



The Effect of COVID-19 on Radiation Oncology Practice in Türkiye

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OBJECTIVE

COVID-19 (Coronavirus Disease-19) was the name given to a novel pneumonia outbreak that occurred in Wuhan (Hubei province, China) in December 2019. For patients undergoing or scheduled for radiation therapy, radiation oncology (RO) departments were required to adjust their management protocols to maintain their ability to provide optimal care. The present survey study assesses the change in the daily practices of Turkish radiation oncologists.

METHODS

An online questionnaire was developed in Google Forms and sent out to oncologists registered with the Turkish society for RO. A total of 98 radiation oncologists completed the online questionnaire after three reminders were sent to the recipients over the course of 1 week.

RESULTS

After the pandemic has started, 65% of radiation oncologists moved their wards and outpatient clinics to different hospital units, resulting in an approximate 70% decline in the delivery of patient services in RO. Since the beginning of the pandemic in Türkiye, 52% of radiation oncologists have not been assigned to services related to COVID-19. Around half of the radiation oncologists surveyed stated that they were shunned by the society due to fear of transmitting the COVID-19 infection.

CONCLUSION

Further studies are needed to steer the creation of new regulations related to radiation oncologists, to be applied in the event of such emergencies as the COVID-19 pandemic.

Keywords: COVID-19; professional practice; radiation oncologists.

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INTRODUCTION

Coronavirus Disease 19 (COVID-19) was the name given to a novel pneumonia that first emerged in Wuhan (Hubei province, China) in December 2019.[1] Shortly after, the virus was isolated and associated with the severe acute respiratory syndrome coronavirus

(SARS-CoV) and was given the name SARS-CoV-2. Like SARS-CoV-1 and MERS-CoV (Middle East respiratory syndrome coronavirus), this virus is transmitted primarily through aerosols in poorly ventilated areas. [2] Coronaviruses are named after the “Corona” spikes produced by the S glycoprotein protruding into the viral capsid, and this protein is responsible for binding

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to the host receptor angiotensin-converting enzyme 2 (ACE2).[3] The most commonly reported symptoms are fever, cough, and shortness of breath, while the leading cause of death is acute respiratory distress syndrome, myocardial damage, and renal failure.[1,4] ACE2 receptors are present in many tissues, including the cornea, nose, lungs, esophagus, heart, stomach, liver, ileum, colon, gallbladder, kidneys, and testes.[5] A recent study has reported increased ACE2 expression in the lungs with age, and it has been noted that individuals over the age of 60 years and/or older adults with weakened immune systems are highly susceptible to COVID-19.[6] Since cancer is more common in the older adult population, and ACE2 expression increases with age, cancer patients are more likely to experience severe symptoms when infected with SARS-CoV-2.[7]

To ensure the continued access of cancer patients to effective treatment and care, healthcare workers over the world have changed the way they work due to mitigate the risk of COVID-19 infection.[8] Several organizations have conducted surveys to assess changes in practices during the pandemic and strategies for coping with the rapid daily changes.[9] Difficulties in the provision of cancer care have been reported recently in many countries.[10] Cancer patients are one of the most vulnerable groups due to their occasional at-risk clinical conditions and ongoing treatments.[11-13] For patients undergoing or scheduled for radiation therapy, radiation oncology (RO) departments have adjusted their management protocols to maintain their ability to provide optimal care to all patients.[13] The American Society for RO (ASTRO) surveyed more than 500 physician heads of departments in the United States to understand the impact of the pandemic, and to identify the changes implemented to cope with them.[14] and the same questionnaire was used also by the European society for radiotherapy and oncology (ESTRO) for a similar survey.

Organizations working in the oncological field have published specific patient care guidelines for both ancillary and palliative care.[15,16] TR Ministry of Health and Ministry of Interior announced to the public the personal protective measures (hand hygiene, respiratory hygiene rules), environmental precautions, physical distance measures, and travel-related precautions and restrictions to be applied.[17] During the pandemic, radiotherapy clinics have had to face the unique challenge of maintaining a virus-free environment for both the patients and staff while continuing to provide uninterrupted treatment. The ministry of health made the decision to postpone all elective surgeries and to reassign outpatient clinics and inpatient

wards for COVID-19 patients, along with the associated hospital staff. Although most hospitals with radiotherapy units were declared COVID-19 referral hospitals, it was decided to continue with the provision of cancer treatments without interruption, and on April 14, 2020, the ministry of health announced that oncology department personnel should not be reassigned to COVID-19 units.[18]

Cancer patients are at a greater risk of developing severe symptoms of COVID-19, and therefore, the entire clinical decision-making process for oncological care is under revision, with the aim being to balance the risk-benefit for each treatment delivered to patients. This necessitates a significant restructuring of the safety measures affecting the operational processes of healthcare workers, including radiation oncologists, and it is believed that this will have practical and psychological consequences for both cancer patients and healthcare workers.[19]

While there have been several studies assessing the changes in cancer treatment after the start of COVID-19 pandemic, no study has been conducted to date from the point of view of the physicians. In this survey study, we assess the changes in the daily practices of Turkish radiation oncologists.

MATERIALS AND METHODS

Study Participants

An online questionnaire was developed through Google Forms and sent out to oncologists registered with the Turkish society for RO (TROD), with three reminders sent out to the participants over the course of a week. No gifts or payments were made to the study participants, and participation was voluntarily.

Statistics

The study was carried out following the principles of the Declaration of Helsinki and all applicable regulations. No statistical analyses were performed.

Descriptive data were presented as mean or median values for continuous variables, and frequencies and percentages for categorical variables.

Ethics

The study was approved by both the Turkish Ministry of Health and the Ethics Committee at Eskişehir Technical University Social and Human Sciences Scientific Research and Publication Ethics Committee (May 05, 2022-70094) and carried out by the Declaration of Helsinki principles and all applicable regulations.

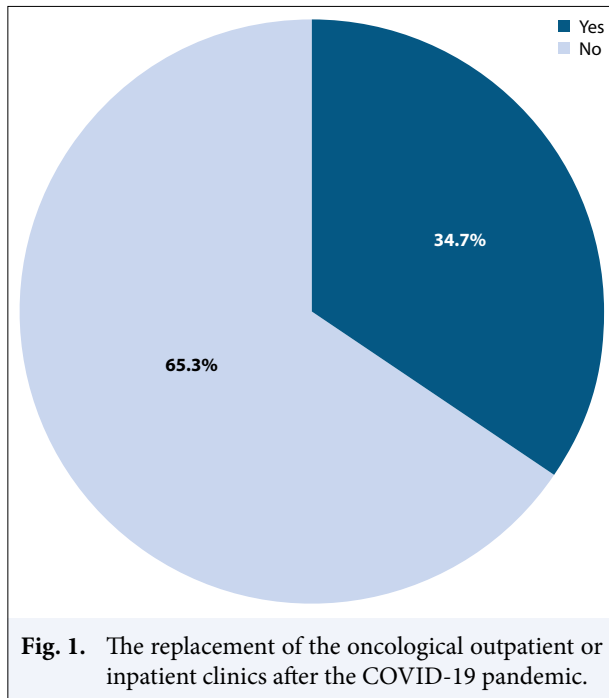


Fig. 1. The replacement of the oncological outpatient or inpatient clinics after the COVID-19 pandemic.

RESULTS

Of the recipients, 98 radiation oncologists completed the online questionnaire, more than half of whom were working in training and research public hospitals, followed by those working in university hospitals. Approximately 72% of the respondents were specialists and residents.

Following the first recorded case in Türkiye, 69% of radiation oncologists stated that additional measures were taken regarding COVID-19 in their outpatient clinics, wards, and radiotherapy units. In the pandemic, the clinics, and outpatient clinics, where 35% of the radiation oncologists' patients were hospitalized and treated were moved to different parts of the hospital. This has resulted in approximately 70% worsening of RO patient (Fig. 1). Since the beginning of the pandemic in Türkiye, 52% of radiation oncologists have not been assigned to services related to COVID-19. Following the circular of the TR Ministry of Health on Medical Oncology-Hematology-RO physicians, this rate increased to 75%. However, despite this circular of the Ministry of Health, 60% of radiation oncologists stated that they continued to work in COVID-19 services due to pressure from the hospital management and 12%, because the Ministry had forbidden their right to resign or take medical leave. Nearly half of the respondents stated that radiotherapy and inpatient services had been disrupted as a result of their transfer

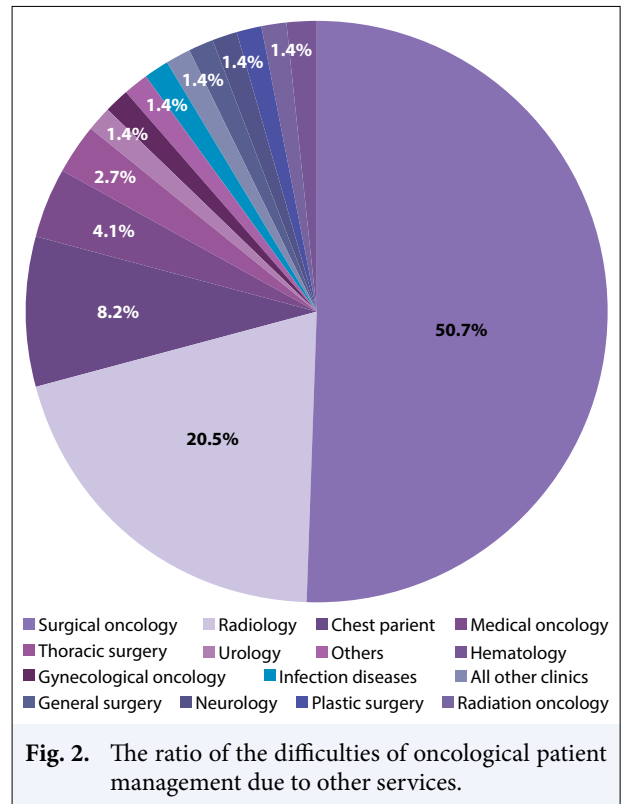


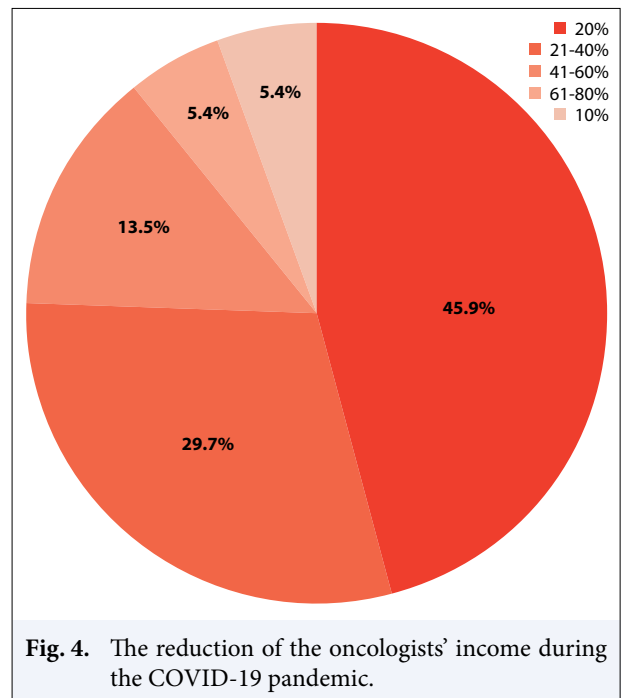
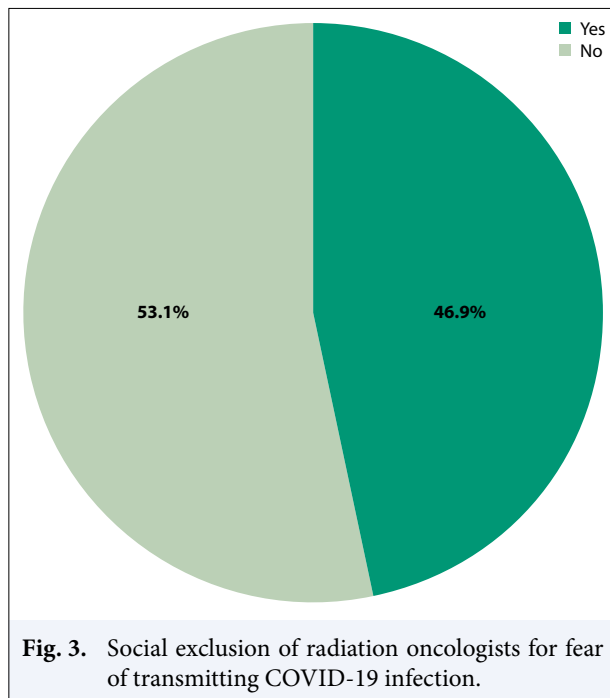
Fig. 2. The ratio of the difficulties of oncological patient management due to other services.

to other services. During the provision of COVID-19 services, no radiation oncologist cross-infected their patients.

In this period, 75% of the respondents stated that patient management in their department had deteriorated due to the reassignment of physicians to other clinics to provide COVID-19-related care. The clinics affected most were surgical oncology and radiology, respectively (Fig. 2). Some 23% of the respondents said that they had had to refer their patients to other RO centers. Around half of the radiation oncologists surveyed stated that they were shunned by the society due to fear of transmitting the COVID-19 infection (Fig. 3). Some 39% of radiation oncologists reported a loss of income, with the majority reporting an income loss of 20%, while others reported losses in the 21-40% range (Fig. 4). Only five radiation oncologists stated that they received psychiatric or psychological support during this period.

DISCUSSION

The present study reveals that oncology services have been interrupted due to the regulations applied by the Turkish Ministry of Health and local hospital administrations during the COVID-19 pandemic. More



specifically, the daily oncological treatment practices of radiation oncologists have been severely disrupted, and patients have experienced a decline in access to treatment in this period.

This study has shown further that radiation oncologists have encountered problems in patient management since the onset of the COVID-19 pandemic, although the TROD immediately got involved once the virus reached Türkiye and cooperated with the Ministry of Health. TROD kept its members informed through regular announcements, developed guidelines for the management of radiotherapy departments, and provided recommendations for region-specific treatment modifications. Almost all RO departments followed the TROD recommendations, as well as other international guidelines (ESTRO, ASTRO) in regard to changes in treatment during the COVID-19 pandemic. [18] As a result of these regulations, radiation oncologists were able to make progress in patient management.

On the delayed decision of the Ministry of Health, radiation oncologists returned to work in their own departments, although it would seem some of those working in public hospitals may have experienced mobbing, or to have been compelled to work in COVID-19 clinics due to financial concerns, as the decline in income associated with the pandemic may have also been a factor for some radiation oncologists. Another reason for having to work in COVID-19 clinics may have been the

ban issued by the Ministry of Health on the rights of all physicians to resign or to take medical leave. The fact that many radiation oncologists required psychological support can be explained by these prohibitions and the society's negative distancing from physicians. A study by Romeo et al.[19] reported that all health-care providers, as well as cancer patients, reported a need for support after experiencing psychological distress, faced difficulties in changing their personal cognitive beliefs, or were affected by a lack of social support.

Recent studies have shown adherence to chemotherapy to have been impaired by the fear of COVID-19 and COVID-19 regulations.[10,20] Some RO departments temporarily closed their radiotherapy units, as most radiation oncologists were infected with COVID-19 during the early pandemic.[21] A study by Filippi et al.[22] showed that the Italian health-care system and radiation therapy facilities were overwhelmed by the emergency. In the present study, the referral of oncology patients to other RO departments may result from these issues.

In the long term, the motivation of radiation oncologists may be reduced as a result of their increased workload. Another problem faced by oncology patient management was the loss of multidisciplinary patient management due to the difficulty in scheduling surgery and other oncology-related departments.

An emergency plan regulation for radiation oncologists may be necessary to ensure the maintenance

of cancer treatment management in the event of emergencies such as pandemics.

CONCLUSION

Although radiation oncologists tolerate oncological patient management changes, the prolonged pandemic may have a marked effect on the motivation of oncologists and may be detrimental to their multidisciplinary patient management practices. Further studies are needed to establish new regulations for radiation oncologists in emergencies such as the COVID-19 pandemic.

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Ethics Committee Approval: The study was approved by the Eskişehir Technical University Social and Human Sciences Scientific Research and Publication Ethics Committee (no: 70094, date: 05/05/2022).

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