

Implications of breast cancer healthcare policies and practices on palliative care utilization in Albania over the last decade

Orjola Pampuri¹, Henrik Zotaj²

¹Department of Psychology, Faculty of Social Sciences, Tirana University, Tirana, Albania

²Oncology Home Service, Tirana, Albania

Article Info

Article history:

Received Jun 12, 2024

Revised Nov 12, 2024

Accepted Jan 18, 2025

Keywords:

Albania

COVID-19

Dermatology

Outpatient visits

SARS-CoV-2

ABSTRACT

Palliative care improves the quality of life for patients with severe diseases like breast cancer. The objective of this study was to describe the variation of age of breast cancer patients (484 in total) who accessed palliative care in Albania in the last 10 years (2014 to 2023). Information on patient age, breast cancer incidence, hospitalization and mortality rates, and breast cancer screening was collected. Descriptive statistics and t-test for unpaired samples to compare the means of age in the study period were used. The average age of patients gradually increased from 2014 to 2019, showing fluctuations due to the COVID-19 pandemic, and resumed an increasing trend in 2023. Breast cancer incidence remained stable at approximately 37 cases per 100,000 annually, with significant increases in hospitalization and screening rates over the study period. In conclusion, the gradual increase in the age of breast cancer patients seeking palliative care in Tirana, Albania during the past decade, coupled with slight decrease of mortality rates, stable incidence and increase of hospitalization might be indicators of success of related health policies in Albania, including better diagnostic and treatment strategies, improved treatment efficacy and disease management, ultimately increasing the resilience and adaptability of the healthcare system.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Henrik Zotaj

Oncology Home Service

Tirana, Albania

Email: zotajhenrik@gmail.com

1. INTRODUCTION

The concept of palliative care traces back to the mid-20th century, evolving in response to the need for comprehensive care for individuals with critical life-threatening illnesses such as end-stage cancer. Cicely Saunders is often considered the founder of the modern hospice movement, emphasizing the importance of holistic care, focusing on pain management, symptom control, and addressing the psychosocial and spiritual needs of patients nearing the end of life [1]. The establishment of St. Christopher's Hospice in London in 1967 marked an important initial milestone in the development of modern palliative care [2]. Recognizing the importance of palliative care as an integral component of healthcare, the World Health Organization published, in 1990, the first policy on cancer pain relief [3].

Today, palliative care services include a comprehensive approach that aims to improve the quality of life for individuals with serious, life-threatening illnesses, focusing on symptom management, emotional support, and enhancing overall well-being [4]. Palliative care enhances comfort, promotes dignity, and fosters a sense of control amid challenging circumstances by addressing the physical, psychosocial, and spiritual needs of patients and their families [5]. As an essential component of health care services, palliative care aims to alleviate suffering and provide relief from pain and discomfort associated with advanced disease,

integrating the psychological and spiritual aspects of patient care, and offering a much-needed support system to help patients and families coping with the unfortunate prognosis [4], [6].

Palliative care plays a crucial role in healthcare services. Research has consistently shown the benefits of palliative care in improving patient outcomes, enhancing satisfaction with care, contributing to more efficient and cost-effective healthcare delivery by reducing healthcare utilization, unnecessary hospitalizations, emergency department visits, and intensive care unit admissions, and even prolonging survival in some cases [7]–[11]. Thus, the integration of palliative care into standard healthcare practices not only improves patient well-being but also represents a vital component of comprehensive healthcare delivery [12]. Historically, palliative care was primarily associated with end-of-life care for elderly patients with cancer, but today its scope has expanded to include individuals of all ages with a wide range of life-threatening illnesses [13]. Nevertheless, older adults remain significant recipients of palliative care, particularly those with advanced cancer or chronic illnesses [14].

Research on breast cancer patients receiving palliative care services has revealed intriguing trends regarding the age demographics of individuals seeking such care over time. For example, the effect of earlier detection and better treatment of breast cancer has led to a notable impact on the need for palliative care services. With advances in screening techniques, increased awareness and advancements in treatment modalities, breast cancer is often diagnosed at earlier stages, allowing for more effective interventions and improved outcomes [15]–[19]. As a result, the need for palliative care services among breast cancer patients may decrease (or postponed to a later, more advanced age), as timely diagnosis and targeted therapies mitigate the progression of the disease and alleviate symptom burden. The information on the age profile of patients receiving palliative care services over time remains largely under reported, even though it might be a proxy, yet practical, indicator of effectiveness and impact of breast cancer health policies across countries. In this context the aim of this study was to describe the age profile of patients seeking palliative care services in Albania and its fluctuations during a 10-year period, from 2014 to 2023, in order to shed light upon this under researched topic.

2. METHOD

2.1. Study population

This study included all patients diagnosed with breast cancer and needing palliative care services during the period 2014–2023 in Tirana, the capital of Albania. Palliative care as a relatively new medical discipline was established in Albania in October 1994 with the help and support of the Oncology Hospital of Bologna, Italy. Then this service was quickly integrated into public health structures, starting as the palliative care of Tirana (CPT). Within a few years after establishment, under the guidance and care of the palliative care service of Tirana and with the help of several lecturers from the USA, it became possible to extend this service to all regions of Albania.

The goal of palliative care service is "To provide patients and their families the best possible quality of life". It assists cancer patients in advanced and very advanced stages, and it is mainly home-based (i.e. services are offered at the patient's home, home care). The medical staff working in this service is multidisciplinary, including oncologists, nurses, psychologists, physiotherapists, social workers, and radiologists. The palliative care of Tirana basically captures all cancer patients in need of such services in the Tirana region.

2.2. Data collection

We collected information on patients' age at the moment he/she showed up to ask for palliative care services at our center. We also retrieved information on breast cancer incidence, breast cancer hospitalizations, breast cancer mortality, and breast cancer screening programs by browsing existing documents of the Institute of Public Health of Albania. This allowed us to put our findings into the local context.

2.3. Ethical considerations

To ensure the preservation of data privacy and anonymity, all personal information, such as names and addresses, was deliberately excluded from data collection. This was done to minimize any risk of identification and safeguard the confidentiality of participants. The study, therefore, followed strict ethical guidelines to ensure compliance with ethical research standards.

2.4. Statistical analysis

Absolute numbers and respective percentages were used to describe the distribution of breast cancer cases through the study years. Mean values were calculated for relevant numeric continuous variables. Breast cancer incidence and mortality rates were reported. Student t-test was used to compare the average age of participants by the year they entered into the palliative care program. All associations with a p-value <0.05 were regarded as statistically significant. The analysis was carried out using the Statistical Package for Social Sciences (SPSS) software, version 19.

3. RESULTS AND DISCUSSION

3.1. New breast cancer cases and incidence rate of breast cancer 2015-2022

Information about new breast cancer cases and incidence rates during 2015-2022 in Albania is shown in Table 1. During this period there were about 600-700 new breast cancer cases in Albania, with annual age-standardized incidence being almost stable at around 37 cases per 100,000. The unusual fluctuation during the year 2020 might be attributed to the effects of COVID-19 pandemic. It is estimated that there are more than 5,000 women living with breast cancer in Albania. Breast cancer incidence is highest among women aged 50-59 (113.2 cases per 100,000) and 60-69 (108.3 cases per 100,000), with a sharp decline starting from age 70.

Table 1. General information about breast cancer in Albania, 2015-2022*

Year	New breast cancer cases	Age-standardized incidence (per 100,000)
Year 2015	653	37.6
Year 2016	698	38.3
Year 2017	713	39.5
Year 2018	708	38.4
Year 2019	719	37.4
Year 2020	628	31.4
Year 2021	714	37.4
Year 2022	710	37.2

*Source: Institute of Public Health, 2023 (unpublished data)

3.2. Information on hospital services utilization for breast cancer during 2015-2021

Hospitalization rates related to breast cancer have increased more than twofold during 2015-2021; from 328.3 cases per 100,000 in 2015 to 763.2 cases per 100,000 in 2021 as presented in Table 2, showing almost a monotonic increasing trend. The unusual increase in 2021 could be considered as a compensation for the low growth during the first year of the pandemic and the temporary decrease in access to services that was observed in 2020 in Albania due to the COVID-19 pandemic. This trend highlights the potential impact of external factors, such as healthcare disruptions and delayed diagnoses, on hospitalization rates for chronic conditions like breast cancer.

Table 2. Hospitalization rate (per 100,000) for breast cancer during 2015-2022 in Albania*

Year	Hospitalization rates for breast cancer (cases per 100,000)
Year 2015	328.3
Year 2016	361.8
Year 2017	449.7
Year 2018	477.8
Year 2019	463.7
Year 2020	500.2
Year 2021	763.2

*Source: Institute of Public Health, 2023 (unpublished data)

3.3. Information on breast cancer mortality in Albania during 2015-2022

In 2022, there were only 192 breast cancer deaths or 13.7 per 100,000 women as shown in Table 3. In general, the mortality rate from breast cancer in Albania has a stable trend with a significant decrease in 2022. The high mortality rate in 2020 (16.9 deaths per 100,000 women) may have been affected by the pandemic. The age-standardized mortality rate shows a clearer decreasing trend over the years, despite fluctuations and pandemic effect. Over the years, there has been an increase in the average age of deaths from breast cancer, from 61 years in 2015 to 64 years in 2022 (data not displayed in tables).

3.4. Information on breast cancer screening in Albania during 2015-2022

The number of mammograms has considerably increased from about 5,000 in 2015 to more than 25,000 in 2022 as shown in Table 4. COVID-19 had a heavy toll on breast cancer screening as demonstrated by the much lower number of screenings during 2020 compared to 2019 and 2021. Such an increase over the years might be a reflection of improved awareness, enhanced screening programs, and expanded access to diagnostic services for breast cancer.

Table 3. Crude and age-standardized mortality rate (per 100,000) from breast cancer during 2015-2022 in Albania*

Year	Crude mortality rate (per 100,000)	Age-standardized mortality rate (per 100,000)
Year 2015	16.1	11.7
Year 2016	14.0	9.9
Year 2017	16.3	11.3
Year 2018	16.1	10.9
Year 2019	15.7	10.2
Year 2020	16.9	11.1
Year 2021	15.9	10.2
Year 2022	13.7	8.8

*Source: Institute of Public Health, 2023 (unpublished data)

Table 4. Mobile and stationary breast cancer screening procedures during 2015-2022 in Albania*

Year	Number of mobile mammography screening	Number of stationary mammography screening	Total number of mammography screening
Year 2015	4,863	5,717	10,580
Year 2016	4,535	4,302	8,837
Year 2017	4,053	6,340	10,393
Year 2018	5,351	10,513	15,864
Year 2019	4,261	15,365	19,626
Year 2020	3,124	7,253	10,377
Year 2021	3,727	18,666	22,393
Year 2022	5,423	20,259	25,682

*Source: Institute of Public Health, 2023 (unpublished data)

3.5. Information on number of patients seeking palliative care services in Albania during 2014-2023

Table 5 shows information about the number of breast cancer patients seeking palliative care services during 2014-2023 in Tirana, the capital of Albania. A total of 484 breast cancer patients sought palliative care services during this 10-year period. The average age of these patients showed a slowly increasing trend with the passing of time, with a monotonous increase from 2014 to 2019, a trend distorted by the year 2020, 2021 and 2022 as shown in Figure 1, probably because of the COVID-19 pandemic. Then, in 2023, the increasing trend resumes with a decisive increase of the average age compared to previous years. However, differences in average age of patients seeking palliative care during the years is not significant, even when the “distorting years 2020, 2021, 2022” are removed from the analysis. The age of breast cancer patients seeking palliative care in Tirana during this period ranged from 28 years to 96 years, with 17.3% of patients being 50 years or younger (data not shown in tables).

Table 5. Number of patients seeking palliative care services in Albania during 2014-2023

Year of entrance	Absolute number	Mean age \pm standard deviation	p-value*
Year 2014	37	61.73 \pm 12.77	0.643
Year 2015	58	61.98 \pm 12.64	
Year 2016	35	62.69 \pm 13.60	
Year 2017	40	63.30 \pm 13.27	
Year 2018	51	63.82 \pm 13.52	
Year 2019	54	65.98 \pm 13.04	
Year 2020	68	63.25 \pm 14.38	
Year 2021	51	63.76 \pm 13.09	
Year 2022	50	61.43 \pm 13.88	
Year 2023	40	66.85 \pm 14.13	
Total	484	63.46 \pm 13.44	

*p-value according to student t-test

This is the first comprehensive analysis of the age profile of patients seeking palliative care services in Albania over the last decade, specifically focusing on those diagnosed with breast cancer. Our results revealed several interesting key insights and trends which are crucial for understanding the dynamics of palliative care utilization and the implications of healthcare policies and practices in Albania on it. The average age of patients seeking palliative care services showed a gradually increasing trend from 2014 to 2019, with a slight distortion during the years affected by the COVID-19 pandemic (2020-2022). This distortion likely reflects the broader impacts of the pandemic on healthcare access and delivery, including disruptions in the cancer care continuum, from diagnosis to treatment and palliative care. The resumed increase in the average age in 2023 suggests a return to pre-pandemic trends, potentially indicating an adjustment or recovery of the healthcare system. On the other hand, we observed a rather stable incidence of breast cancer alongside an increase in the average age of palliative care patients during this time period. This could imply several underlying factors.

Implications of breast cancer healthcare policies and practices on palliative care ... (Orjola Pampuri)

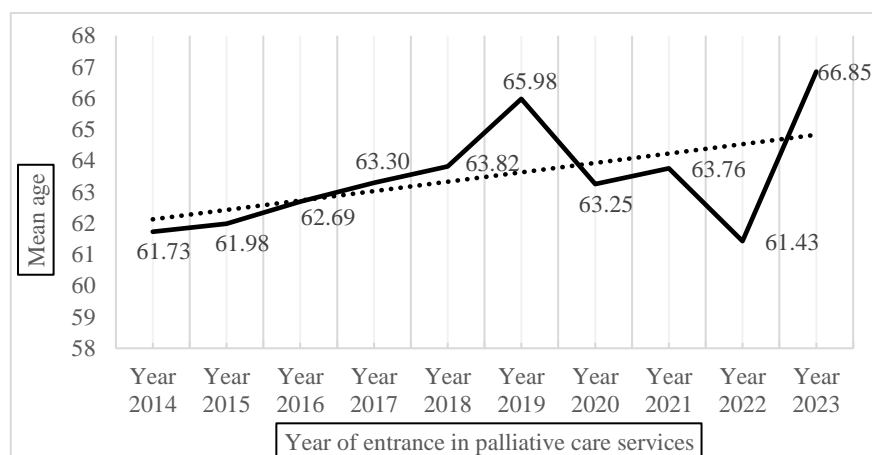


Figure 1. Trends of average age of patients seeking palliative care services in Albania during 2014-2023

Firstly, advances in breast cancer treatment and early detection could be prolonging life, thereby increasing the age at which palliative care is sought. This is supported by the observed outstanding increase in mammography screenings over the study period, which aligns with global and local trends emphasizing early detection as a crucial factor in improving cancer prognosis. Indeed, early detection of breast cancer is a priority of the Albanian Government as reflected in the National Health Strategy 2021-2030 document and specifically sanctioned by the Decision of Council of Ministers No. 623, date 29.07.2020 on “*Breast cancer screening program package in Albania*” [20] as a mechanism that enables early diagnosis and appropriate, timely and effective treatment for every woman through systematic examinations in the framework of an integrated package of services that provides breast palpation, mammography, further diagnostic examinations, and therapy treatment according to the best clinical protocols [21].

Secondly, the stable breast cancer mortality rates with a noted decrease in 2022, despite the overall increase in the number of cases, suggest improvements in treatment efficacy and possibly better management of the disease at earlier stages in Albania. In the absence of other robust evidence, we could assume that the reduction of breast cancer mortality rates over time in Albania could be partially a result of the increased Government attention towards early detection and better management of breast cancer. In this line, the increased hospitalization rates for breast cancer in the latter years of the study period could also potentially indicate improved healthcare infrastructure and access enabling more patients to receive care. The observed increase in hospitalization rates from 2015 to 2021 in Albania might be reflective of broader trends seen in other middle-income countries, where healthcare infrastructure improvements often lead to increased utilization of hospital services [22]–[24]. This is in line with actual trends where there is a move towards community-based palliative care models to reduce hospitalizations and focus on quality of life not only in high-income countries but in low- and middle-income countries as well [25]–[28].

Thirdly, demographic data indicating that palliative care is predominantly utilized by older adults, especially those with advanced cancer or chronic illnesses, aligns with international patterns [29]–[31]. In our study, the average age of patients with breast cancer seeking palliative care services was 63.46 years old, being within the range of other studies in the international arena reporting higher [32], [33], or even lower average age of breast cancer patients seeking such services [34]–[37]. The finding that about 17% of breast cancer patients seeking palliative care in Albania were between 28 to 50 years old highlights the need for expanded palliative care services tailored to the needs of younger populations and those with non-cancer diagnoses. This need is underscored by the broader scope of palliative care, which has evolved to include not only end-of-life care but also supportive treatments throughout the course of life-limiting illnesses [38].

Lastly, the increasing of the average age of patients seeking palliative care over the years (although non-significant even when excluding the pandemic-affected years), suggests a consistent demand for palliative care services among the aging population. Globally, the aging population has significantly impacted the demand for palliative care services [39], [40]. This consistency calls for sustained efforts to enhance palliative care frameworks, ensuring they are adequately equipped to meet the needs of an aging population, and to integrate these services more deeply into the mainstream healthcare system to improve quality of life and care efficiency. The stability of breast cancer incidence rates in Albania, combined with the noted demographic shifts in palliative care utilization, suggests an effectiveness of early detection and improved treatment protocols that align with international efforts to enhance cancer care. There is evidence

that nationwide breast screening programs have not only increased the detection rates but also shifted the age of diagnosis and subsequent palliative care needs to older populations [41]–[43].

The distortion of trends of incidence, hospitalization, and mortality rates by the pandemic, once again is an indication of the negative effect it has had on the overall health care utilization by the population worldwide [44], [45] and in Albania as well [46]. The impact of the COVID-19 pandemic on palliative care services in Albania is consistent with disruptions reported in other countries [47]. Even though greater reductions of health care utilization have been observed among people with less severe illness [44], cancer patients might have been affected as well in terms of excess breast cancer deaths associated to reduced screening and delayed diagnosis and treatment [48]. On the other hand, cancer patients in general could be more susceptible to a fatal outcome by viral diseases such as COVID-19 due to weakened immune system in cancer patients and other mechanisms [49]. Additionally, the number of excess deaths in Albania due to the pandemic was relatively high, with those aged 60 years or older bearing the highest excess mortality burden [50]. About 57% of breast cancer patients seeking palliative care in Albania were 60 years or older during 2014–2023, meaning that they might have been more at risk to die during the pandemic; this might explain the decreased average age of breast cancer patients seeking palliative care during the pandemic years in Albania. Another explanation might be the reluctance of breast cancer patients to consult with health care services amidst fear of being infected, thus not showing up. Such behavior could also have affected the willingness to undergo breast screening tests, as supported by fluctuations in the number of mammograms conducted during pandemic years in comparison with the pre- and post-pandemic period as shown in Table 4.

Nevertheless, leaving apart the pandemic years, there is clearly a tendency for increased average age of breast cancer patients entering palliative care services in Albania. To our opinion, this is an encouraging finding because it might mean that all policies and regulations in place are contributing to increased population awareness, earlier disease detection, earlier initiation of treatment and better treatment. All these consequences contribute to prolonged survival, delayed disease progression and better disease management, finally lessening the burden on palliative care services in the country.

Given the stable breast cancer mortality rates and the increased coverage of screening programs, Albania, like many other countries, faces the challenge of integrating an effective palliative care system into the existing healthcare framework. Future research should focus on evaluating the quality-of-life outcomes for patients receiving palliative care and the efficiency of different care models, including in-home versus hospital-based services. Comparative studies with countries that have robust palliative care systems could provide valuable insights into best practices and innovative care models that could be adapted to the Albanian context.

This study has several limitations. The study only takes into consideration a single diagnosis (breast cancer) and only one demographic characteristic of the patients (age at the moment of showing up for receiving palliative care services). This means that the findings might not be generalized to other diagnoses supported by the public palliative care service. Also, we only considered patients covered by Tirana area, and not all patients in need of palliative care. However, we are confident that we have captured almost all patients in need of palliative care in this region. A strong point of the actual study is that it represents the first attempt to shed light on the age trends of patients needing palliative care during the last 10-year period, in the same time trying to make sense of the findings and suggest possible explanations as well as future directions.

4. CONCLUSION

In conclusion, this study highlights the positive effects of health policies related to breast cancer prevention, control and management in Albania, and the critical role of palliative care in the continuum of cancer care. It also emphasizes the importance of continued advancement in cancer treatment and early detection, alongside a robust palliative care system that can adapt to the changing demographics and healthcare needs of the population. An important implication of this study is the need for sustained investment in public health initiatives, including increased funding for breast cancer screening programs, awareness campaigns, and the further integration of palliative care services into national cancer care strategies to ensure equitable access and improve patient outcomes across all regions of Albania.

REFERENCES




- [1] D. Clark, *Cicely saunders-founder of the hospice movement: selected letters 1959-1999*. Oxford University Press, 2005. doi: 10.1093/acprof:oso/9780198569695.001.0001.
- [2] R. Carter, "Cicely saunders-founder of the hospice movement: selected letters 1959-1999," *Journal of the Royal Society of Medicine*, vol. 96, no. 3, pp. 149–151, Mar. 2003, doi: 10.1258/jrsm.96.3.149.
- [3] World Health Organization Expert Committee on Cancer Pain Relief and Active Supportive Care & World Health Organization, "Cancer pain relief and palliative care. report of a who expert committee [meeting held in geneva from 3 to 10 july 1989]," World Health Organization. Accessed: May 10, 2024. [Online]. Available: <https://iris.who.int/handle/10665/39524>

- [4] World Health Organization, "Palliative care," World Health Organization. Accessed: May 10, 2024. [Online]. Available: <https://www.who.int/europe/news-room/fact-sheets/item/palliative-care>
- [5] R. B. Rome, H. H. Luminais, D. A. Bourgeois, and C. M. Blais, "The role of palliative care at the end of life," *Ochsner Journal*, vol. 11, no. 4, pp. 348–352, 2011.
- [6] L. Radbruch *et al.*, "Redefining palliative care—a new consensus-based definition," *Journal of Pain and Symptom Management*, vol. 60, no. 4, pp. 754–764, 2020, doi: 10.1016/j.jpainsymman.2020.04.027.
- [7] D. Oliver, "Improving patient outcomes through palliative care integration in other specialised health services: what we have learned so far and how can we improve?," *Annals of Cardiothoracic Surgery*, vol. 7, pp. S219–S230, 2018, doi: 10.21037/apm.2018.05.05.
- [8] L. A. Hugar, E. M. Wulff-Burchfield, G. S. Winzelberg, B. L. Jacobs, and B. J. Davies, "Incorporating palliative care principles to improve patient care and quality of life in urologic oncology," *Nature Reviews Urology*, vol. 18, no. 10, pp. 623–635, 2021, doi: 10.1038/s41585-021-00491-z.
- [9] S. Kaasa *et al.*, "Integration of oncology and palliative care: a lancet oncology commission," *The Lancet Oncology*, vol. 19, no. 11, pp. e588–e653, 2018, doi: 10.1016/S1470-2045(18)30415-7.
- [10] J. Chambers, "In-home palliative care increased patient satisfaction and reduced use and costs of medical services," *Evidence-Based Medicine*, vol. 13, no. 1, pp. 19–19, Feb. 2008, doi: 10.1136/ebm.13.1.19.
- [11] R. Brumley *et al.*, "Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care," *Journal of the American Geriatrics Society*, vol. 55, no. 7, pp. 993–1000, 2007, doi: 10.1111/j.1532-5415.2007.01234.x.
- [12] Z. C. *et al.*, "Early palliative care for patients with advanced cancer: a cluster-randomised controlled trial," *The Lancet*, vol. 383, no. 9930, pp. 1721–1730, 2014.
- [13] R. A. Mularski *et al.*, "A systematic review of measures of end-of-life care and its outcomes," *Health Services Research*, vol. 42, no. 5, pp. 1848–1870, 2007, doi: 10.1111/j.1475-6773.2007.00721.x.
- [14] B. Gomes, N. Calanzani, M. Gysels, S. Hall, and I. J. Higginson, "Heterogeneity and changes in preferences for dying at home: a systematic review," *BMC Palliative Care*, vol. 12, no. 1, 2013, doi: 10.1186/1472-684X-12-7.
- [15] C. M. B. Holloway *et al.*, "Technology as a force for improved diagnosis and treatment of breast disease," *Canadian Journal of Surgery*, vol. 53, no. 4, pp. 268–277, 2010.
- [16] M. Marmot, D. G. Altman, D. A. Cameron, J. A. Dewar, S. G. Thompson, and M. Wilcox, "The benefits and harms of breast cancer screening: an independent review," *The Lancet*, vol. 380, no. 9855, pp. 1778–1786, 2012, doi: 10.1016/S0140-6736(12)61611-0.
- [17] A. Wöckel *et al.*, "Effects of guideline adherence in primary breast cancer—a 5-year multi-center cohort study of 3976 patients," *The Breast*, vol. 19, no. 2, pp. 120–127, Apr. 2010, doi: 10.1016/j.breast.2009.12.006.
- [18] R. Sarker, M. S. Islam, M. S. Moonajilin, M. Rahman, H. A. Gesesew, and P. R. Ward, "Effectiveness of educational intervention on breast cancer knowledge and breast self-examination among female university students in bangladesh: a pre-post quasi-experimental study," *BMC Cancer*, vol. 22, no. 1, 2022, doi: 10.1186/s12885-022-09311-y.
- [19] L. E. Elshof *et al.*, "Feasibility of a prospective, randomised, open-label, international multicentre, phase iii, non-inferiority trial to assess the safety of active surveillance for low risk ductal carcinoma in situ - the lord study," *European Journal of Cancer*, vol. 51, no. 12, pp. 1497–1510, 2015, doi: 10.1016/j.ejca.2015.05.008.
- [20] Republic of Albania. High State Control, "Performance audit department. final performance audit report 'treatment of tumor diseases,'" (in Albanian) 2023. [Online]. Accessed: May 12, 2024. Available: <https://panel.klsh.org.al/storage/phpfWSOoG.pdf>.
- [21] Institute of Public Health, "Breast cancer," (in: Albanian) Institute of Public Health. Accessed: May 12, 2024. [Online]. Available: <https://www.ishp.gov.al/wp-content/uploads/2022/03/Kanceri-i-gjirit.pdf>
- [22] L. Luxon, "Infrastructure—the key to healthcare improvement," *Future Healthcare Journal*, vol. 2, no. 1, pp. 4–7, 2015, doi: 10.7861/futurehosp.15.002.
- [23] Z. Gizaw, T. Astale, and G. M. Kassie, "What improves access to primary healthcare services in rural communities? a systematic review," *BMC Primary Care*, vol. 23, no. 1, 2022, doi: 10.1186/s12875-022-01919-0.
- [24] A. S. Preker, D. Cotlear, S. Kwon, R. Atun, and C. Avila, "Universal health care in middleincome countries: lessons from four countries," *Journal of Global Health*, vol. 11, 2021, doi: 10.7189/JOGH.11.16004.
- [25] A. M. Firth *et al.*, "How is community based 'out-of-hours' care provided to patients with advanced illness near the end of life: a systematic review of care provision," *Palliative Medicine*, vol. 37, no. 3, pp. 310–328, 2023, doi: 10.1177/02692163231154760.
- [26] K. Spilsbury and L. Rosenwax, "Community-based specialist palliative care is associated with reduced hospital costs for people with non-cancer conditions during the last year of life," *BMC palliative care*, vol. 16, no. 1, p. 68, 2017, doi: 10.1186/s12904-017-0256-2.
- [27] E. Vernon, M. C. Hughes, and M. Kowalczyk, "Measuring effectiveness in community-based palliative care programs: a systematic review," *Social Science and Medicine*, vol. 296, 2022, doi: 10.1016/j.socscimed.2022.114731.
- [28] M. C. Hughes, E. Vernon, and A. Hainstock, "The effectiveness of community-based palliative care programme components: a systematic review," *Age and Ageing*, vol. 52, no. 9, 2023, doi: 10.1093/ageing/afad175.
- [29] K. L. Quinn, P. Wegier, T. A. Stukel, A. Huang, C. M. Bell, and P. Tanuseputro, "Comparison of palliative care delivery in the last year of life between adults with terminal noncancer illness or cancer," *JAMA Network Open*, vol. 4, no. 3, 2021, doi: 10.1001/jamanetworkopen.2021.0677.
- [30] N. Sharma, A. M. Sharma, M. A. Wojtowycz, D. Wang, and A. Gajra, "Utilization of palliative care and acute care services in older adults with advanced cancer," *Journal of Geriatric Oncology*, vol. 7, no. 1, pp. 39–46, 2016, doi: 10.1016/j.jgo.2015.12.004.
- [31] S. Rostoft, M. J. Thomas, M. Slaaen, B. Møller, and A. Syse, "The effect of age on specialized palliative care use in the last year of life for patients who die of cancer: a nationwide study from norway," *Journal of Geriatric Oncology*, vol. 13, no. 8, pp. 1103–1110, 2022, doi: 10.1016/j.jgo.2022.08.002.
- [32] D. S. Subramaniam, Z. Zhang, A. Jenkins, and L. J. Hinyard, "Palliative care among metastatic breast cancer patients in the end-of-life period in the u.s.," *Journal of Clinical Oncology*, vol. 40, no. 16_suppl, pp. e13002–e13002, 2022, doi: 10.1200/jco.2022.40.16_suppl.e13002.
- [33] J. A. Shin *et al.*, "Retrospective evaluation of palliative care and hospice utilization in hospitalized patients with metastatic breast cancer," *Palliative Medicine*, vol. 30, no. 9, pp. 854–861, 2016, doi: 10.1177/0269216316637238.
- [34] N. Islam *et al.*, "Coping strategy among the women with metastatic breast cancer attending a palliative care unit of a tertiary care hospital of bangladesh," *PLoS ONE*, vol. 18, no. 1 January, 2023, doi: 10.1371/journal.pone.0278620.




- [35] A. Tarus, K. Cornetta, D. Morogo, J. Nyongesa, H. Elias, and J. M. Boit, "Palliative care needs in breast cancer patients entering inpatient hospice in western kenya," *Journal of Pain and Symptom Management*, vol. 63, no. 1, pp. 71–77, 2022, doi: 10.1016/j.jpainsymman.2021.07.013.
- [36] M. Abunasser *et al.*, "Aggressiveness of cancer care at end of life in patients with metastatic breast cancer in jordan," *Journal of Multidisciplinary Healthcare*, vol. 16, pp. 2873–2881, 2023, doi: 10.2147/JMDH.S422391.
- [37] G. Montejó-Rosas, A. Galaviz-Muro, L. N. Espinoza-Rodríguez, and L. Cortéz-Gutiérrez, "Palliative care in advanced cancer. a 7-year experience at the dr. juan i. menchaca civil hospital of guadalajara, jalisco, mexico," *Gaceta medica de Mexico*, vol. 138, no. 3, pp. 231–4, 2002.
- [38] D. M. Cruz-Oliver, "Palliative care: an update," *Missouri Medicine*, vol. 114, no. 2, pp. 110–115, 2017.
- [39] A. E. Bone *et al.*, "What is the impact of population ageing on the future provision of end-of-life care? population-based projections of place of death," *Palliative Medicine*, vol. 32, no. 2, pp. 329–336, 2018, doi: 10.1177/0269216317734435.
- [40] G. Cerullo *et al.*, "Palliative care in the ageing european population: a cross-country comparison," *International Journal of Environmental Research and Public Health*, vol. 21, no. 1, 2024, doi: 10.3390/ijerph21010113.
- [41] H. D. Nelson, R. Fu, A. Cantor, M. Pappas, M. Daeges, and L. Humphrey, "Effectiveness of breast cancer screening: systematic review and meta-analysis to update the 2009 u.s. preventive services task force recommendation," *Annals of Internal Medicine*, vol. 164, no. 4, pp. 244–255, 2016, doi: 10.7326/M15-0969.
- [42] V. D. V. Sankatsing, E. A. M. Heijnsdijk, P. A. Van Luijt, N. T. Van Ravesteyn, J. Fracheboud, and H. J. De Koning, "Cost-effectiveness of digital mammography screening before the age of 50 in the netherlands," *International Journal of Cancer*, vol. 137, no. 8, pp. 1990–1999, 2015, doi: 10.1002/ijc.29572.
- [43] E. Lynge *et al.*, "Outcome of breast cancer screening in denmark," *BMC Cancer*, vol. 17, no. 1, 2017, doi: 10.1186/s12885-017-3929-6.
- [44] R. Moynihan *et al.*, "Impact of covid-19 pandemic on utilisation of healthcare services: a systematic review," *BMJ Open*, vol. 11, no. 3, 2021, doi: 10.1136/bmjopen-2020-045343.
- [45] H. Xiao *et al.*, "The impact of the covid-19 pandemic on health services utilization in china: time-series analyses for 2016–2020," *The Lancet Regional Health - Western Pacific*, vol. 9, 2021, doi: 10.1016/j.lanwpc.2021.100122.
- [46] J. Bucaj *et al.*, "Decreased hospital visits and increased mortality rate in emergency department during the covid-19 pandemic: evidence from albania," *Acta Medica Lituanica*, vol. 29, no. 1, pp. 58–68, 2022, doi: 10.15388/Amed.2022.29.1.13.
- [47] Y. Wang, Y. Huang, X. Ma, D. Wusiman, X. Zhang, and N. Bi, "The impact of the covid-19 pandemic on palliative care practice: a survey of clinical oncologists," *Frontiers in Public Health*, vol. 10, 2022, doi: 10.3389/fpubh.2022.1020937.
- [48] O. Alagoz *et al.*, "Impact of the covid-19 pandemic on breast cancer mortality in the us: estimates from collaborative simulation modeling," *Journal of the National Cancer Institute*, vol. 113, no. 11, pp. 1484–1494, 2021, doi: 10.1093/jnci/djab097.
- [49] S. Sinha and C. N. Kundu, "Cancer and covid-19: why are cancer patients more susceptible to COVID-19?," *Medical Oncology*, vol. 38, no. 9, 2021, doi: 10.1007/s12032-021-01553-3.
- [50] W. Shang, Y. Wang, J. Yuan, Z. Guo, J. Liu, and M. Liu, "Global excess mortality during COVID-19 pandemic: a systematic review and meta-analysis," *Vaccines*, vol. 10, no. 10, 2022, doi: 10.3390/vaccines10101702.

BIOGRAPHIES OF AUTHORS



Orjola Pampuri    was born on November 13, 1981, in Tirana. She graduated in psychology, Faculty of Social Sciences, University of Tirana. Mrs. Pampuri is a Doctor of Science. During the years 2010–2017 Mrs. Pampuri was an external lecturer at the Faculty of Social Sciences, during the years 2015–2017 she worked as a lecturer at the European University of Tirana, during the years 2006–2015 she worked as a Mental Health specialist at the Institute of Public Health and during the years 2011–2015 she worked as an external lecturer, University of Medicine. She also has a political career. She is a deputy in the Parliament of Albania since 2017. She has written several books and is interested in scientific research. She can be contacted at email: o.pampuri@yahoo.com.



Henrik Zotaj    is an oncology expert working for a long time in the Oncology Home Service in Tirana, Albania. He has a distinguished interest in oncology, medical research and teaching. He is involved in many research projects. He can be contacted at email: zotajhenrik@gmail.com.