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REVIEW ARTICLE

Cancer and aging in Ibero-America

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Abstract
Population aging represents a worldwide challenge. In Ibero-America (Spain, Portugal, and the American countries in which the Spanish or Portuguese language are spoken), the number of older adults is growing, leading to an increase in aging-related diseases such as cancer. Older adults already account for half of all cancer cases in Ibero-America, and this proportion will continue to increase. Furthermore, Ibero-American healthcare systems are not adequately prepared to provide care for older adults with cancer, mainly due to a lack of resources and generalized paucity of geriatric training for healthcare providers. Across the region, several clinical initiatives, educational activities and research collaborations have been established to set the foundations of Ibero-American geriatric oncology and to increase the geriatric knowledge among healthcare providers. This article provides an overview of the current landscape of geriatric oncology in Ibero-America, highlighting its critical challenges, opportunities for improvement and collaboration, and future directions.

Keywords Geriatric oncology · Global oncology · Aging · Latin America · Spain · Portugal

Introduction

Ibero-America is a region comprised by countries or territories which were once part of the Spanish or Portuguese empires and in which the Spanish or Portuguese languages are currently spoken. The definition of Ibero-America also includes the former European metropolis of Portugal and Spain, which together occupy the Iberian Peninsula [1]. Most of the countries of Ibero-America are currently classified as upper-middle income nations according to the World Bank [2]. Exceptions to this are Bolivia, El Salvador, Honduras and Nicaragua, which are classified as lower-middle income and Chile, Uruguay, Portugal and Spain, which are high-income nations [2]. The economies of Ibero-American countries are growing rapidly, and most are undergoing an important epidemiological and demographic transition [3–5]. These changes have led to a steady rise in the incidence of non-communicable diseases, including cancer, which have overtaken infectious diseases as the leading healthcare threat in many territories [3, 4].

Currently, over 650 million people live in the Ibero-American Region, of which about 57 million (8–9%) are aged 65 years or older [6]. The proportion of older adults within each country's population varies widely, going from 4.4% in Honduras to 20.7% in Portugal [6]. However, in some of the region's upper-middle income countries, such as Cuba or Argentina, older adults already account for more than 10% of the population (Table 1) [6]. As the proportion of older adults continues to grow, so will the number of cases of cancer and other non-communicable diseases. This is particularly challenging for healthcare systems in

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Table 1 Demographics and life expectancy in Ibero-American countries [6]

Country	Total population	Life expectancy (total, years)	Life expectancy (male, years)	Life expectancy (female, years)	Population aged ≥ 65 (%)
Argentina	43,417,765	76.3	72.6	80.2	10.9
Bolivia	10,724,705	68.7	66.3	71.3	6.5
Brazil	205,962,108	75.2	71.6	78.9	8.0
Chile	17,762,681	79.2	76.7	81.7	10.4
Colombia	48,228,697	74.2	70.7	77.8	7.0
Costa Rica	4,807,852	79.6	77.2	82.1	8.9
Cuba	11,461,432	79.5	77.6	81.6	13.9
Dominican Republic	10,528,394	73.7	70.6	76.9	6.7
Ecuador	16,144,368	76.1	73.4	78.9	6.7
El Salvador	6,312,478	73.0	68.5	77.7	7.9
Guatemala	16,252,429	73.0	69.9	76.3	4.5
Honduras	8,960,829	73.3	70.8	75.9	4.4
Mexico	125,890,949	76.9	74.5	79.4	6.5
Nicaragua	6,082,035	75.0	72.1	78.1	5.1
Panama	3,969,249	77.8	74.9	80.9	7.6
Paraguay	6,639,119	73.0	70.9	75.2	6.0
Peru	31,376,671	74.7	72.1	77.4	6.8
Portugal	10,358,076	81.5	78.4	84.8	20.7
Spain	46,447,697	83.4	80.6	86.3	18.9
Uruguay	3,431,552	77.1	73.7	80.8	14.4
Venezuela, RB	31,155,134	74.4	70.4	78.6	6.3

developing countries, since many are ill-equipped to provide care for chronic and complex conditions such as cancer [3, 4, 7].

The incidence and mortality of all cancers (excluding non-melanoma skin cancer) in Ibero-American countries is shown in Table 2 [8]. As expected, high-income countries with aging populations show a higher incidence rate. In most countries, prostate and breast cancer are the most commonly diagnosed [9]. However, cervical cancer is still the most common malignancy among women living in some of the lower-middle income countries of the region [9]. Currently, about half of all new cancer cases in the region occur in patients aged 65 years or older, but older adults will comprise almost 60% of all new cancer cases by 2035 (Fig. 1) [8].

In 2011, during the XXI Ibero-American Summit in Asunción, the Ibero-American General Secretariat and the Ibero-American Organization of Social Security (OISS), along with eight countries (Argentina, Brazil, Chile, Ecuador, Mexico, Paraguay, Spain, and Uruguay), established the Ibero-American Program of Cooperation on the Situation of Older Adults [10]. Among the goals of this program were: creating public policies aimed at protecting the rights and the development of older adults in the region; disseminating knowledge regarding the situation of older adults in Ibero-America; promoting interregional cooperation to address the problems faced by older adults; and providing training and knowledge for institutions and individuals providing services to older adults [10]. One of the main objectives of the program was to understand the availability of healthcare services for older adults in the region to design policies to improve and strengthen them [10]. Currently, the program has successfully launched a website and an observatory for the status of older adults in Ibero-America, as well as courses and meetings aimed at promoting the rights of older persons [11].

The countries that form the Ibero-American region share much more than a common linguistic and ethnic background. Healthcare systems in Latin America, for instance, face some of the same challenges and barriers to the implementation of strategies aimed at improving the care of patients with cancer and other chronic diseases [3, 4]. Additionally, family and social structures are very similar between countries, which is also important for the planning and coordination of care for patients with multiple chronic conditions. Therefore, Ibero-American nations and organizations should make it a high priority to collaborate to build the regional capacity to generate the infrastructure and personnel necessary to provide high-quality care to the growing population of older adults with cancer and other chronic diseases. Importantly, the cultural, social and linguistic heritage shared between the

Table 2 Cancer incidence and mortality in Ibero-America

Country	Most commonly diagnosed cancer in males	Most commonly diagnosed cancer in females	All cancers incidence, males[a]	All cancers incidence, females[a]	All cancers mortality, males[a]	All cancers mortality, females[a]
Argentina	Prostate	Breast	230.4	211.8	141.7	96.7
Bolivia	Prostate	Cervix uteri	123.9	164.3	86.2	96.3
Brazil	Prostate	Breast	231.6	186.8	123.8	87.9
Chile	Prostate	Breast	195.3	163.3	120.4	90.6
Colombia	Prostate	Breast	175.2	151.5	95.7	77.5
Costa Rica	Prostate	Breast	193.5	169.2	96.6	75.5
Cuba	Prostate	Breast	250.8	190.3	146.5	104.2
Dominican Republic	Prostate	Breast	158.5	149.1	100.5	81.4
Ecuador	Prostate	Breast	162	169.2	96.2	94.2
El Salvador	Prostate	Cervix uteri	136.6	167.2	91.9	97.8
Guatemala	Stomach	Cervix uteri	116.4	142.7	93	99.5
Honduras	Prostate	Cervix uteri	116	146.7	89.3	92.2
Mexico	Prostate	Breast	123.9	139.9	72.2	66.9
Nicaragua	Prostate	Cervix uteri	106.1	123.1	83.4	79.6
Panama	Prostate	Breast	150.1	148.8	88.8	71.1
Paraguay	Prostate	Breast	143.2	153	101.3	83.5
Peru	Prostate	Cervix uteri	140.9	169.8	92	93.5
Portugal	Prostate	Breast	306.3	198.1	134.7	70.1
Spain	Prostate	Breast	312.8	198.2	136.1	67
Uruguay	Prostate	Breast	297.5	220.9	197.3	106.5
Venezuela	Prostate	Breast	146.9	155	95.3	77.9

[a]Excluding non-melanoma skin cancers. Estimated age-standardized rate per 100,000 pop. Obtained from Globocan 2012 [8] and Cancer Atlas [9]

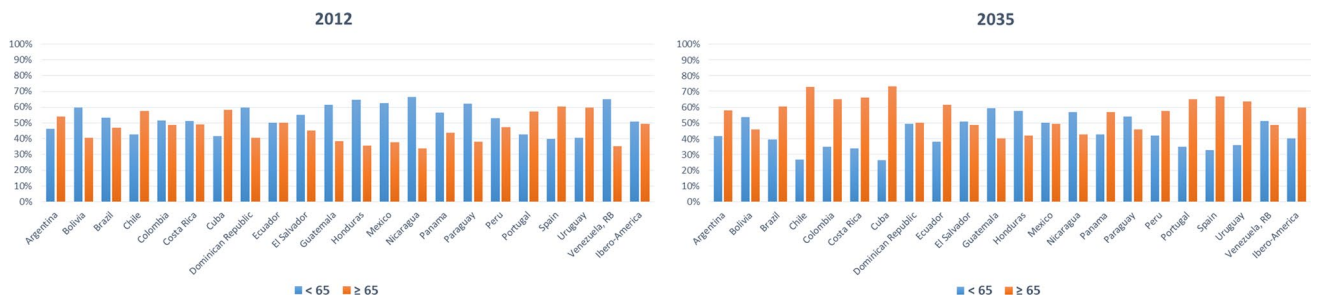


Fig. 1 Proportion of all cancers (excluding non-melanoma skin cancer) in patients younger and older than 65 years of age in Ibero-America, 2012 and 2035 (projected) [8]

Ibero-American countries in Europe and Latin America represents a unique opportunity for global oncology collaboration and for the creation of joint initiatives and collaborative research and educational projects to solve common problems and issues. Specifically, countries with a lower proportion of older adults may have the unique opportunity to learn from successful public health and academic initiatives undertaken in other countries that already have a large aging population, and to develop shared, cost-effective solutions. The objective of this review is to provide an overview of the current developments in cancer and aging in the region, with a focus on ongoing educational, clinical and research activities in the field of geriatric oncology, and with a particular emphasis on opportunities for regional collaboration. Our goal is to set the stage for future initiatives that can bring together the various nations and institutions in the region to find common solutions to shared challenges.

Spanish-speaking Latin America

The Spanish-speaking countries of the Americas, also referred to as Hispanic America (*Hispanoamérica*), are located in North America, Central America, the Caribbean and South America. Mexico is the most populous Spanish-speaking country in the Americas, while Argentina is the largest. Two island nations (Cuba and the Dominican Republic) are also part of this region. With the exception of Bolivia, all Spanish-speaking countries in the Americas have an overall life expectancy of over 70 years [6]. Four countries have a proportion of older adults of over 10%: Uruguay (14.4%), Cuba (13.9%), Argentina (10.9%) and Chile (10.4%) [6]. On the other hand, the country with the lowest proportion of older adults is Honduras, with only 4.4% of the population aged 65 years and older [6].

Likewise, there is a great disparity in the number of human resources available both for geriatric medicine and for cancer care. Across all countries, there are few physicians specializing in geriatrics to attend the growing volume of older adults, something that is also shared with most developed nations of the world [12]. In the United States, for example, as of 2016, there were 7293 geriatricians to take care of over 46 million older adults, which translates into one geriatrician for every 6440 patients aged 65 years or older [13]. In Ibero-America, the country with the most favorable older-adult-to-geriatrician ratio is Argentina, with approximately 5123 older adults per geriatrician (Table 3) [14]. Currently, there is an enormous need for geriatricians in every country in the region, and this need will continue to grow as the population ages. Previous reports have also highlighted the lack of available resources and infrastructure to diagnose and provide cancer care in Latin America [3, 4]. In the Spanish-speaking countries of Ibero-America, most cancer specialists are concentrated in large urban areas, and there is a scarcity of providers in rural settings and in smaller cities [3]. Although there has been a steady increase in the number of cancer specialists (surgical, radiation, and medical oncologists) in many countries of the region, many efforts are needed to increase the oncology workforce and to reduce disparities in the distribution of cancer care [4].

The aforementioned lack of personnel trained in both geriatrics and oncology is compounded by the lack of a geriatrics curriculum in most medical schools in the region, which means that most oncologists have never received any training in geriatric competencies. In 2005, the Latin American Academy of Medicine in Older Adults (ALMA) proposed the minimal requirements for the inclusion of geriatric medicine in medical school curricula across the region [15]. However, a recent study found that among 308 medical schools in Latin America, only 35% taught undergraduate geriatrics, ranging from none in Uruguay, Venezuela, and Guatemala to 82% in Mexico [12]. The Teaching Geriatrics in Medical Education (TeGeMe) studies, conducted by the World Health Organization (WHO) and the International Federation of Medical Students Associations (IFMSA) found that among medical students in Spanish-speaking Ibero-American nations, only about 14.4% had geriatrics training, and that geriatrics teaching was "weak" in the countries included in the survey [16, 17]. There is also a shortage of opportunities for postgraduate geriatrics training in the region, and in some countries (particularly in Central America), training in geriatric medicine is not even available [12]. Additionally, there are no dedicated geriatric oncology training programs in any of the Spanish-speaking nations of Latin America, and those geriatricians or oncologists interested in obtaining further training must undertake observerships or fellowships in developed countries in North America or Europe [5].

Geriatric oncology initiatives in the region have been mainly undertaken in Mexico, Chile and Argentina, and both Mexico and Argentina currently have national representatives at the International Society of Geriatric Oncology (SIOG). In Mexico, the first interdisciplinary geriatric

Table 3 Availability of geriatricians in Ibero-America

Country	Approximate number of certified geriatricians	Number of older adults per geriatrician [6]
Argentina	926 [14]	5123
Bolivia	NA	NA
Brazil	1000 [49]	16,395
Chile	104 [50]	17,796
Colombia	50 [51]	67,896
Costa Rica	40 [52]	10,699
Cuba	127 [53]	12,549
Dominican Republic	46 [54]	15,227
Ecuador	60 [55]	18,039
El Salvador	NA	NA
Guatemala	NA	NA
Honduras	NA	NA
Mexico	401 [56]	20,349
Nicaragua	4 [57]	77,323
Panama	NA	NA
Paraguay	25 [58]	15,988
Peru	157 [59]	13,640
Portugal	68 [31]	31,590
Spain	970 [29]	9039
Uruguay	81 [60]	6115
Venezuela, RB	NA	NA

NA Not available

oncology clinic was started in Mexico City at Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán (INCMNSZ) in 2015 [18]. This clinic, located in an academic third-level hospital, is built around a shared-care model in which patients are first screened using validated tools and those who are categorized as "frail" or "vulnerable" undergo a full geriatric assessment by a geriatrician, an oncologist, and other multidisciplinary team members, who then generate a treatment plan and follow the patient throughout the course of the treatment [19].

The Argentinean Society of Gerontology and Geriatrics, the Mexican Society of Medical Oncology (SMEO), the Mexican Mastology Association, and the National College of Geriatric Medicine of Mexico have included geriatric oncology into the scientific program of various meetings and symposia, and have created geriatric oncology groups. Additionally, the geriatric oncology group at SMEO has published a book reviewing the management of cancer in older adults [20].

Spain and Portugal

Spain and Portugal currently have the highest life expectancy among all the Ibero-American countries [6], (80.6 and 77.36 years for men and 86.1 and 80.41 years for women, respectively) [21, 22]. In fact, Spain is currently the second country in the world with the highest life expectancy, tied with Switzerland and only behind Japan [23]. At the same time, the population of both countries is aging rapidly, placing them among the countries with the highest proportion of inhabitants aged 65 years or older in the world: 18.5% in Spain and 20.4% in Portugal [6]. It is expected that these figures will continue rising over the next 30 years, especially at the expense of the population 80 years of age or older [24, 25]. In Spain, the number of older adults is set to double in size by 2050, becoming 31.9% of the total Spanish population [26].

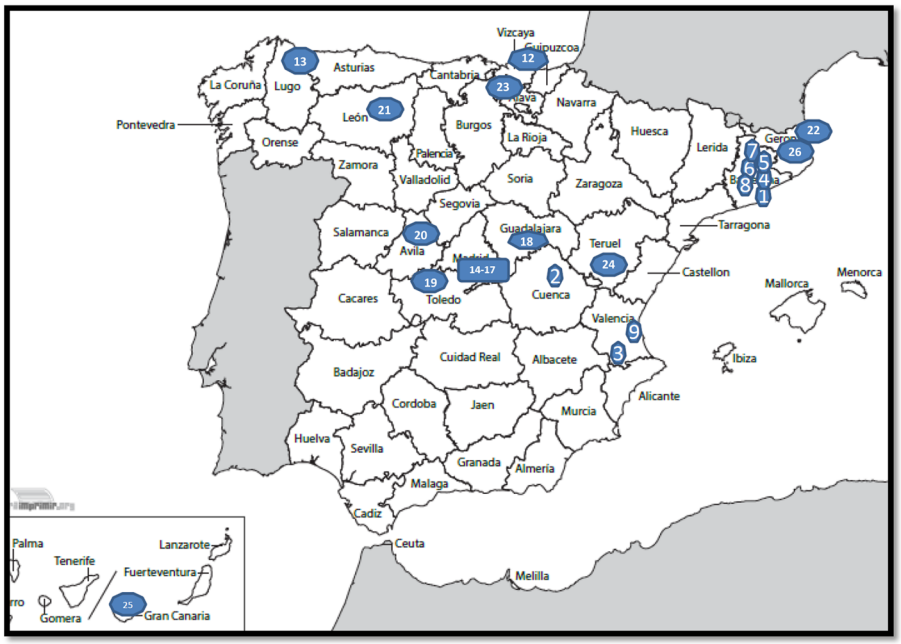
At the same time, Spain and Portugal have the highest cancer incidence in Ibero-America. Cancer is currently the second cause of death in both countries, as well as one of the most frequent causes of hospitalization [27]. The five most common types of solid tumors in both countries are prostate, breast, colorectal, lung, and urinary bladder cancer, while Non-Hodgkin's Lymphoma in the most common hematologic malignancy [8, 9, 28]. Currently, approximately 60% of all new cancer cases and 70% of all cancer-related deaths in Spain and Portugal occur in older adults [27].

According to Spanish Society of Geriatrics and Gerontology (SEGG), there are approximately 1773 physicians involved in geriatric care in Spain, including geriatricians, generalists, internists and other disciplines [29]. In Portugal, the recognition of geriatric medicine as a specialty is relatively new, and there are currently less than 100 certified geriatricians in the country [30, 31]. Like in most other countries in the region, the amount of older adults per geriatricians in Spain and Portugal is considerable, and there is a pressing need to increase specific training programs in the field.

To address the growing needs of older patients with cancer, and to implement healthcare policies aimed at improving their care, several initiatives have been undertaken in Spain and Portugal. In Spain, the Spanish Group of Geriatric Hematology (GEHEG) was established in 2012, while the Geriatric Oncology Working Group of the Spanish Society of Medical Oncology (SEOM) was created in the year 2016. The aims of these groups are to analyze the current situation of cancer and aging in Spain and to develop cooperative clinical, educational, and research initiatives. The first National Meeting on Geriatric Oncology took place on May 2016 in Valencia, and the Geriatric Oncology Working Group has played an increasingly relevant role in SEOM's national meetings. Additionally, the first edition of GEHEG's Annual Workshop took place in 2015 in Madrid, with almost 150 attendees. Likewise, Portuguese geriatric oncologists started a project "Neways—Cancer Network for Welfare Aging" in 2016 [32]. "Neways" is a stakeholders' network which developed a position paper aimed at promoting public discussion to adapt healthcare resources to older patients with solid and hematology malignancies, and at developing a national strategy to implement this objective in Portugal [32].

Although geriatric oncology is not yet recognized as a clinical specialty, there is a handful of units in Spain with more than 10 years of experience in the treatment of older patients with cancer (Barcelona, Cuenca, Valencia, Madrid) and in recent years, several healthcare professionals with training in both geriatrics and oncology have started developing and launching other geriatric oncology units around the country (Fig. 2) [33–35]. Additionally, there are four units which provide specialized care for older patients with hematological malignancies: three in Madrid and one in Barcelona.

In Spain, there are 33 accredited centers to train geriatricians. However, geriatric oncology is not yet included as part of the training. Currently, there are two centers offering training in geriatric oncology, located in Barcelona (ICO-Hospitalet) and in Madrid (Hospital Rey Juan Carlos). Training opportunities in geriatric hematology are available at two centers in Madrid (Hospital Fundación Jiménez Díaz and Hospital Rey Juan Carlos) and one in Barcelona (Hospital ICO Duran i Reynals). These three centers have been recognized by SIOG. Both GEHEG and SEOM's Geriatric Oncology Working Group are actively working to develop training initiatives melding the fields of geriatrics, hematology and oncology. One of the first initiatives of the working group was the drafting of a consensus document including



Hospitals with Geriatric Oncology Units

1. ICO. Hospitalet
2. Hospital Virgen de la Luz. Cuenca
3. Hospital Lluís Alcanyís. Xativa
4. Consorci Sanitari de Terrasa
5. Hospital Transversal Moises Broggi/ Hospital General de l'Hospitalet
6. Althaia. Xarxa Asistencial i Universitaria Manresa
7. Parc Sanitari Pere Virgili. Barcelona
8. Hospital del Mar. Barcelona
9. Hospital Dr. Peset. Valencia
10. Hospital Rey Juan Carlos Madrid
11. Fundación Jiménez Díaz. Madrid

Hospitals with Geriatric Oncology Interest Groups

12. OSI Donostialdea. Donostia
13. Hospital Universitario Lucus Augusti. Lugo
14. Hospital Infanta Elena. Madrid
15. Hospital Puerta de Hierro. Madrid
16. Hospital Infanta Sofía. Madrid
17. Hospital Severo Ochoa. Madrid
18. Hospital Universitario de Guadalajara
19. Hospital Nuestra Señora del Prado. Talavera de la Reina.
20. Hospital Nuestra Señora de Sonsoles. Ávila
21. Hospital Universitario de León
22. Parc Hospitalari Martí y Julià. Salt
23. Hospital Universitario Araba. Vitoria-Gasteiz
24. Hospital Obispo Polanco. Teruel
25. Hospital Universitario Insular de Gran Canaria
26. Hospital Universitari Dr. Josep Trueta. Girona

Fig. 2 Geriatric Oncology Centers in Spain (2017)

recommendations towards awareness of geriatric oncology and the use of geriatric assessment in clinical practice. In Portugal, according to the Geriatric Study Group of the Portuguese Internal Medicine Society, there are three centers offering geriatrics training (Lisbon Faculty of Medicine, Coimbra Faculty of Medicine, and Universidade da Beira Interior), although there are no specific programs geared towards training in geriatric oncology [31]. Regarding researching initiatives, clinical trials for elderly patients have been started in Spain, with a particular focus on lung cancer. Although there is still a long way to go, these initiatives will pave the way for advances in the field in the years to come.

Brazil

Brazil is a large developing country located in South America, with great socioeconomic and cultural diversity. From 1960 to 2010, Brazil underwent a true epidemiological transition, with a significant increase in life expectancy and in the number of older adults. Current estimates show that these trends will continue, and that by 2050, older adults will comprise about 23% of the entire Brazilian population, making Brazil the sixth country in the world in absolute numbers of older adults [36].

In parallel with the aging of the population, Brazil has had a dramatic increase in the incidence of cancer, turning this into a major challenge for local and federal healthcare systems [37, 38]. In the year 2016 alone, there were approximately 600,000 new cancer cases in Brazil, with the most common one being non-melanoma skin cancer (176,000 new cases), followed by prostate (61,000), breast (58,000), and colon and rectum (34,000) [37]. Furthermore, projections from Brazil's National Cancer Institute (INCA) show that most of the future increase in new cancer cases in the country will occur among people aged 65 or older, with a projected doubling of the cancer incidence between 2015 and 2035 [37].

Most of the geriatric oncology initiatives in Brazil have been undertaken in the southeast of the country, mainly in the State of Sao Paulo. Since 2012, the Cancer Institute of the State of Sao Paulo (ICESP) has established geriatric

oncology program that employs three fulltime geriatricians and provides training for residents in both geriatrics and oncology. Since 2013, more than 2000 older adults have been referred for evaluation by the geriatric oncology team at ICESP, with a significant proportion referred for assistance in deciding the most appropriate cancer therapy [38]. Other geriatric oncology clinics are located at two private hospitals in Sao Paulo (Hospital Israelita Albert Einstein and A.C. Camargo Cancer Center) [39–41], at the Federal University of ABC in Sao Paulo, at the Hospital das Clinicas in Ribeirao Preto [42], and at the Instituto de Medicina Integral Professor Fernando Figueira (IMIP) in Recife [43]. Most of these clinics follow a consultation model, in which specialized geriatricians or oncologists perform make geriatric assessment based recommendations to referring oncologists [38]. Recently, a national survey aimed at understanding the geriatric knowledge of oncology professionals in the country was designed and administered using a web-based platform. Sixty percent of respondents reported having a population of older patients in their clinics between 26 and 50%; and 65% believed that chronological age should not be the sole factor determining treatment initiation in an older patient. However, most respondents (70%) lack a geriatrics program at their institution [44].

According to the National Council of Medicine, as of 2014, there were 1405 geriatricians practicing throughout Brazil, which translates to an average of 0.7 geriatricians per 100,000 inhabitants. At the same time, the number of certified oncologists was 3409, translating into an average of 1.7 oncologists per 100,000 inhabitants [45]. Although geriatric oncology is not recognized as a specialty in Brazil, the team at ICESP currently provides fellowship training in geriatric oncology, with three fellows trained per year. Furthermore, the Brazilian Society of Clinical Oncology organized three geriatric oncology symposia between 2012 and 2016, and in 2017, an International Geriatric Oncology Symposium was included as a part of the Brazilian Oncology Congress under the auspices of SIOG (SIOG LATAM Symposium).

Recommendations and future directions

As life expectancy increases, the number of older patients with cancer will certainly continue to rise in Ibero-America, and healthcare systems throughout the region will be forced to respond to this situation in a timely manner. The care of older adults in Ibero-America requires a coordinated response from all stakeholders, and we believe that this response can certainly be amplified and strengthened through regional collaboration (Fig. 3). Governments and health ministries throughout Ibero-America need to strengthen or undertake preparations to face this epidemiological transition, and coordinated social, educational and economic efforts should be made to build the capacity

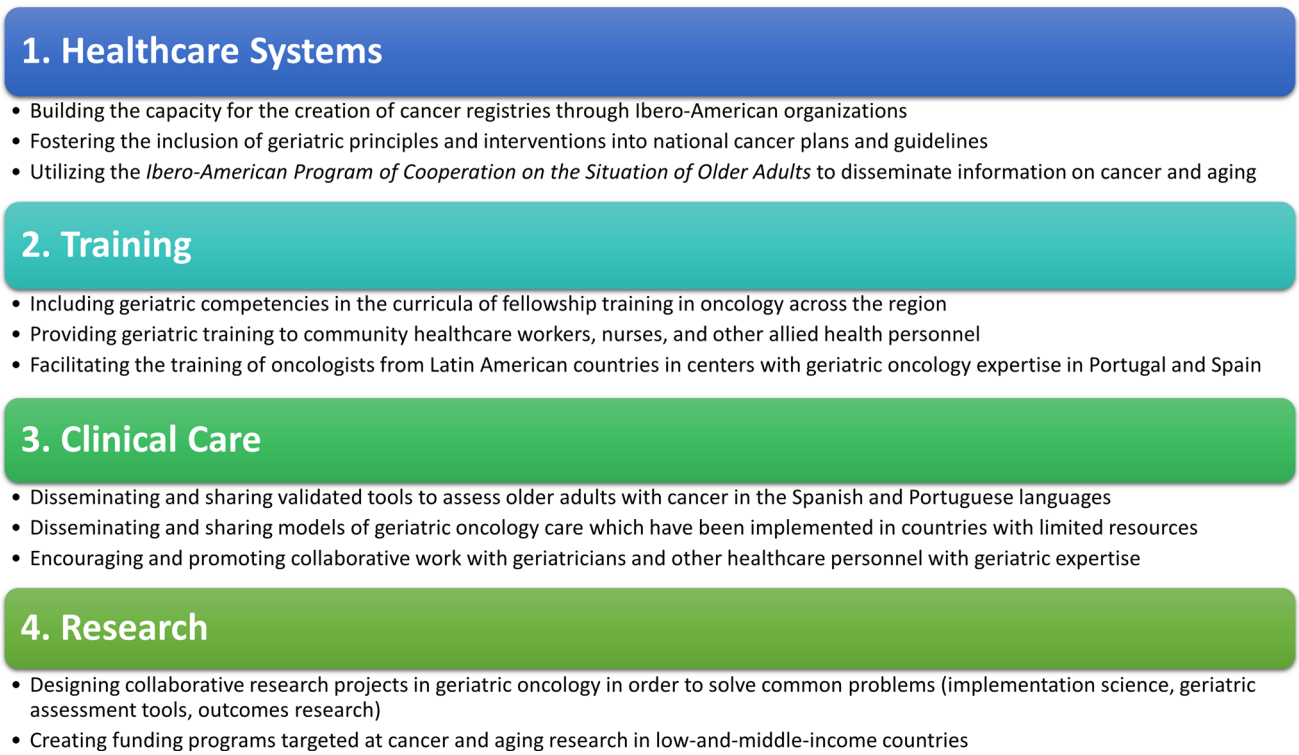


Fig. 3 Recommendations and future directions for the development of geriatric oncology initiatives in Ibero-America

to appropriately treat older patients with cancer. Geriatric medicine training needs to be strengthened throughout the region, and incentives must be generated for those willing to pursue an academic career in geriatrics. Additionally, geriatric medicine should be included as a fundamental part of training programs as early as medical school, and be integrated in to oncology training, not only for clinical oncologists but also for surgeons and radiation oncologists. Other healthcare personnel, including nurses, also need to be trained to enable the integration of geriatric principles into the everyday clinical care of older patients with cancer. However, we must also keep in mind that the healthcare of older adults will also be influenced by various socioeconomic and environmental factors, and that no strategy will be complete without improving the economic, educational and social situation of older adults throughout the region [46]. Therefore, international collaboration aimed at reducing socioeconomic inequalities and at improving access to healthcare in the region represents another opportunity for Ibero-American countries to work together.

We firmly believe that geriatric oncology represents an enormous opportunity for intraregional collaboration within Ibero-America. International collaborations between researchers from Spain and Portugal, where population aging is already a reality, could provide guidance and training to investigators in developing countries in the Americas. Additionally, there are opportunities for the development of cost-effective strategies in developing Latin American countries that can then be translated back to developed nations through reverse innovation. This can be greatly facilitated by a common linguistic background, which can allow for the use of tools and assessment measures across national borders, as well as for swift data sharing. Furthermore, the recruitment of patients for clinical studies designed specifically for older adults with cancer could also be expanded and improved widely by building international research networks in cancer and aging. Regional organizations, such as the Organization of Ibero-American States and the Ibero-American General Secretariat (through the Ibero-American Program of Cooperation on the Situation of Older Adults) [11] should leverage their existing infrastructure and networks to facilitate relationships among scientists and academic institutions in the Ibero-American countries, to promote lateral cooperation among member states and to provide training and funding for scientific initiatives across the region. Existing training and funding opportunities, such as the Medical Oncology Fellowships offered by Fundación Carolina or the research grants offered by Fundación Mapfre [47, 48], represent good examples of strategies that could be used to generate meaningful links between countries in the region and to exchange ideas and mentorship, and could be adapted for geriatric oncology-specific initiatives.

Policy makers and academic leaders in the region must keep in mind that it will not be feasible for specialized geriatric oncology clinics to provide care for all older patients with cancer. Each Ibero-American country needs to develop a comprehensive geriatric oncology plan taking into account the local cancer incidence; life expectancy; projected growth of the older adult population; available resources; and healthcare costs. Although Ibero-American geriatric oncology is still at a very early stage, there is a great need to develop resources and enormous opportunities for research and for implementation of novel models of care. Importantly, healthcare systems throughout the region should make a coordinated attempt at reducing the inequities faced by older patients with cancer who seek medical care for cancer and other chronic disease. Only through cooperation in education, research, and training will Ibero-America be able to prepare for the impending changes in cancer incidence among older adults in the region.

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Compliance with ethical standards

Conflict of interest All the other authors have no conflicts of interest to disclose.

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