

Perception of the Impact of COVID-19 Pandemics on Cancer Patients

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Abstract

Purpose: Significant changes in treatment centers were implemented during COVID-19 pandemics. Understanding how these alterations impacted cancer patients is a subject that needs to be investigated.

Methods: Patients who accepted to fill a hand paper questionnaire were included in this cross-sectional study. The questionnaire was distributed between March 19 and April 30, 2020 (first emergency state in Portugal) at the Portuguese Oncology Institute of Coimbra Francisco Gentil.

Results: A total of 100 patients participated in the study, of whom 66% were female. The median age was 61 years old. Patients presented low education levels (65% with 9 or less years of schooling), lived together (83%) and were undergoing palliative treatments (59%). The most significant reported change in health care was inability of having an accompanying person in medical appointments (64%). Association with the level of education, household, type of solid cancer or therapeutic purpose was not verified (Cramer-V-indicator <0.4). The major concerns reported were being infected by SARS-Cov-2 due to an immunosuppressed state (65%) and the security of self/family/friends (53%). Patients with lower education were more worried about developing COVID-19 ($p=0.001$) and of having limited access to medical care ($p=0.047$). Patients in a curative therapeutic approach were more concerned about employment situation ($p=0.031$) and had higher anxiety levels ($p=0.047$).

Conclusion: COVID-19 pandemic is having a great impact in patients with cancer, namely in those who have a lower education level, live alone or those who therapeutic approach is curative. The implementation of measures to manage the psychologic impact of COVID-19 is urgent.

Keywords: COVID-19 pandemic • Cancer care • SARS-CoV2 • Psychosocial impact

Introduction

COVID-19 pandemic counts with more than 500 million confirmed cases worldwide, with over 4.5 million cumulative infections and 23 000 cumulative deaths in Portugal as of May 2022 [1]. Undoubtedly, throughout this unprecedented global pandemic, significant changes in treatment centers were implemented in part to prevent overcrowding and avoid further viral propagation [2]. Screening programs and routine visits were postponed and non-emergency hospitalization and access to physicians were reduced [3]. Furthermore, the fear of contracting the coronavirus in health care settings has dissuaded people from screening, diagnosis, and treatment for non-COVID-19 diseases [4]. As such, this new reality led to an increase in the stage of the disease observed, to weaker prognosis and higher mortality, and ultimately to disturbance on patients' psychological health [5–7].

Cancer care was no exception. As a consequence of diagnostic delays due to the COVID-19 pandemic, a substantial increase in the number of avoidable cancer deaths is expected [8–10]. Indeed, over the next decade, it is estimated that almost 10 000 excess deaths from breast and colorectal cancer deaths will occur [10]. By itself, a cancer diagnosis can lead to anxiety,

fear, and feelings of uncertainty about treatment options and prognosis. As cancer patients are more likely to contract COVID-19 and experience severe complications, these additional concerns about the risk of COVID-19 infection and serious disease magnifies the psychological impact of this new disease [11–13]. Furthermore, significant disruptions were verified in cancer care with changes to treatment plans, such as longer intervals between treatments or switching to oral chemotherapy [14]. Multidisciplinary team approaches become more difficult due to social distancing policies which, in addition, to the increase of telehealth, significantly impact how patients interact with their cancer care providers [15].

To date, no study has been conducted to assess patient concerns regarding the COVID-19 healthcare system alterations during the first mandatory lockdown in Portugal. Understanding these concerns and the precise impact on cancer care may help to perform a patient-centered care, improving patient's counselling, therapy planning, and the quality of health services provided. Thereby, this study intended to evaluate the perception of the impact of COVID-19 pandemic on cancer patients, namely on the psychosocial domain. For that, a survey was conducted in a Portuguese cancer center.

Materials and Methods

Study design and participants

This is a single center, cross-sectional study where a hand paper questionnaire was filled by cancer patients who had an oncology appointment. Participants had to be 18 years of age or older and be able to read in Portuguese. The questionnaire was distributed between March 19 and April 30, 2020, a period which coincided with the first emergency state in Portugal. The study was developed at the Portuguese Oncology Institute of Coimbra Francisco Gentil, an oncological hospital located in central Portugal. The study was approved by the local Ethics Committee, and an informed and enlightened consent was signed by all the participants.

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Study assessment and outcome measures

A close-ended questionnaire was developed, and it was constituted of four domains, with the first domain assessing socio-demographic characteristics, such as age, sex, marital status, education, and number of persons belonging to household. The second domain evaluated which alterations in healthcare services were noticed during the first emergency state in Portugal. The third domain rated the levels of worries regarding questions such as contracting COVID-19 easily due to immunosuppression, restructuring of clinics, visitor restrictions, and patient limitations regarding surveillance visits, cancellation of elective and delaying semi-elective surgeries, and restrictions to physical exercise and other outside activities. The last domain included questions regarding experienced mental health during the COVID-19 pandemic such as the experience of increased symptoms of anxiety, sadness, levels of stress, and anger. Questionnaires were subsequently subjected to quality control and manual verification procedures to exclude those which were incomplete and/or incorrectly filled.

Statistical analysis

Categorical variables were presented by means of frequency tables. Distribution differences between categorical variables were explored with Cramer's V or Kruskal-Wallis's test. A $p < 0.05$ was considered statistically significant. The dataset was analyzed using the Statistical Package for the Social Sciences (SPSS®) version 23.

Table 1. Patient's sociodemographic and clinical characteristics. Total number of participants: 100.

Age, mean [min-max]	61 [29-89]
Gender, %	
Male	44
Female	66
Education, %	
Elementary (4 years of schooling)	45
Middle (9 years of schooling)	20
Secondary (12 years of schooling)	16
University or above (more than 12 years of schooling)	19
Number of people in household, %	
0	17
≥1	83
Type of primary tumour, %	
Breast	43
Digestive	38
Lung	13
Others	6
Therapeutic purpose, %	
Curative	37
Palliative	63

Results

Study population

A total of 100 patients participated in the study, of whom 66% were female. The mean age of patients was 61 years old, ranging from 29 to 89 years old. The participants presented a low educational level (9 or less years of schooling=60%) and the most common cancers observed were breast

(43%), colorectal (38%), and lung cancer (13%) with the majority undergoing palliative treatment (59%). Only 17% of the included patients lived alone. Patients' socio-demographics are shown in Table 1.

Perception of the impact of COVID-19 pandemic in healthcare services

The reported changes in health care were inability of having an accompanying person in medical appointments (64%), difficulty to access primary health care centers (26%) and postponed medical appointments (22%). No perceived impact was reported regarding alteration in the type or time between oncologic treatments or in the facility to obtain medicines in pharmacies during COVID-19. No associations were verified between the perceived alteration with the level of education, household, type of solid cancer or therapeutic purpose (Creamer-V-indicator<0,4).

Emotional health and COVID-19 experience and concerns

The major worries/concerns observed, leveled with 5 in a 0 to 5 scale, were being infected by SARS-Co-2 due to an immunosuppressed state (65%), security of self/family/friends (53%), fear of not having access to hospital care in case of developing severe symptoms of COVID-19 (42%). Patients with lower education (9 or less years of schooling) were more worried about developing COVID-19 ($p=0.001$) and of having limited access to medical care ($p=0.047$). Patients in a curative therapeutic approach were more concerned about the employment situation ($p=0.031$) and had higher anxiety levels ($p=0.047$). Those who lived alone felt a faster progression of their cancer ($p=0.029$) and felt alone ($p=0.032$).

Discussion

COVID-19 pandemics has brought significant alteration to healthcare systems which transversally affect all types of diseases' management with severe psychological effects defined as alterations on worries and mood [5–7]. Although cancer care/treatment in the different centers or departments was not stopped during national lockdown, this imposition caused profound alterations in the system dynamics which may have induced delays in cancer diagnosis and treatment. Nevertheless, in contrast with our expectations, cancer patients who participated in this study only strongly noticed the inability of having an accompanying person in medical appointments. Importantly, the vast majority of patients in this study remained confident in their treatment plan, did not perceive any significant differences in care delays and had no difficulty obtaining medicines in pharmacies during the first lockdown. These results might indicate that the decreased affluence to hospitals and patient triaging could have helped the providers to focus and care more efficiently for those who are still coming to clinics [4]. In fact, in Portugal, there was a 40% reduction in the number of breast cancer patients during lockdown [16].

Fear of COVID-19 infection was by far the most represented worry reported in this study followed by concerns about self-security and the wellbeing of others, such as friends or family member. These results are in line with previous observations, where the majority of the patients (more than 60% of the studied population) expressed fears about contracting the virus [17–19].

Associations between the sociodemographic variables and major concerns strongly vary across studies [20]. Within the population studied, those with low levels of education expressed elevated levels of fear of contracting COVID-19. Although there are inconsistencies, studies pointed out health literacy as an effective tool in management and health outcomes [21–23]. Due to the novelty of the COVID-19 virus, detailed information about the mode of transmission of the virus, signs, and symptoms, and how to effectively apply protective measures might help to mitigate the anxiety and fears even in low educated populations.

Patients whose therapeutic approach is curative were more likely to report

increased anxiety levels and concerns about job loss. These findings suggest that stronger protective social measures should be implemented to combat this potentially catastrophic indirect result of COVID-19. As unemployment aggravates the psychological consequences of diseases [24], interventions need to focus on both physical and mental health.

In addition, patients who lived alone were more prone to feel loneliness and anxious about cancer progression. Studies conducted in different countries such as the United Kingdom, the United States of America, Spain and Singapore, also found that living alone increased the feelings of loneliness, an important condition which affects both the mental and physical wellbeing of a person [25–27]. In this way, adequate social support and interpersonal contacts are of greatest importance to one's health, in particularly during a global pandemic [28].

Despite the worries, cancer participants appeared to have efficiently coped with the unpredictable nature of the first wave of COVID-19 pandemic, maintaining a positive attitude towards an unknown situation. This fact might be partially justified as only patients with oncology appointments who did go to them responded to the survey. The patients who were self-electing to postpone or cancel their cancer appointments and treatment, probably more worried about getting infected with COVID-19 and developing severe complications were not included in this study.

The findings of this study should be considered in light of some limitations. First, the small sample size. Then, the cross-sectional design of the study, besides not allowing extrapolation to big populations, only collects the data at a single moment in time. As the pandemic and associated psychosocial impacts continuously evolve, it was not possible to ascertain the long-term impact of the pandemic and the impact on mental health. Nevertheless, to the best of our knowledge, this study is the first cross-sectional survey in oncology patients to assess the impact of the COVID-19 pandemic in Portugal.

Conclusion

COVID-19 pandemic is having a great impact in patients with cancer, namely in those who have a lower education level, live alone or those whose therapeutic approach is curative. The preliminary results strengthened the warning for a greater attention to these cancer patients' groups. The implementation of a psychological approach to prevent fear of COVID-19 infection is imperative to support continuous and efficient healthcare for oncology patients, improving treatment compliance and prognosis.

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Conflicts of Interest

The authors declare that they have no conflict of interest.

Availability of Data and Material

For any data or certificate requests, please contact the corresponding author.

Code Availability

Not applicable.

Author's Contribution

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Mariana Rebordao Pires, Adriana Pestana-Santos, Claudia Amorim Costa, Ana Carlota Caetano, Joana C. Monteiro. Supervision was performed by Antonio Pego and Gabriela Sousa. The first draft of the manuscript was written by Mariana Rebordao Pires and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Ethics Approval

The study was extensively reviewed and subsequently approved by the Ethics Committee of the Portuguese Oncology Institute of Coimbra Francisco Gentil and conducted in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Consent to Participate

Informed consent was obtained and signed from all subjects involved in the study.

Consent for Publication

Not applicable.

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