RESEARCH ARTICLE

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# Exploring Burnout Trends: A Longitudinal Comparative Study of Lebanese Oncologists in Response to Socioeconomic and Pandemic Challenges

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## Abstract

**Introduction:** Occupational Burnout involves a prolonged state of stress in the workplace. Healthcare workers, particularly oncologists, are highly susceptible to burnout. **Methods:** The study conducted over a 3-month period among Lebanese oncologists through an online survey comprising two sections: one collecting socio-demographic and work-related data, and the other assessing burnout using the Maslach Burnout Inventory (MBI). **Results:** The study surveyed 48 out of 65 oncologists working at hospitals in Lebanon. The majority were male, over 45 years old, and specialized in medical oncology. Economic challenges during the pandemic impacted oncologists, with a majority experiencing income decreases and expressing dissatisfaction with compensation. Emotional exhaustion and depersonalization significantly increased while the sense of personal accomplishment decreased among oncologists from 2018 to 2023, indicating a rise in burnout prevalence. **Discussion:** The prevalence of burnout among Lebanese oncologists hit a high levels, reflecting systemic issues within the Lebanese healthcare system and the impact of traumatic events. Age, work environment, and financial stability emerge as key factors influencing burnout and job satisfaction among oncologists. Hence, highlighting the intricate relationship between economic challenges and mental well-being in healthcare professionals. **Conclusion:** The study highlights a notable increase in burnout levels among Lebanese oncologists, attributed to systemic challenges, economic collapse, COVID-19 pandemic, and the Beirut blast.

**Keywords:** Lebanese Oncologists- Burnout- Economic Collapse- Beirut Blast- Covid-19 Pandemic

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## Introduction

In 1969, H. Bradley first introduced the term "burnout," and Herbert Freudenberger (1974) later defined it as "a prolonged state of frustration and stress in the workplace resulting from unmanaged professional relationships failing to provide expected rewards" [1]. Burnout involves both physical and cognitive breakdown. Maslach identified three components of burnout: emotional exhaustion (EE), personal accomplishment (PA), and depersonalization (DP) [2]. Emotional exhaustion is the inability to express sincere emotions, while depersonalization involves excessive detachment from the environment, leading to skepticism and pessimism [2]. Personal accomplishment involves negative self-evaluation. Individuals become dissatisfied with their professional achievements and personal outcomes [2]. Burnout syndrome (BOS) is diagnosed by elevated levels of emotional exhaustion and depersonalization, along with low levels of personal accomplishment [2].

Healthcare workers are at a high risk of developing burnout syndrome (BOS). This is due to long and demanding working hours, exhaustion, and the intense environment of their workplace [3]. Physician burnout is a serious global health issue that requires comprehensive investigation. In 2018, 78% of American doctors reported burnout, and in 2019, 80% of physicians affiliated with the British Medical Association showed high or extremely high levels of burnout [3]. Healthcare workers are constantly in contact with patients, addressing their physical and psychological needs, which can lead to the development of intense staff-patient relationships. Often, healthcare workers, especially physicians, prioritize their patients' needs over their own by working longer hours to provide the needed emotional support. This can be emotionally and physically draining and predispose them to physical and mental burnout.

Physician burnout is associated with decreased quality of patient care, higher risk of medical errors, and an increased likelihood of patient safety incidents [2, 4]. Detecting burnout in physicians early is important because it can affect patient care, hinder professional success, and

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make physicians more susceptible to errors in medical judgment [4]. Although burnout is widespread among medical specialties, it is most common among oncologists, who frequently care for terminally ill patients, leading to high stress levels and potential psychological impact [5]. Oncologists rank 11th in terms of earnings among medical specialties, with an average annual salary that varies from $100,000 to $400,000 based on factors such as experience, location, and subspecialty [6, 7]. There is a lack of statistical data regarding the annual salaries of oncologists in Lebanon.

The Covid-19 outbreak further exacerbated the burnout phenomenon among healthcare providers [8]. The healthcare system was compelled to introduce appropriate strategies to fight the pandemic [9] .Oncologists were significantly impacted by the pandemic [10] . They were under pressure to implement new treatment guidelines to provide optimal cancer care within a healthcare system strained by a medical emergency [11, 12]. They had to take into account the risks posed by the virus to the cancer patients and operate in an unpredictable environment with limited medical resources [11, 12].

In 2018, our research team used the Maslach Burnout Inventory (MBI) to determine the prevalence of burnout syndrome among 51 Lebanese oncologists. The findings revealed that 47.1% of the oncologists experienced high levels of burnout in at least one domain. Among participated oncologists 33.3% reporting high emotional exhaustion scores, 13.7% with high Depersonalization scores, and 19.6% exhibiting low personal accomplishment [13].

Over the past three years, Lebanon has encountered a range of significant challenges, such as the COVID-19 pandemic, economic downturn, currency hyperinflation, the 2020 Beirut port explosion, shortages of vital medications and medical supplies, and the departure of medical professionals. On August 4, 2020, a massive explosion destroyed a huge part of Beirut, leading to extensive destruction of the city's healthcare system [14]. The blast resulted in 207 fatalities, injured over 6,500 people, and displaced more than 300,000 residents [15]. It critically damaged four main hospitals and over 20 primary care centers that served approximately 160,000 patients, leaving half of Beirut's healthcare facilities nonfunctional [16]. The explosion also disrupted 163 schools and forced many businesses to shut down, impacting 56% of private enterprises and causing economic losses estimated between $2.9 billion and $3.5 billion [15, 17]. In addition, critical infrastructure such as transportation, energy, water supply, and municipal services suffered significant damage, worsening Lebanon's ongoing crises and further straining public health efforts [18].

Our current research aims to assess the prevalence of burnout among Lebanese oncologists in 2023 and compare the results to our previous data. Additionally, we seek to explore potential risk factors such as the economic crisis, post-COVID challenges, PTSD following the Beirut blast, and their potential impact on the findings.

## Materials and Methods

The study was conducted over a 3-month period among medical, radiation, and surgical oncologists working at Lebanese hospitals. All practicing oncologists in Lebanon were contacted through a list generated by the Lebanese Society of Medical Oncology. The study protocol was approved by the ethical committee of the American University of Beirut (AUB). All participants provided consent before completing the survey.

*Study Instrument*

The study involved oncologists completing an online survey which was split into two sections. The first part gathered socio-demographic and work-related information, while the second part focused on the Maslach Burnout Inventory- Human Service survey (MBI) tailored for doctors. The first part collected data on gender, marital status, age, specialty, hospital type, years in profession, daily patient load, weekly working hours, experience in COVID-19 settings, monthly night shifts, satisfaction with salary, career security, stress relief methods, and work conditions. The second part included twenty-two questions, it assess Emotional Exhaustion (EE) (9 items), Depersonalization (DP) (5 items), and Personal Accomplishment (PA) (8 items). Each item was rated on a 6-point Likert scale from 0 (never) to 6 (daily). The scores for the three subscales were calculated by adding the individual items. Then, oncologists were categorized as having low, moderate, or high burnout based on their scores. The burnout categories were defined as follows: For EE, low (<16), moderate (17-26), and high (>27). For DP, low (<6), moderate (7-12), and high (>13). For PA, low (<30), moderate (31-36), and high (>37) (Maslach and Jackson, 1981). The survey was conducted in English.

*Statistical Analysis*

The gathered data was coded and analyzed using the IBM SPSS software version 24.0 (SPSS Inc., Chicago, IL, USA). We calculated relevant descriptive statistics to summarize the demographic and work-related characteristics of our sample. We used X2 or Fischer Exact test to examine the associations between demographic variables and the results of the Maslach Burnout Inventory- Human Service survey (MBI) for categorical variables. All tests were two-sided, and a p-value of less than 0.05 was considered significant.

## Results

Out of 65 oncologists currently working at Lebanese hospitals, 48 participated in this survey (73% response rate). Table 1 presents a summary of the demographic and employment characteristics of the participants in our study. The majority of oncologists participated in the study were male (66.6%), aged over 45 (60.5%), married (58.3%), with a specialization in medical oncology (91.7%).They had more than 10 years of experience ( 60.5% ), saw fewer than 20 patients per day, worked less than 55 hours per week (79.2%), and had less than 3 night shifts per week (68.8%).

One of our secondary objectives was to investigate the impact of the Covid-19 pandemic and economic downturn on oncologists in Lebanon. Table 2 outlines

Table 1. Demographics and Work Characteristics N=48

| Characteristics | N (%) |
|---|---|
| Gender : | |
| Male | 32 ( 66.6) |
| Female | 16 (33.3) |
| Age | |
| Up to 45 years | 19 ( 39.5) |
| 45 and older | 29 (60.5) |
| Marital Status : | |
| Single , widowed, Divorced | 20 (41.7) |
| Married | 28 ( 58.3) |
| Specialty | |
| Medical Oncologist | 44 (91.7) |
| Radiation Oncologist | 4 (8.3) |
| Years in profession: | |
| Attending in practice for less 10 years | 19 (39.5) |
| Attending in practice for more than 10 years | 29 (60.5) |
| Number of patients seen daily: | |
| Less than 20 patients | 32 (66.7) |
| More than 20 patients | 16 (33.3) |
| Working hours weekly: | |
| Less than 55 hours | 38 (79.2) |
| More than 55 hours | 10 (20.8) |
| Number of night shifts per month: | |
| 0-3 | 33 (68.8) |
| 3 and above | 15 (31.3) |

Table 2. Economic and Social Characteristics N=48

| Characteristics | N (%) | |
|---|---|---|
| Witnessed a pay cut during the economic crisis for oncologists of more than 5 years in practice | 39 (82) | |
| Estimate your income after the pay cut in comparison to 2019 (current income/income in 2019) x 100) | Less than 30% | 15 (38.5) |
| | More than 30% | 24 (61.5) |
| Paid adequately in regards to the amount of hours you work | 9 (19.4) | |
| Month salary is enough to cover expenses | 18 (37.5) | |
| Feel safe regarding future career | 13 ( 28.2) | |
| Feel worried about losing Job | 34 ( 71.8) | |
| Have proper Way to relieve stress | 18(37.5) | |
| Satisfied with the annual leave | 13 ( 26) | |
| Work in conditions where there was a shortage of medical resources | 35 ( 72) | |
| Feel uncomfortable working in the hospital | 23( 47.9) | |
| Consider Moving Abroad | 37 ( 78.2) | |

the demographic and economic characteristics of the oncologists who participated in the survey. The findings revealed that during the economic crisis, 82 % of the 48 oncologists experienced a decrease in their income, with 61.5% of them facing reductions of more than 30%. Furthermore, 80.6 % of the oncologists expressed dissatisfaction with their compensation, and 62.5% reported that their monthly salary did not adequately cover their expenses. A significant portion (74%) felt that they did not have enough annual leave, and 72% reported working in environments with limited medical resources. Additionally, 54.2% felt confident about their future career visions, while 78.2% were contemplating relocating to

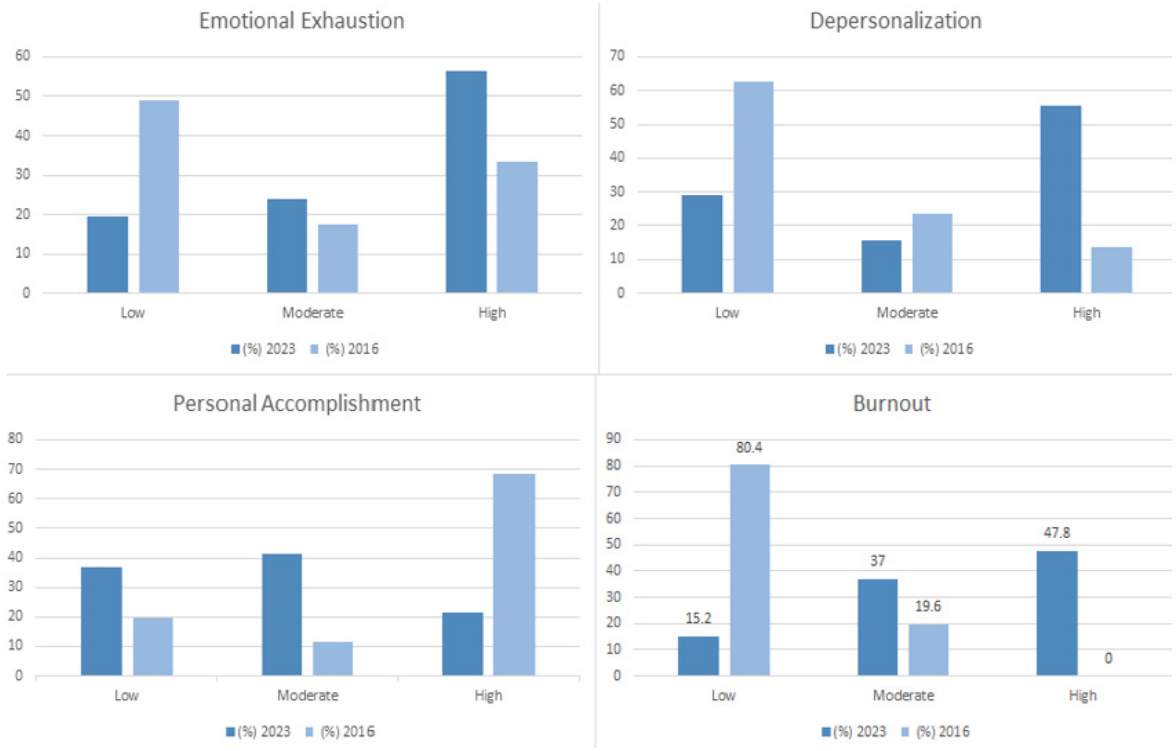


Figure 1. Prevalence of Burnout Based of the Maslach Burnout Inventory – Human Service Survey 2023 (N=48) in comparison to 2018 (N=51)

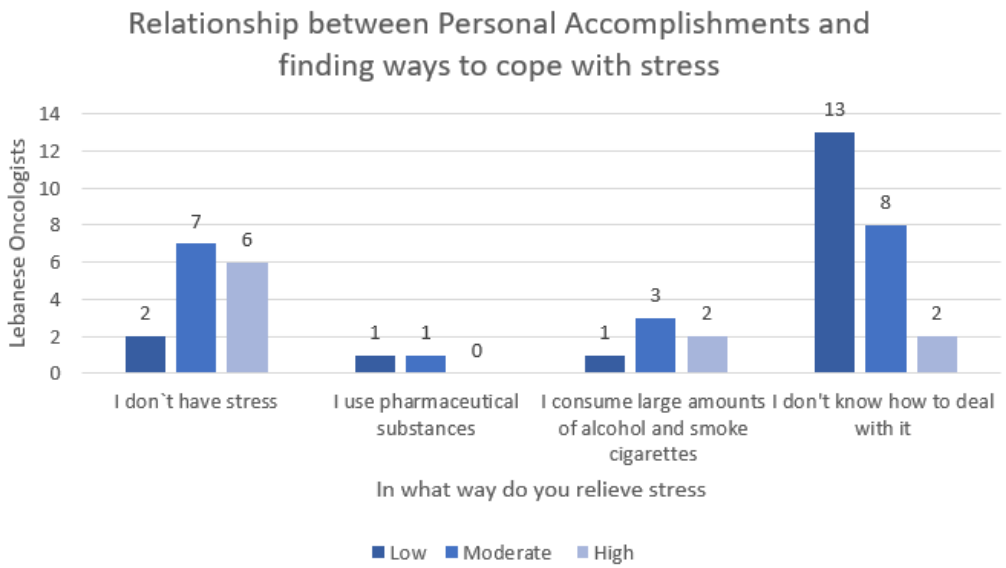


Figure 2. Correlation between Personal Accomplishment and Finding Ways to Cope with Stress

Table 3. Correlation between Emotional Exhaustion and Different Demographic Factors

| Characteristics | | Emotional Exhaustion | | | P Value |
|---|---|---|---|---|---|
| | | Low (%) | Moderate (%) | High (%) | |
| Age | < 45 years | 2.2 | 17.4 | 19.6 | 0.017 |
| | > 45 years | 17.4 | 6.5 | 36.9 | |
| Years in professions | < 10 years | 2.2 | 17.4 | 19.6 | 0.017 |
| | > 10 years | 17.4 | 6.5 | 36.9 | |
| Paid Adequately | Yes | 8.6 | 6.5 | 4.3 | 0.027 |
| | No | 10.8 | 17.4 | 52.2 | |
| Enough Annual Leave | Yes | 15.2 | 4.3 | 6.5 | 0.01 |
| | No | 4.3 | 19.5 | 50.2 | |
| Worried about Losing Job | Yes | 6.5 | 21.7 | 43.6 | 0.017 |
| | No | 13 | 2.2 | 13 | |
| Work in conditions where there was a shortage in medical Supplies | Yes | 10.9 | 10.9 | 50 .2 | 0.01 |
| | No | 8.5 | 13 | 6.5 | |

another country. Of the oncologists surveyed, 70.9% expressed concerns about potential job loss. Furthermore, 47.9% reported uncertainty about how to alleviate their stress.

Out of the 48 oncologists, 56.5% displayed high levels of emotional exhaustion, 55.6% showed high levels of depersonalization, and 37% exhibited low levels of personal accomplishment. In 2023, there was a notable increase in emotional exhaustion, with 56.5% reporting high levels compared to only 33.3% in 2018. Based on the data, there was a significant increase in high depersonalization among Lebanese oncologists, rising from 13.7% in 2018 to 55.6% in 2023. In 2023, there was a major increase in the percentage of oncologists reporting low personal accomplishment, rising to 37% from 19.6% in 2018. There has been a significant increase in the prevalence of burnout among Lebanese oncologists from 2018 to 2023. The percentage of oncologists reporting low levels of burnout has decreased significantly from 80.4% in 2018 to 15.2% in 2023. Conversely, there has been a substantial increase in the proportion of oncologists experiencing high levels of burnout, rising from 0% in 2018 to 47.8% in 2023. The results are summarized in Figure 1.

*Correlation between emotional exhaustion and different demographic factors*

Higher levels of Emotional Exhaustion were reported in Oncologist with older age and more years in practice (P =0.017), as well as those feeling not adequately compensated (P = 0.027), worried about their job security (P =0.017), lack sufficient annual leave (P = 0.01) and those with limited medical resources (P = 0.01). Among oncologists aged 45 and above with over ten years of experience, 36.9 % reported high levels of emotional exhaustion. Additionally, 52.2 % of oncologists experienced high levels of emotional exhaustion along with reporting not adequately compensated. Similarly, 43.6 % oncologists with a high level of emotional exhaustions expressed worry about job security. Furthermore, 50.2

% oncologists with high levels of emotional exhaustion indicated a lack of sufficient annual leave, and the same percentage worked in environments with limited medical resources (Table 3).

*Correlation between personal accomplishment and different demographic factors*

Oncologists reporting low levels of Personal Accomplishment were those who had >30% pay cut (P =0.01), were contemplating moving to another country (P =0.01), and were struggling to cope with stress (P =0.01).During the economic crisis, Oncologists with both low (34 % ) and high levels of personal accomplishment (35% ) experienced a pay cut. This indicates that the sense of personal accomplishment was not affected by the pay cut during the economic crisis. However, 54.4 % of oncologists who feel less accomplished, have thought about moving abroad. Out of the surveyed oncologists, 76.5% of oncologists with low levels of personal accomplishment struggle to cope with stress. There was no statistical correlation found between depersonalization and demographic variables (Figure 2).

## Discussion

This study represents our attempt to assess the degree of burnout among Lebanese oncologists and to compare the findings with the data published data in 2018 [8]. Seventy-three percent of oncologists participated in our survey, indicating a high level of engagement with the study and producing a reliable dataset for analysis, compared to 70 % in 2018 [8].

Generally, the COVID-19 pandemic and economic collapse have increased the likelihood of physicians experiencing burnout due to the immense pressure and continuous emotional strain [19-21]. The financial challenges and uncertainty brought on by the pandemic have exacerbated the situation [22]. The prevalence of moderate and high burnout among Lebanese oncologists in our study is significant, at 84.8%, which is comparable to the burnout rate of healthcare workers in another study done on Lebanese hospitals during the COVID-19 pandemic (86.3%) [23]. In comparison to the data published in 2018, which indicated that the level of high burnout among Lebanese oncologists was none and only 19.6 % of the oncologists experienced a moderate level of burnout, the results are worrisome [13]. In 2023, the majority of oncologists in Lebanon reported feeling high levels of emotional exhaustion (56.5%) and depersonalization (55.6%), along with a decline in personal achievement (37%). This marks a significant contrast from our earlier study where a smaller percentage of Lebanese oncologists showed signs of emotional exhaustion (33.3%), depersonalization (13.7%), and low personal accomplishment (19.6%) [13].These results emphasize the impact of persistent stress and uncertainty on the mental well-being of oncologists in Lebanon a year after the declaration of the end of COVID-19 pandemic. Systemic issues within the Lebanese healthcare system, such as the significant emigration of oncologists, exacerbate burnout among oncologists [24]. Challenges such as limited resources, including shortages of medical supplies and equipment, inadequate staffing levels, and overcrowded hospitals, further strain oncologists' ability to deliver quality care while also maintaining their well-being. Furthermore, political instability, currency devaluation, and the Beirut blast in Lebanon have intensified the stress and uncertainty in the healthcare environment, impacting the job satisfaction and overall mental health of oncologists [25, 26].

Age and work environment are key contributors to emotional exhaustion among Lebanese oncologists. Particularly, older, more experienced oncologists are more susceptible to experiencing emotional exhaustion. This is due to prolonged exposure to stress and lack of support. Moreover, insufficient pay, job insecurity, and limited resources were significantly associated with higher levels of emotional exhaustion.

Our study revealed a significant relationship between experiencing a pay cut, contemplating moving abroad, and stress levels in relation to personal achievement. Despite many oncologists facing pay cuts during an economic crisis, their sense of personal fulfillment remains largely unchanged, indicating that their professional satisfaction is resilient to financial challenges. However, Oncologists who feel less accomplished have a higher chance to consider relocating to a different country. Additionally, a majority of oncologists with low levels of personal achievement struggle to manage stress, highlighting the negative impact of job satisfaction on mental well-being. These results highlight the intricate relationship between financial stability, job satisfaction, and psychological resilience among healthcare professionals in challenging economic conditions.

Over the last three years, the Lebanese healthcare system has faced significant challenges, beginning with the COVID-19 pandemic. Oncologists have been under immense pressure due to the increased demands caused by the pandemic. Additionally, funds allocated for cancer treatment were diverted to cover COVID-19 vaccination and treatment, adding extra pressure. The shortage of essential cancer medications during this period due to currency hyperinflation further complicated treatment efforts, leading to tragic losses in the battle against cancer. The catastrophic Beirut blast compounded these challenges by destroying three major hospitals in the Beirut region, resulting in devastating injuries and profound psychological implications for Lebanese oncologists. The cumulative impact of these events has driven many oncologists to consider emigration, exacerbating the already widespread issue of burnout among healthcare professionals in Lebanon. Thus, burnout among Lebanese oncologists emerges as a complex and multi-layered issue, influenced by a combination of systemic failures and traumatic events.

In Conclusion, the study underscores the significant increase in burnout level among Lebanese oncologists. It is attributed to the systemic challenges, economic collapse, Covid-19 pandemic and the Beirut blast. These findings emphasize the urgent requirement for extensive support strategies.

*Limitation*

It is important to acknowledge several limitations to ensure a comprehensive understanding of our findings. One limitation is the potential for participation bias, as oncologists who are more severely affected by burnout may be more inclined to respond to our survey. Furthermore, the relatively small sample size may restrict our ability to draw statistically significant conclusions. Furthermore, self-reported data introduces the potential for recall bias, as physicians may inaccurately recall their experiences with burnout. We excluded a minority of practicing oncologists who were not listed by the Lebanese Society of Medical Oncology.

## Author Contribution Statement

Conception and design of the work: Arafat Tfayli, Laura El Halabi, Maya Charafeddine. Data acquisition: Laura El Halabi, Maya Charafeddine. Data analysis: Laura El Halabi, Maya Charafeddine. Data interpretation: Arafat Tfayli, Laura El Halabi, Maya Charafeddine. Article drafting: Arafat Tfayli, Laura El Halabi. Critical article review for important intellectual content: Arafat Tfayli, Laura El Halabi, Maya Charafeddine. Project supervision: Arafat Tfayli. Final approval of the version to be published: All authors

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This study was conducted without external funding. It was approved by the Institutional Review Board (IRB) committee of the American University of Beirut. We declare that there is no conflict of interest to report. Ethical considerations were handled with the utmost care, and the IRB approved the study; all oncologists provided informed consent before participating in the study.

*Approval*

This was approved by ethical committee of the American University of Beirut

*Conflict of Interest*

No conflict of Interest to declare

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