are specifically designed to address the needs of cancer survivors and help them enrich deliberate rumination.

Evidently, deliberate ruminations can help cancer survivors overcome negative cognitions, whereas intrusive ruminations make them vulnerable to distress. The findings might also offer a promising resource for oncology nurses to understand the ruminations of cancer survivors and develop their skills to provide supportive care. In this context, healthcare providers can develop novel approaches and interventions for cancer survivors. As a result, cancer survivors can gain insight into their ruminations and enable their thinking patterns to come to mind deliberately, making them control negative cognitions.

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Table 1. Themes and Subthemes

Welcome to my life	<i>Used to live in isolation</i>
	<i>Not feel lonely</i>
Cancer vs. Covid-19	<i>Whoever defeats cancer defeats Covid-19</i>
	<i>Not sure if I can survive</i>
Fight vs. Lose	<i>Repetitive cognitions</i>
	<i>Withstanding intrusive cognitions</i>

Table 2. Descriptive characteristics of the participants (n=33)

	<i>Mean</i>	<i>Min-max</i>
<i>Age</i>	49.8	25-72
<i>Duration Since Diagnosis (year)</i>	5.8	1-21
<i>Duration of Remission (year)</i>	4.5	1-21
	n	%
<i>Diagnosis</i>		
<i>Colon</i>	1	3.0
<i>Breast</i>	12	36.3
<i>Lymphoma</i>	3	9.0
<i>Leukemia</i>	1	3.0
<i>Myeloma</i>	4	12.1
<i>Lung</i>	2	6.0
<i>Rectum</i>	3	9.0
<i>Ovarian</i>	1	3.0
<i>Endometrial</i>	1	3.0
<i>Melanoma</i>	1	3.0
<i>Tongue</i>	1	3.0
<i>Cervix</i>	1	3.0
<i>Testicular</i>	1	3.0
<i>Salivary Gland</i>	1	3.0
<i>Gender</i>		
<i>Female</i>	23	69.6
<i>Male</i>	10	30.3
<i>Marital Status</i>		
<i>Single</i>	14	42.4
<i>Married</i>	19	57.5
<i>Catching COVID-19 Experience</i>		
<i>Yes</i>	2	6.0
<i>No</i>	31	93.9

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1. What were the thoughts that came to your mind frequently about the Covid-19 pandemic?
 2. What were the thoughts that came to your mind regarding your cancer experience when you first heard about the Covid-19 pandemic?
 3. What were the thoughts that came to your mind regarding your cancer experience when the restrictions due to the Covid-19 pandemic first started?
 4. What are your thoughts on the Covid-19 pandemic and the effects of restrictions on your life right now?
 5. Can you tell us about a memory related to your cancer experience in connection with the Covid-19 pandemic and restrictions, which affected you a lot and made you think about it often?
 6. When you had coronavirus, what were your frequent thoughts about your cancer experience at that time? (For those who have experienced Covid-19)
 7. As someone with cancer experience, what are your thoughts about having coronavirus? (For those who have not experienced Covid-19)
 8. How has the Covid-19 pandemic and restrictions impacted your concerns related to your cancer experience?

Figure 1. Interview guide