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"The Role of the General Practitioner in a Medical Oncology Department: Bridging Primary and Specialized Care"

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الإهداء

Dedication

إلى من آمنوا بي حين كان الطريق طويلًا

إلى العائلة والأصدقاء، وكل قلبٍ صادق قدّم كلمة دعمٍ أو دعاء

إلى سنوات الدراسة التي صنعت مني ما أنا عليه اليوم

إلى كل من منحني الصبر والثقة لأصل إلى هذه المرحلة

إلى أساتذتي الكرام الذين علّمونا أن الطب رسالة قبل أن يكون مهنة

وإلى كل مريض كان سببًا في تعلّم درسٍ جديد عن الإنسانية والرحمة

أهدي هذا البحث المتواضع ثمرةَ سنواتٍ من الاجتهاد والسهر والطموح

To those who believed in me when the journey felt long,

To my family, friends, and every sincere heart that offered support or prayers,

To the years of study that shaped who I am today,

To everyone who gave me patience and confidence to reach this stage,

To my respected teachers who taught us that medicine is a mission before being a profession,

And to every patient who taught me a lesson in humanity and compassion

I dedicate this humble work, the result of years of hard work, dedication, and ambition.

شكر وتقدير

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على دعمها وتوجيهاتها القيّمة ومتابعتها المستمرة خلال مراحل إعداد هذا العمل

فكان لخبرتها ونصائحها الأثر الكبير في إنجاز هذا البحث وإظهاره بالصورة المطلوبة

فكل الاحترام والامتنان لجهودها الكريمة

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GENERAL INTRODUCTION

Cancer remains one of the most formidable public health challenges of the 21st century. Driven by an aging population, urbanization, and lifestyle transitions, the epidemiological burden of neoplastic diseases is rising at an unprecedented rate globally, and the Algerian healthcare system is no exception. However, thanks to monumental advancements in early screening, targeted molecular therapies, and immune-oncology, cancer is no longer universally viewed as a rapidly fatal, acute illness. For a growing majority of patients, it has transformed into a complex, multi-year chronic pathology.

This profound shift in the nature of the disease demands a parallel transformation in healthcare delivery. Historically, cancer care has been highly centralized within specialized, tertiary hospital environments, such as the *Centres Anti-Cancer* (CAC) or University Hospital Centers (CHU). Yet, an acute-care infrastructure is inherently ill-equipped to manage the continuous, long-term needs of a cancer patient. Today's oncology patients require not only aggressive tumor eradication but also rigorous management of underlying comorbidities, immediate triage for complex treatment-related toxicities, and continuous psychological support. In this rapidly evolving landscape, the rigid boundary separating community-based primary care from the specialized medical oncology department has become a critical vulnerability. The General Practitioner (GP)—the physician possessing the deepest longitudinal knowledge of the patient—must be brought out of the periphery and placed at the center of the oncological care continuum.

Interest of the Question

The scientific and clinical interest of this research lies in addressing the profound systemic fragmentation that currently plagues cancer care. Despite the theoretical consensus on the necessity of multidisciplinary care, the clinical reality for most patients is characterized by a "siloed" approach. When a patient enters a specialized oncology department, their primary care physician is frequently cut out of the communication loop.

This information asymmetry leads to dangerous clinical gaps. During active treatment, pre-existing chronic conditions (such as diabetes or cardiovascular disease) frequently decompensate because they are overshadowed by the singular focus on the tumor. Furthermore, upon completion of active therapy, patients are often discharged into a "survivorship void," experiencing high clinical anxiety and inadequate surveillance due to the lack of formalized shared-care pathways.

In the Algerian context, this systemic fragmentation is exponentially aggravated by severe spatial and geographical disparities. Highly specialized oncology care is heavily concentrated in northern coastal metropolises, while millions of citizens reside in the High Plateaus or southern Saharan regions. By investigating the structural integration of the GP directly into the medical oncology department—the "Onco-Generalist" model—this thesis explores a highly viable, cost-effective solution to bridge the geographic divide, optimize strained hospital resources, and ensure equitable, holistic care for all patients.

Motivation for the Study

The motivation for selecting this subject stems from direct observations of the daily clinical realities and struggles faced by cancer patients within our healthcare system. Too often, we witness vulnerable patients acting as "medical couriers," physically carrying their fragmented medical dossiers back and forth between isolated community polyclinics (*EPSP*) and distant tertiary hospitals, frequently receiving delayed interventions for manageable toxicities.

Furthermore, there is a profound, untapped potential within the Algerian general practice workforce. GPs frequently report feeling underutilized, intimidated by the complexities of modern oncology, and relegated to the role of passive "referring doctors." The primary motivation of this thesis is to challenge this antiquated hierarchy. By redefining the GP's role and exploring models of deep structural integration, the aim is to empower general practitioners, elevate their clinical scope, and advocate for a healthcare architecture where no patient falls through the cracks between the community and the hospital.

Structure of the Thesis

To comprehensively address this complex public health issue, this thesis is structured into two main parts: a foundational theoretical review and an empirical practical study.

PART I: THEORETICAL FRAMEWORK The theoretical portion of this work synthesizes current international literature, clinical guidelines, and public health policies to map the cancer care continuum. It is divided into four consecutive chapters:

- **Chapter One: Introduction and Background.** This chapter establishes the global and national epidemiological context, detailing the rising cancer burden and the increasing complexity of multi-modal oncological care.
- **Chapter Two: Cancer Care Pathways and the Traditional Role of the General Practitioner.** This section outlines the conventional duties of the GP, focusing on early screening, diagnostic work-ups, and the critical management of patient comorbidities.
- **Chapter Three: Systemic Fragmentation and Communication Barriers in Oncology.** This chapter critically analyzes the structural flaws of modern health systems, examining the "black box" of hospital communication, the psychosocial toll of the survivorship void, and the specific geographical challenges within the Algerian health infrastructure.
- **Chapter Four: Redefining the GP's Role: Integration Models for Medical Oncology Departments.** The culminating theoretical chapter introduces the concept of the embedded "Onco-Generalist" and the "Liaison GP," providing concrete organizational and economic frameworks for integrating primary care directly into the specialized oncology ward.

PART II: PRACTICAL STUDY To validate the theoretical concepts and assess the feasibility of integrating GPs into specialized units in Algeria, the second part of this thesis consists of a prospective, cross-sectional field study.

- **Methodology:** The practical component relies on a structured **Questionnaire** administered to General Practitioners currently interacting with, or formally embedded within, Medical Oncology Departments.
- **Objectives of the Field Study:** This study aims to evaluate the GPs' current clinical roles on the ward (e.g., day-hospital triage, comorbidity management, survivorship clinics), measure their level of integration within Multidisciplinary Tumor Boards, identify the daily communication barriers they face with specialized oncologists, and gather their perspectives on the specialized training required to formally adopt the role of a "General Practitioner in Oncology."

PART ONE: THEORETICAL

CHAPTER ONE:

INTRODUCTION AND THE GLOBAL CANCER BURDEN

1.1. Background: The Growing Cancer Burden and the Complexity of Modern Care

Cancer is currently established as one of the leading causes of illness and mortality worldwide, presenting a formidable and escalating crisis in the contemporary global health environment [1]. The profound physical, emotional, and financial impacts of the disease place a heavy, complex, and quickly expanding burden on health systems around the world. This surge is taxing medical resources to their limits and necessitating immediate, innovative legislative and infrastructural solutions. Comprehensive epidemiological data published by the World Health Organization (WHO) indicates that millions of people die from various forms of cancer each year, and the incidence trajectory remains strictly upward [1].

This unrelenting rise is propelled by several overlapping global transitions. Primarily, the rapid aging of the world's population plays a substantial role, alongside significant lifestyle changes such as rapid urbanization, increased sedentary behavior, and shifting dietary habits [1], [2]. Furthermore, increasing environmental exposures to carcinogens and, paradoxically, substantial improvements in diagnostic capabilities have allowed for the early detection of previously undiagnosed or asymptomatic cases [1], [2]. Data synthesized by the Global Cancer Observatory (GLOBOCAN) and the International Agency for Research on Cancer (IARC) corroborate this consistent and unrelenting rise in new cancer cases worldwide [3], [4].

While the burden is global, the impact is highly asymmetric. This trend is especially concerning in low- and middle-income nations. In these regions, the growing number of cancer cases frequently interferes with health systems that face severe structural limitations, such as a chronic lack of sustainable funding, inadequate diagnostic infrastructure, and

highly fragmented care structures that find it inherently difficult to manage chronic, multifaceted illnesses [4], [5].

In the Algerian context, these global epidemiological realities are acutely felt. Cancer incidence in Algeria is rising steadily, transforming into a major public health priority. However, the Algerian healthcare system grapples with pronounced spatial inequalities. Specialized medical oncology centers are predominantly concentrated in major northern urban hubs (such as Algiers, Oran, and Annaba), creating immense logistical and financial barriers for patients residing in rural, highland, or southern regions. Consequently, the reliance on community-based care is not merely an option but a systemic necessity to bridge the vast geographic divide.

Beyond the sheer epidemiological numbers, contemporary cancer care has developed from a rigidly disease-focused paradigm into an extremely intricate, interdisciplinary procedure that goes much beyond the acute stages of diagnosis and active treatment (such as radiation, chemotherapy, or surgery). Today's oncology patients frequently need a prolonged continuum of care. This encompasses the rigorous control of concomitant chronic conditions that may drastically complicate oncology outcomes, the sophisticated management of acute and chronic treatment-related toxicities, and rigorous long-term follow-up to monitor for disease recurrence.

Additionally, strong psychosocial support is universally recognized as essential for addressing the profound psychological effects of receiving a cancer diagnosis, as well as the seamless incorporation of palliative care where necessary to enhance the patient's overall quality of life. This inherent complexity challenges traditional, siloed models of care that mainly rely on specialized oncology services, highlighting an urgent need for integrated, patient-centered approaches that span several levels of the healthcare system and guarantee no patient falls through the systemic cracks [6], [7]. As a result, health systems around the world—including the Algerian Ministry of Health—are beginning to recognize a vital paradigm shift: for many people, cancer should be treated as a chronic condition rather than just an acute, episodic catastrophe. This change necessitates ongoing, smooth collaboration between specialized

oncology services and primary care physicians. In this changing environment, the General Practitioner's (GP) position has become increasingly important as a crucial part of guaranteeing access to healthcare services, maintaining continuity of care, and offering comprehensive management across the whole cancer care continuum [8], [9], [10].

1.2. The Importance of Collaboration Between Primary Care and Oncology

According to the WHO, strong primary care systems are directly linked to better population health outcomes, increased patient satisfaction, and a marked decrease in needless medical expenses by proactively preventing clinical complications and avoidable hospital stays [7]. In the particular and highly complex field of oncology, the cooperation between primary care physicians and oncology specialists is therefore not only advantageous but absolutely crucial.

Integrated collaboration is necessary to provide smooth transitions between the various, frequently daunting stages of cancer care, such as community screening and prevention, early diagnosis, active targeted treatment, survivorship, and ultimately palliative or end-of-life care. In the healthcare system, general practitioners are frequently the initial point of contact—functioning as the "gatekeepers" for patients entering the medical hierarchy. As a result, they are fundamental to the administration of the first diagnostic work-up, ensuring timely referrals to secondary or tertiary specialists, and securing early cancer identification.

However, their clinical usefulness goes well beyond initial diagnosis. GPs remain essential to the patient's overall care trajectory, especially when it comes to managing co-occurring illnesses like type 2 diabetes, ischemic heart disease, and mental health issues. These comorbidities are not distinct, isolated problems; they have a substantial impact on cancer outcomes, heavily dictating the patient's physiological capacity to withstand harsh systemic cancer treatments and influencing overall survival rates [11], [12], [13].

The World Organization of Family Doctors (WONCA), the Royal College of General Practitioners (RCGP), and the American Academy of Family Physicians (AAFP) are just a few of the esteemed international organizations that have acknowledged this clinical reality. They emphasize the growing and crucial role that general practitioners play in global cancer

control and long-term survivorship care. An increasing amount of academic research indicates that efficient, organized cooperation between general practitioners and oncologists produces observable advantages: it significantly increases continuity of care, heavily decreases the unnecessary duplication of medical services, and greatly improves patient experiences, especially during the delicate transitions between community-based general practice and hospital-based specialist care [8], [10], [14].

1.3. Problem Statement: Fragmented Care and the Need for Coordination

Even if the immense value of integrated care is becoming more widely acknowledged in academia and health policy, the clinical reality for many cancer patients is very different; they usually receive fragmented, highly disjointed healthcare. Inadequate or antiquated referral mechanisms, a pervasive lack of shared multidisciplinary treatment plans, delayed transmission of vital medical information, and consistently poor communication channels between primary care and specialized cancer providers are all common causes of this systemic fragmentation.

These systemic flaws frequently lead to care discontinuity, which leaves patients with profoundly unfulfilled medical and psychological requirements. It simultaneously increases the needless burden on healthcare professionals—who frequently operate in professional isolation—and the patients, who have to independently negotiate a convoluted, intimidating medical system [12], [15], [16].

During the active cancer therapy phase, a vital and dangerous gap frequently occurs. Patients may inadvertently lose entirely contact with their primary care physicians during this time since all clinical attention becomes singular and focused on eradicating the cancer. This separation might result in significant, sometimes fatal gaps in the treatment of pre-existing chronic illnesses, a dangerous disregard for preventative care measures (such as routine screens for other conditions), and a critical lack of the essential psychosocial support that a community-based general practitioner is well-positioned to offer.

On the other hand, the time after active treatment is over frequently creates what literature terms a "survivorship void". A great deal of ambiguity about follow-up obligations is reported by many survivors. They frequently suffer from inadequate survivorship care planning and express confusion over the unclear roles and responsibilities between their general practitioners and their hospital oncologists. Severe psychological anxiety and improper monitoring for late-stage therapeutic side effects can result directly from this ambiguity [17], [18], [19]. The lack of regulated communication channels and formalized collaboration models between primary and specialist care is frequently cited in international literature as the most significant obstacle to the efficient provision of cancer care. These enduring difficulties highlight the vital necessity of redefining, fortifying, and formally institutionalizing the position of the general practitioner in cancer settings, especially by investigating innovative models in which GPs are directly integrated into or alongside medical oncology departments [11], [13], [20].

1.4. Objectives of the Thesis

This thesis's main goal is to thoroughly investigate, evaluate, and clearly define the general practitioner's position in the particular setting of a medical oncology department. It also looks at how this role might successfully close the current dangerous gap between primary and specialist care. To accomplish this overall goal, the specific objectives are as follows:

- To provide a comprehensive overview of current cancer care pathways and to methodically determine the GP's role and contribution at each step of the cancer continuum.
- To critically assess general practitioners' conventional roles in oncology care as well as their developing, contemporary obligations.
- To examine the interpersonal and systemic issues that are present in cooperation and communication between primary care physicians and oncology services.
- To investigate and suggest possible organizational and medical contributions that GPs might make when integrated into oncology departments to improve overall service delivery.

- To evaluate the possible advantages and drawbacks of including general practitioners into medical oncology teams, as well as the effects on patients, healthcare professionals, and the overall effectiveness of health systems [11].

1.5. Methodology Overview

The methodological underpinning of this thesis is a rigorous narrative literature review technique. Using international clinical guidelines, strategic public health policy documents, and peer-reviewed research on cancer care, primary care, and integrated medicine, this method enables a wide and thorough synthesis of various sources regarding modern models of healthcare.

The World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the National Cancer Institute (NCI), the European Society for Medical Oncology (ESMO), and significant professional associations like WONCA, the American Society of Clinical Oncology (ASCO), and the RCGP are important foundational sources for this review [1], [4], [21], [22], [23]. In particular, the study focuses on evaluating communication tactics, examining the dynamics of multidisciplinary collaboration, analyzing successful models of shared care, and synthesizing available information about GP involvement in specialized cancer care. Ultimately, this framework is utilized for finding international best practices, pointing out existing gaps in the literature, and suggesting possible frameworks for the efficient incorporation of general practitioners into medical oncology departments.

CHAPTER TWO:

CANCER CARE PATHWAYS AND THE INTEGRAL PLACE OF THE GENERAL PRACTITIONER

2.1. A Paradigm Shift: Comprehensive Overview of the Cancer Care Continuum

Historically, the medical community's approach to cancer was predominantly episodic, focused intensely on the acute eradication of localized or systemic tumors through surgery, chemotherapy, or radiation [24]. However, in modern oncology, cancer care is increasingly seen as a full, dynamic, and multidimensional continuum rather than as a collection of discrete medical operations. This contemporary continuum comprises several different but intimately related stages, starting well before the patient ever enters a hospital: it begins with proactive screening and prevention, progresses through early detection and diagnosis, navigates the rigors of active treatment and survivability, and ultimately culminates in either long-term monitoring or palliative and end-of-life care [24], [25].

A more nuanced understanding of cancer as a chronic and complex disorder is reflected in this holistic framework. It represents a fundamental paradigm change in medicine, moving resolutely away from the conventional concept of cancer as only an acute, episodic illness that can be definitively "cured" or "treated" in a vacuum [26]. Because patients live longer with the disease and experience lasting physiological changes from their treatments, the illness requires long-term, coordinated care that spans several healthcare system levels and continuously adjusts to the patient's evolving needs over time [26], [27].

Prominent international organizations like the World Health Organization (WHO) and the International Agency for Research on Cancer (IARC) explicitly argue that the effectiveness of

global cancer control strategies depends not only on the availability of advanced specialized care (such as tertiary oncology centers) but also—and perhaps more importantly—on the strength of primary health care systems [28], [29]. These community-level systems must be able to provide patients with seamless, continuous support throughout the entire course of their illness, actively avoiding care fragmentation [30]. Data from the Global Cancer Observatory (GLOBOCAN), which shows a sizable and expanding global population of cancer survivors, strongly indicates the need for an integrated approach [31]. The necessity of maintaining continuity of care that goes much beyond the boundaries of hospital-based treatment settings is further highlighted by this growing demographic [31].

2.2. The GP at the Vanguard: Screening, Prevention, and Early Detection

Before a patient is ever referred to an oncologist, the General Practitioner stands at the absolute vanguard of cancer defense. General Practitioners (GPs) are ideally positioned to play a crucial role in the early identification and screening phase [32]. Operating deeply within the community, they possess unparalleled longitudinal knowledge of their patients' family histories, lifestyle habits, and occupational exposures. GPs are directly in charge of identifying patients with genetic predispositions, carrying out population-based screening programs, and spotting frequently inconspicuous early warning indicators of cancer [32], [33].

In the Algerian healthcare system, where localized polyclinics (*Établissements Publics de Santé de Proximité* - EPSP) serve as the foundation of public health, the GP's role in screening is paramount. Given the geographic vastness of the country and the centralization of specialized oncology centers in northern cities, rural and southern populations rely almost entirely on their local GPs for initial cancer suspicion [34].

Strong, proactive GP involvement at this particular stage is directly linked to earlier diagnosis, according to data from primary care-focused organizations like the Royal College of General Practitioners (RCGP) and the World Organization of Family Doctors (WONCA) [35]. GPs are often the first medical experts to see patients who appear with specific or ambiguous cancer-related symptoms because they act as the "gatekeepers" of the health

system [36]. They are therefore in a crucial, high-stakes position to identify clinical "red flags" and start the proper diagnostic procedures that result in specialized care. Numerous studies show that prompt GP referrals are highly linked to early diagnosis, which is the single most important predictor of better survival for a number of major cancer types [36], [37]. As a result of early detection, diseases are treated when they are most receptive to curative therapy, which reduces diagnostic delays and greatly improves patient outcomes [37].

2.3. Navigating Clinical and Psychological Uncertainty: The Diagnostic Stage

The transition from suspected symptom to confirmed malignancy is a highly volatile period. The diagnostic stage is a crucial turning point in the cancer care process and frequently denotes a time of great uncertainty and psychological distress for the patient [38]. Even if the final tissue diagnosis and comprehensive tumor staging usually take place in the highly specialized domains of secondary or tertiary care, GPs continue to play a crucial role in the coordination of this process [38].

During this turbulent phase, GPs handle the practical and psychological components of the early work-up in addition to mere detection. Within the frequently limited constraints of primary care resources, this involves ordering basic laboratory testing and imaging [39]. The GP's duties include coordinating preliminary investigations, interpreting complex preliminary findings for nervous patients, and offering crucial psychological support to buffer the emotional shock of receiving a possible cancer diagnosis [40]. More significantly, they are crucial in helping patients prepare for what is to come, actively navigating the referral process, and providing continuous emotional support throughout the terrifying phase of diagnostic uncertainty [40], [41].

2.4. Bridging the Void: The GP's Role During Active Treatment

Once the diagnosis is secured, the locus of care shifts heavily toward the hospital. Patients are mostly treated in specialized medical oncology departments throughout the active treatment phase, which may include rigorous, multimodal treatments including chemotherapy, radiation, complex surgery, immunotherapy, or targeted molecular medicines [42].

However, an intense focus on eradicating the tumor often leads to the neglect of the patient's overall physiological health. There are often many difficulties during this stage, such as serious treatment-related toxicities, the acute aggravation of pre-existing chronic illnesses, and significantly increased psychological discomfort [43]. It is generally known that older persons with numerous co-occurring chronic illnesses—including diabetes, cardiovascular disease, and hypertension—make up a sizable number of cancer patients [43], [44].

Because uncontrolled comorbidities can completely prevent patients from receiving potentially life-saving cancer therapies, the optimal management of these conditions is not just incidental. Rather, it is absolutely essential for maximizing treatment tolerance, maintaining quality of life, and improving overall survival outcomes [44]. International recommendations from the American Society of Clinical Oncology (ASCO) and the European Society for Medical Oncology (ESMO) strongly advise continued, organized cooperation with primary care physicians throughout this intense period [45], [46]. In order to safely manage severe side effects, address non-cancer-related health conditions, and guarantee comprehensive patient care that does not overlook the patient's general well-being in the singular quest of tumor treatment, this collaboration is absolutely essential [46].

2.5. Post-Treatment and Survivorship: The Long-Term Commitment

The conclusion of active hospital-based therapy does not signal the end of the cancer journey; rather, it introduces a new, prolonged phase of care. Due to significant, modern increases in survival rates, survivorship care has rightfully become a significant and unique aspect of contemporary oncology as active treatment comes to an end [47].

However, clinical "survival" does not necessarily mean a return to complete baseline health. Survivors sometimes deal with a wide variety of long-term bodily implications (such as neuropathy, chronic fatigue, or organ dysfunction resulting from chemotherapy), severe psychological issues like the debilitating fear of cancer recurrence, and profound social or occupational repercussions associated with their prolonged sickness [48]. Traditionally, long-term monitoring has been a shared duty, albeit one that is frequently disproportionately focused on specialized cancer services in the initial years following treatment [49].

Nonetheless, mounting international data points to a massive paradigm change in favor of GPs playing a bigger position in survivorship, especially for stable patients [50]. Organizations such as the American Cancer Society (ACS) and the National Cancer Institute (NCI) vehemently stress the absolute importance of formalized shared-care models and official, personalized survivorship care plans [51]. In order to actively prevent survivors from being dangerously "lost in transition" after being discharged from the oncology ward, general practitioners are strongly expected to take the lead in long-term follow-up protocols, secondary cancer prevention, and holistic health maintenance [51], [52].

2.6. Palliative and End-of-Life Care: Providing Dignity in the Community

In cases where curative therapies are exhausted or ineffective, the trajectory shifts toward symptom management and preserving dignity. Lastly, general practitioners are absolutely essential in providing deeply compassionate, community-based care at the palliative and end-of-life stages [53].

Contemporary WHO and ESMO guidelines strongly emphasize the immense value of incorporating core palliative care principles early on in the disease trajectory, rather than erroneously saving them solely for the last, terminal stages of life [54]. GPs are uniquely integrated into the patient's family environment, making them indispensable in successfully managing compounding symptom loads (such as severe pain or dyspnea), permitting and guiding challenging discussions about advance care planning, and giving the patient's family strong, continuous support and bereavement networks within their own communities [55], [56].

CHAPTER THREE:

SYSTEMIC FRAGMENTATION AND COMMUNICATION BARRIERS IN ONCOLOGY

3.1. The Historical Mismatch: Acute Care Systems Managing a Chronic Disease

To understand the current fragmentation in cancer care, it is necessary to examine the historical architecture of modern health systems. Historically, secondary and tertiary hospitals were designed to manage acute, episodic health crises—such as infectious disease outbreaks, acute trauma, or distinct surgical interventions [57]. Under this traditional model, the General Practitioner (GP) referred a patient to the hospital for a specific, time-limited intervention, after which the patient was definitively discharged back to community care.

However, monumental advances in medical oncology have transformed cancer from an acute, rapidly fatal illness into a complex, prolonged chronic disease [58]. Patients now live for years, and sometimes decades, undergoing sequential lines of therapy, periods of remission, and maintenance treatments. Despite this paradigm shift in the nature of the disease, the structural design of healthcare systems has remained largely static [59]. When a patient is diagnosed with cancer today, they are absorbed into a tertiary care system that still operates on an acute-care philosophy. A rigid boundary is erected between the community-based GP and the hospital-based specialist, resulting in an "illusion of integration" where care is comprehensive within the hospital walls but entirely disjointed the moment the patient returns to their community [60].

This silo effect is most visibly manifested in the Multidisciplinary Tumor Board (MTB), or *Réunion de Concertation Pluridisciplinaire* (RCP). While the RCP is the gold standard for oncological decision-making—bringing together surgeons, medical oncologists, radiologists, and pathologists—the community GP is almost universally excluded from these meetings [61]. Consequently, profound clinical decisions are made without input from the physician

who best understands the patient's longitudinal health history, complex comorbidities, family dynamics, and socioeconomic constraints [62].

3.2. Information Asymmetry and the Complexity of Modern Therapeutics

The most critical barrier to effective shared care is the severe information asymmetry between the medical oncology department and the primary care clinic. Primary care literature consistently describes the specialized oncology ward as a "black box" [63]. When a patient begins multimodal therapy, the GP is rarely provided with real-time, comprehensive updates regarding the specific treatment protocols, anticipated pharmacologic toxicities, or the timeline of interventions [64].

This lack of communication has become exceptionally dangerous in the era of novel therapeutics. Historically, GPs were familiar with the predictable side effects of classical cytotoxic chemotherapy, such as alopecia, nausea, and myelosuppression. However, the rapid introduction of targeted molecular therapies and immune checkpoint inhibitors (immunotherapy) has drastically altered the toxicity profile of cancer treatment [65]. Immunotherapies can trigger unpredictable, severe immune-related adverse events (irAEs), including pneumonitis, colitis, and complex endocrinopathies (such as immunotherapy-induced thyroiditis or hypophysitis) [66].

If a cancer patient presents to their local GP with an undifferentiated symptom like severe fatigue or diarrhea, the GP operates at a severe disadvantage without access to the patient's specific oncological protocol. Without knowing if the patient is on classical chemotherapy or a novel immunotherapy, it is nearly impossible for the GP to accurately differentiate between a benign gastrointestinal virus, a life-threatening neutropenic infection, or severe autoimmune colitis [67]. Relying on antiquated communication methods—such as delayed, handwritten discharge summaries or vague referral letters—means that critical clinical data is frequently lost or arrives weeks after the GP is required to make a life-altering clinical triage decision [68].

3.3. The Psychological Toll of the "Survivorship Void"

The systemic fragmentation of care reaches its absolute peak following the successful completion of active curative treatment. Patients are routinely discharged from the intense, highly structured surveillance of the medical oncology department back into the community, precipitating a well-documented crisis known as the "survivorship void" [69].

During active treatment, patients are surrounded by a multidisciplinary safety net. The sudden withdrawal of this intense medical attention frequently leaves patients feeling abandoned, leading to high rates of clinical depression, anxiety, and a debilitating Fear of Cancer Recurrence (FCR) [70]. For the GP, receiving a patient back into primary care after years of treatment is deeply challenging without a formalized, universally adopted Survivorship Care Plan (SCP). An SCP is intended to be a comprehensive document outlining cumulative treatment doses, specific schedules for future surveillance imaging, and protocols for managing late-stage toxicities (such as anthracycline-induced cardiotoxicity or radiation-induced secondary malignancies) [71]. However, because of persistent systemic fragmentation, SCPs are rarely generated by busy oncology departments, and even more rarely transmitted successfully to primary care [72].

3.4. Deep Dive into the Algerian Context: Infrastructure and Geography

These theoretical challenges are exponentially magnified when examined through the specific structural and geographical realities of the Algerian healthcare system. Algeria guarantees free public healthcare to its citizens, supported by a vast, decentralized network of primary care centers (*Établissements Publics de Santé de Proximité* - EPSP) designed to provide localized community health [73].

However, the provision of highly specialized medical oncology is starkly centralized. The Algerian National Cancer Plan (*Plan National Cancer*) has made significant strides in building new infrastructure, yet Comprehensive Cancer Centers (*Centres Anti-Cancer* - CAC) and specialized University Hospital departments (CHU) remain predominantly concentrated in the northern coastal metropolises (e.g., Algiers, Oran, Annaba, Blida) [74]. This creates

immense spatial and geographic disparities. Patients residing in the High Plateaus (Hauts Plateaux) or the vast southern Saharan regions must often travel hundreds of kilometers to access radiotherapy or systemic chemotherapy [75].

Because of these punishing distances, rural and southern patients simply cannot return to the northern CAC for the management of intermediate side effects (such as severe dehydration from emesis, or localized infections). They are entirely dependent on their local EPSP and their community GP. This forces Algerian GPs to act as front-line oncological support, a role for which they are frequently under-resourced and under-trained [76].

3.5. Health Information Systems: The Patient as the "Medical Courier"

Compounding the geographic challenges in Algeria is the systemic lack of an integrated, national Electronic Health Record (EHR) network (*Dossier Patient Informatisé*). In the absence of a secure, digital data-sharing infrastructure between the EPSP in the south and the CHU in the north, medical information is entirely reliant on paper-based dossiers [77].

Consequently, the Algerian cancer patient is forced to become the physical "courier" of their own highly complex medical data. Patients carry physical files, biopsy reports, handwritten prescriptions, and radiological imaging on CDs back and forth between public primary care polyclinics, private diagnostic laboratories, and public tertiary oncology wards [78]. If these fragile paper documents are lost, damaged, or incomplete—or if the patient lacks the health literacy to accurately convey their treatment history—both the GP and the oncologist are left completely blind. This fragmented transfer of information is highly vulnerable to human error and directly jeopardizes patient safety [79].

3.6. Clinical and Economic Ramifications

The downstream consequences of this disjointed care are devastating for the national health economy. Clinically, the lack of formal GP integration leads to delayed interventions. Patients developing complications at home may wait until their next scheduled oncology

appointment in a distant city rather than visiting their local GP, leading to severe clinical deterioration and costly, avoidable emergency hospital admissions [80].

Economically, fragmentation drives immense systemic inefficiency. Because hospital-based oncologists and community-based GPs cannot view each other's medical notes or laboratory results, there is a massive duplication of medical services. Patients routinely undergo redundant blood tests, repeated radiological imaging, and overlapping clinical assessments [81]. In a resource-constrained environment, optimizing the utilization of diagnostic and therapeutic resources is paramount. The current systemic fragmentation actively drains the Algerian public health budget while delivering sub-optimal continuity of care to the patient [82]. To resolve these profound structural issues, integrating the GP directly into the organizational framework of the oncology department is a vital, unmet necessity.

CHAPTER FOUR:

REDEFINING THE GP'S ROLE: INTEGRATION MODELS FOR MEDICAL ONCOLOGY DEPARTMENTS

4.1. Moving from Fragmentation to Integration: The Rationale for Embedded GPs

The profound systemic flaws and communication barriers detailed in previous chapters highlight an urgent need for a paradigm shift in how specialized cancer care is delivered. Attempting to improve communication between primary and tertiary care solely through better referral letters or ad-hoc phone calls has proven insufficient [83]. Instead, health systems must pursue profound structural integration. The most promising solution to bridging the perilous gap between the community and the hospital is the physical and organizational integration of the General Practitioner (GP) directly into the medical oncology department [84].

Integrating a GP into a specialized oncology team operates on the principle of "shared care" not as a distant concept, but as an immediate, co-located reality. In this model, the GP does not replace the medical oncologist; rather, they serve as an essential complementary force [85]. While the oncologist focuses intensely on tumor biology, complex systemic regimens (chemotherapy, immunotherapy), and disease eradication, the integrated GP focuses holistically on the patient. This structural realignment ensures that the patient's overall physiological and psychological well-being is not sidelined during the aggressive pursuit of cancer treatment [86].

4.2. The Emergence of the "Onco-Generalist" (GP in Oncology)

Internationally, several advanced healthcare systems (notably in Canada, the United Kingdom, and Australia) have successfully pioneered this concept, officially creating the role of the "General Practitioner in Oncology" (GPiO) or "Onco-Generalist" [87]. These are community-trained family physicians who spend a dedicated portion of their clinical time working physically within comprehensive cancer centers.

Within the medical oncology department, the GPiO assumes several critical responsibilities. Firstly, they act as the triage and symptom-management expert. When patients present to the oncology day-ward with acute toxicities (such as severe nausea, mucositis, or pain flares), the GPiO can rapidly assess and manage these issues, freeing the medical oncologist to focus on complex prescribing and tumor assessment [88]. Secondly, the GPiO frequently runs dedicated survivorship clinics. By shifting stable, post-treatment patients away from the oncologist and toward the GPiO, specialized departments can drastically reduce their overwhelming outpatient waiting lists, allowing new patients to be seen much faster [89]. Finally, the embedded GP acts as the ultimate "translator" and liaison for the patient's community GP, ensuring discharge summaries and follow-up protocols are written in a way that is highly actionable for primary care [90].

4.3. Managing Comorbidities: The GP’s Core Competency on the Ward

One of the most vital clinical functions of an integrated GP within an oncology department is the rigorous management of non-cancer comorbidities. An aging demographic dictates that a significant majority of cancer patients present with pre-existing chronic illnesses, such as type 2 diabetes, essential hypertension, chronic obstructive pulmonary disease (COPD), or ischemic heart disease [91].

The introduction of highly toxic antineoplastic agents frequently destabilizes these pre-existing conditions. For example, the administration of high-dose corticosteroids as antiemetics routinely causes severe hyperglycemia in diabetic patients, while certain chemotherapies (like anthracyclines) carry high risks of cardiotoxicity that can precipitate

heart failure [92]. Medical oncologists, while experts in managing the tumor, often lack the specialized primary care focus—and the clinical time—required to delicately titrate antihypertensive medications or adjust insulin sliding scales during active treatment [93].

The embedded GP fills this exact void. By actively monitoring the patient's holistic health, the GP prevents avoidable treatment interruptions caused by decompensated comorbidities [94]. This concurrent care model drastically improves the patient's ability to tolerate aggressive treatments, thereby directly enhancing their overall survival prognosis and quality of life.

4.4. A Proposed Model for the Algerian Context: The "Liaison GP"

Applying this model to the Algerian healthcare system requires thoughtful adaptation to local realities, particularly the immense geographic distances and the heavy centralization of specialized *Centres Anti-Cancer* (CAC) in the northern *wilayas* (provinces) [95]. A direct replication of Western models is insufficient; Algeria requires a highly networked "Liaison GP" model.

Under this proposed framework, public hospitals (CHU) and CACs would formally recruit dedicated Liaison GPs to their medical oncology staff. The primary role of the Liaison GP in Algiers, Oran, or Annaba would be to act as the central clinical node connecting the tertiary center with the vast network of *Établissements Publics de Santé de Proximité* (EPSP) spread across the High Plateaus and the Saharan south [96].

When a patient from a southern region (e.g., Tamanrasset or Adrar) is discharged back home after a cycle of chemotherapy, the hospital-based Liaison GP would initiate direct contact with the patient's local community GP in the EPSP. They would provide a clear, localized surveillance plan, detailing exactly which blood tests to run and what specific toxicities to anticipate. Furthermore, in the absence of a national Electronic Health Record (EHR), the Liaison GP would serve as a dedicated, reachable point of contact via a secure tele-expertise network [97]. If the community GP in the south encounters a complex complication, they can immediately consult the Liaison GP at the CAC, avoiding the need to subject the fragile

patient to a grueling, 1,000-kilometer ambulance transfer for a medically manageable issue [98].

4.5. Overcoming Barriers: Education, Capacity Building, and Policy

Transitioning to this integrated model in Algeria faces several significant barriers, primarily concerning medical education and professional boundaries. Historically, the Algerian medical curriculum sharply divides general medicine from clinical specialties, often leaving GPs feeling under-equipped, intimidated, and hesitant to involve themselves in the highly specialized realm of oncology [99].

To overcome this "knowledge barrier," the Algerian Ministry of Health and the Ministry of Higher Education must collaborate to institutionalize targeted Continuous Medical Education (CME) and specialized postgraduate diplomas (*Diplôme Inter-Universitaire* - DIU) in "Primary Care Oncology" [100]. This specialized training would empower GPs with the clinical confidence required to manage post-treatment survivorship, basic palliative care, and acute toxicity triage.

Furthermore, health policy must evolve to financially and structurally validate this role. The integration of GPs into oncology departments must be formalized through official hospital statutes, ensuring these practitioners are recognized as vital members of the Multidisciplinary Tumor Board (RCP) rather than subordinate assistants [101]. By decentralizing the follow-up process and empowering the primary care workforce, the Algerian public health sector can drastically optimize its resource utilization, reduce the crushing congestion in major cancer centers, and deliver a truly equitable, patient-centered continuum of care.

GENERAL CONCLUSION

1. Synthesis of the Research and Thematic Recapitulation

The investigation undertaken throughout this thesis addresses one of the most critical structural challenges facing modern healthcare systems: the profound and systemic fragmentation of the cancer care continuum. Historically, the medical community approached neoplastic diseases through a purely acute, episodic lens. The clinical focus was almost exclusively directed toward localized, hospital-centered eradication via radical surgery, conventional cytotoxic chemotherapy, or targeted ionizing radiation.

However, as synthesized in the preceding chapters, monumental advances in tumor biology, early diagnostic modalities, and novel systemic therapies—most notably targeted molecular agents and immune checkpoint inhibitors—have fundamentally transformed the epidemiological and clinical profile of cancer. Today, cancer can no longer be accurately classified as a simple acute crisis; it has evolved into a complex, multi-year, and often life-long chronic pathology.

This transformation demands a parallel paradigm shift in the architecture of healthcare delivery. An acute care infrastructure, designed around isolated medical operations, is inherently unequipped to support a patient through a decades-long journey marked by alternating periods of active treatment, maintenance therapy, prolonged survivorship, and potential palliative transition. The evidence compiled in this work demonstrates that the traditional, rigid separation between community-based primary care and tertiary hospital-based oncology departments is not merely an administrative inconvenience; it is a clinical liability that actively compromises patient safety, drives down quality of life, and degrades overall survival outcomes.

At the absolute center of this structural void stands the General Practitioner (GP). Despite possessing unparalleled longitudinal knowledge of the patient's baseline physiology,

psychological resilience, familial dynamics, and socioeconomic context, the community physician has been progressively marginalized by the hyper-specialization of modern oncology. Once a patient enters the tertiary hospital system, the primary care provider is frequently excluded from the loop of clinical data and therapeutic decision-making. This thesis has thoroughly examined this communication gap—often described as the clinical "black box"—and has proposed a definitive, structurally integrated model to dismantle these professional silos and unify the care continuum.

2. The Algerian Perspective: Resolving the Geographic and Spatial Inequality Equation

When these universal challenges of care fragmentation are cross-referenced with the unique administrative, geographic, and infrastructural realities of the Algerian health sector, the necessity for structural reform becomes even more urgent. The People's Democratic Republic of Algeria maintains a profound constitutional and socio-political commitment to providing free, accessible healthcare to all citizens. This commitment is supported by an expansive, highly decentralized network of primary care centers (*Établissements Publics de Santé de Proximité* - EPSP) and polyclinics, which serve as the frontline of public health across the nation's diverse territories.

However, the delivery of highly specialized tertiary oncology services remains starkly centralized. Despite the commendable efforts of successive national health strategies, including the structural expansions under the *Plan National Cancer*, the country's Comprehensive Cancer Centers (*Centres Anti-Cancer* - CAC) and major University Hospital Centers (CHU) are overwhelmingly concentrated within the northern, high-density coastal metropolises such as Algiers, Blida, Oran, and Annaba. This infrastructural centralization generates severe geographic and spatial disparities. Patients residing in the vast expanses of the High Plateaus (*Hauts Plateaux*) and the deep southern Saharan *wilayas* (such as Tamanrasset, Adrar, Illizi, and Béchar) must routinely travel hundreds or even thousands of kilometers to undergo specialized therapeutic protocols.

PART TWO: PRACTICAL

CHAPTER FIVE:

STUDY SETTING AND METHODOLOGY

5:1. Description of the Oncology Department

This study was conducted in the oncology department of [Badji Mokhtar-Annaba University], in April 2026, which provides specialized cancer care including chemotherapy, patient follow-up, supportive care, and multidisciplinary management.
The department involves collaboration between oncologists, residents, nurses, pharmacists, and general practitioners to ensure continuity of care and comprehensive patient management.

5:2 Study Design

A descriptive cross-sectional study was conducted using a structured questionnaire distributed to healthcare professionals working in the oncology department.
The survey aimed to evaluate the role of general practitioners in oncology care and identify challenges in coordination between primary and specialized care.
Data were collected using an online Google Forms questionnaire.

5:3 Population Studied

The study population included general practitioners and residents working in the oncology department.
A total of 20 participants completed the questionnaire.

5:4 Tools Used

Data collection was performed using a structured questionnaire consisting of demographic information, questions regarding the GP's role in oncology, care coordination, perceived challenges, and suggestions for improvement.

CHAPTER SIX: RESULTS

6:1 Characteristics of Participants

A total of 20 healthcare professionals participated in the study. Most participants were female (approximately 70%), while males represented around 30%.

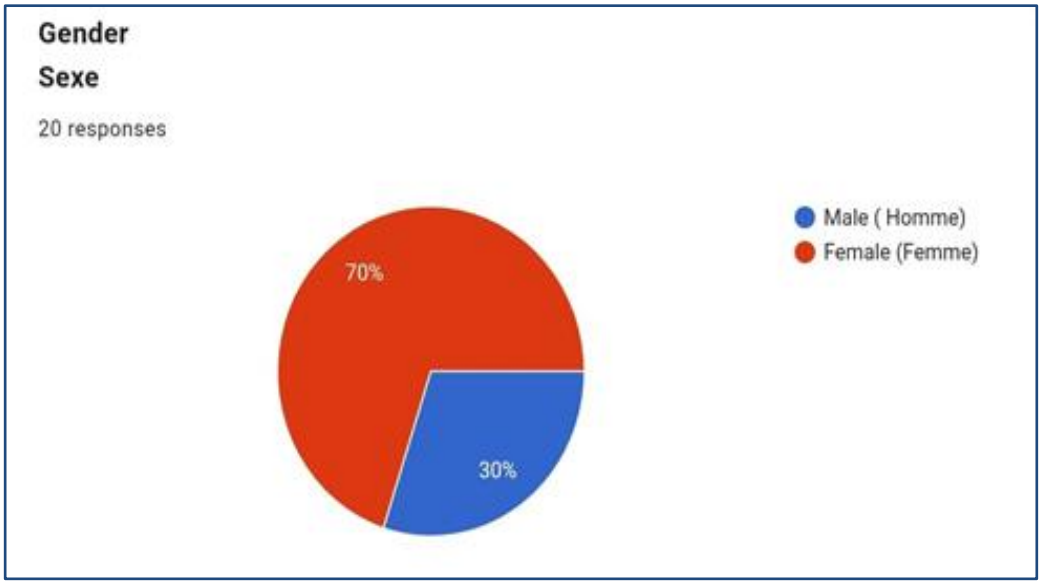


FIG1.Repartition by gender

The majority of participants were aged between 30–40 years, followed by participants younger than 30 years old. Most respondents were general practitioners with 2–5 years of professional experience.

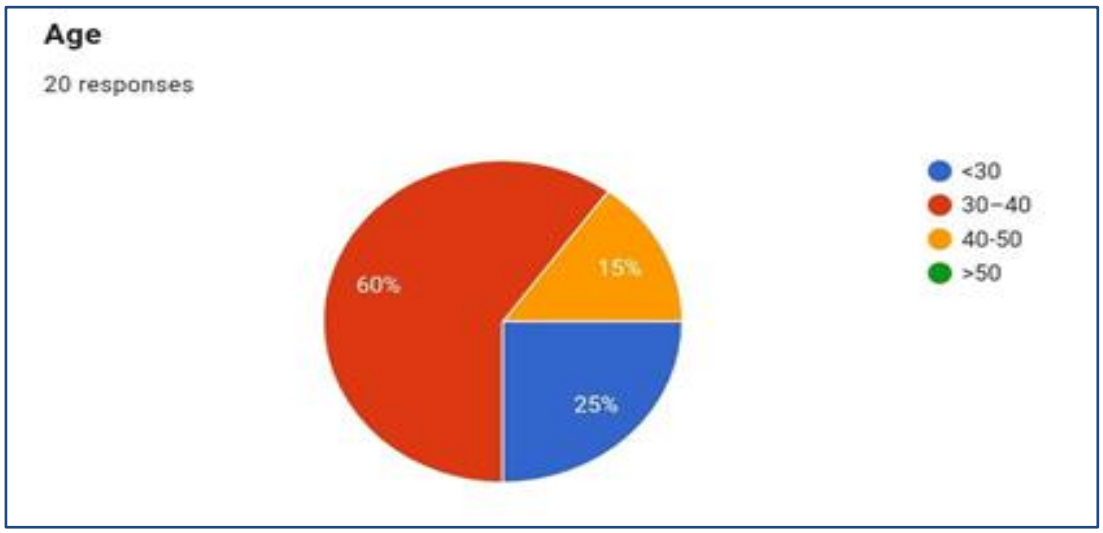


FIG2.Repartition by age

Regarding oncology department experience, most participants had between 1–3 years of experience, while a smaller proportion had more than 3 years of experience.

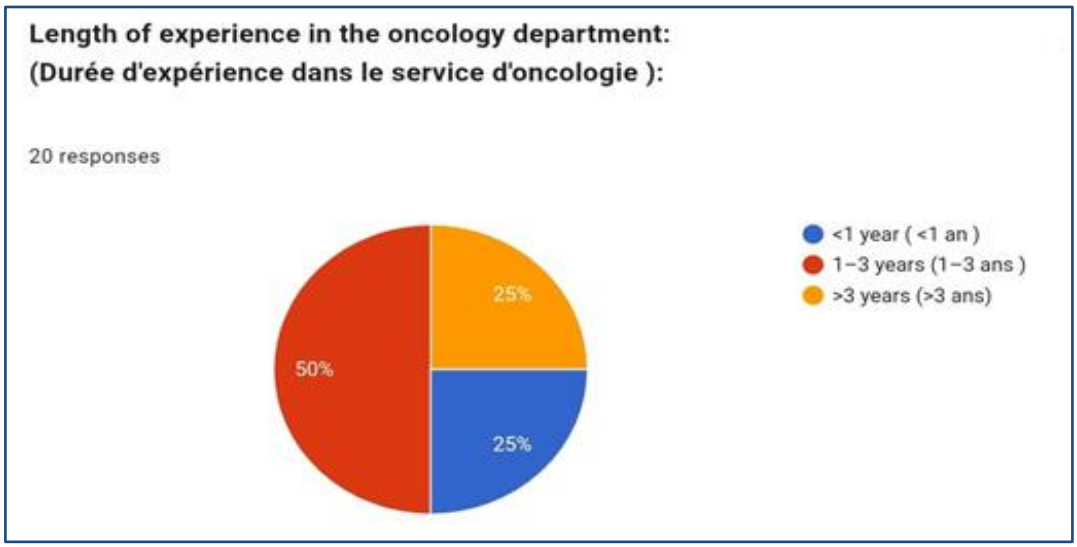


FIG3.Length of experience

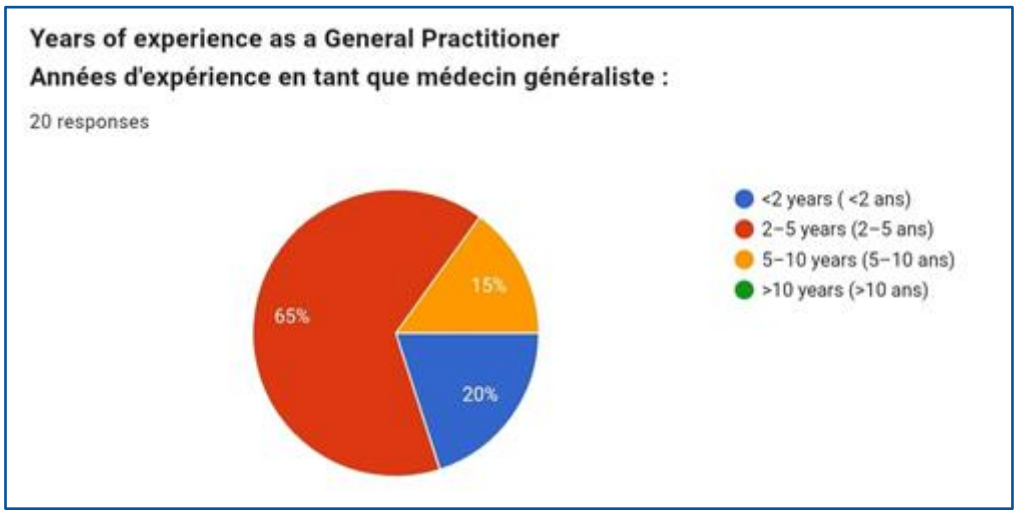


FIG4.Years of experience

The vast majority of the study population consisted of General Practitioners (GPs: 95%, n° = 19), with Residents making up the remaining 5% n°= 1) of the cohort.

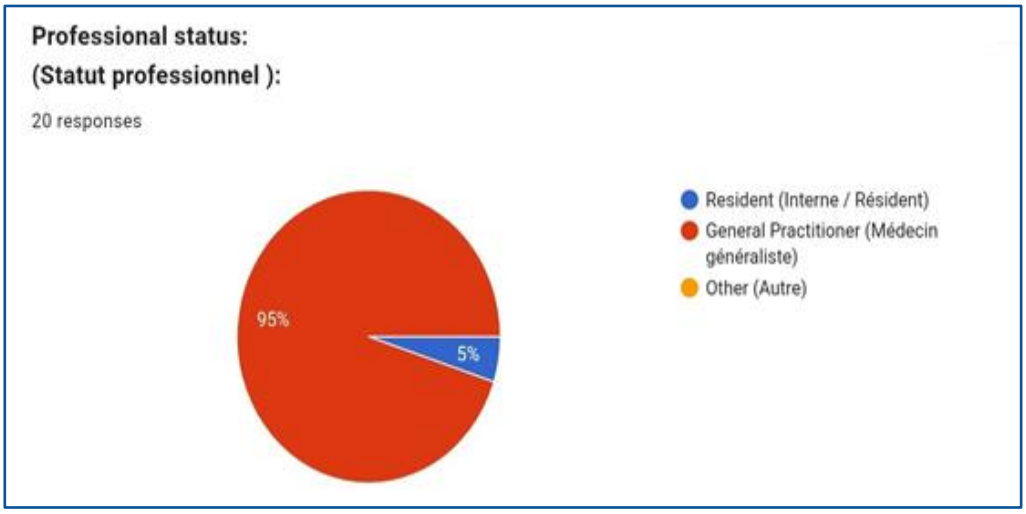


FIG5. Professional status

2. Integration in oncology department:

In terms of academic and clinical background, 70% (n° = 14) of respondents reported receiving specific training in oncology, whereas 30% (n° = 6) had no specialized training. Among those who did receive specific training (n° = 14), the primary pathway was a practical internship (71.4%, n° = 10), followed by equal distributions of university training (14.3%, n° = 2) and continuing medical education (14.3%, n = 2). When asked to self-evaluate their oncology competence, the majority rated it as moderate 60%, n° = 12), while 20% (n° = 4) rated it as good and 20% (n = 4) as excellent. No participants rated their competence level as low.

Table 1: Type of Training and Self-Rated Competence

Training Metrics	Category	Percentage (%)	Count (n)
Type of Training ***(Sub-sample, n° = 14)***	Practical Internship	71.4%	10
	University Training	14.3%	2
	Continuing Medical Education	14.3%	2
Self-Rated Competence Level ***(Total Sample, N = 20)***	Low	0.0%	0
	Moderate	60.0%	12
	Good	20.0%	4
	Excellent	20.0%	4

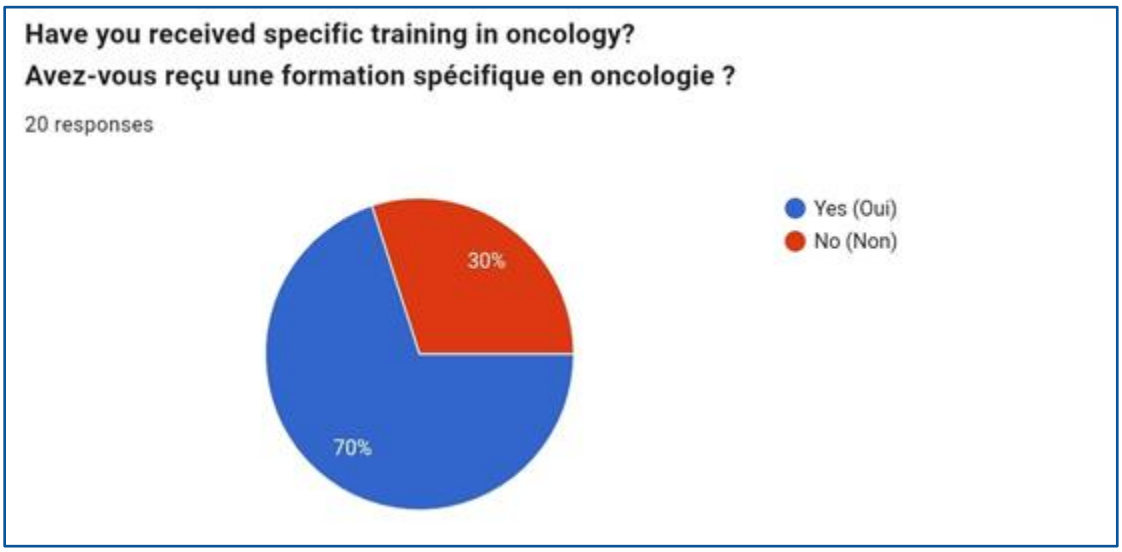


FIG6. Specific training

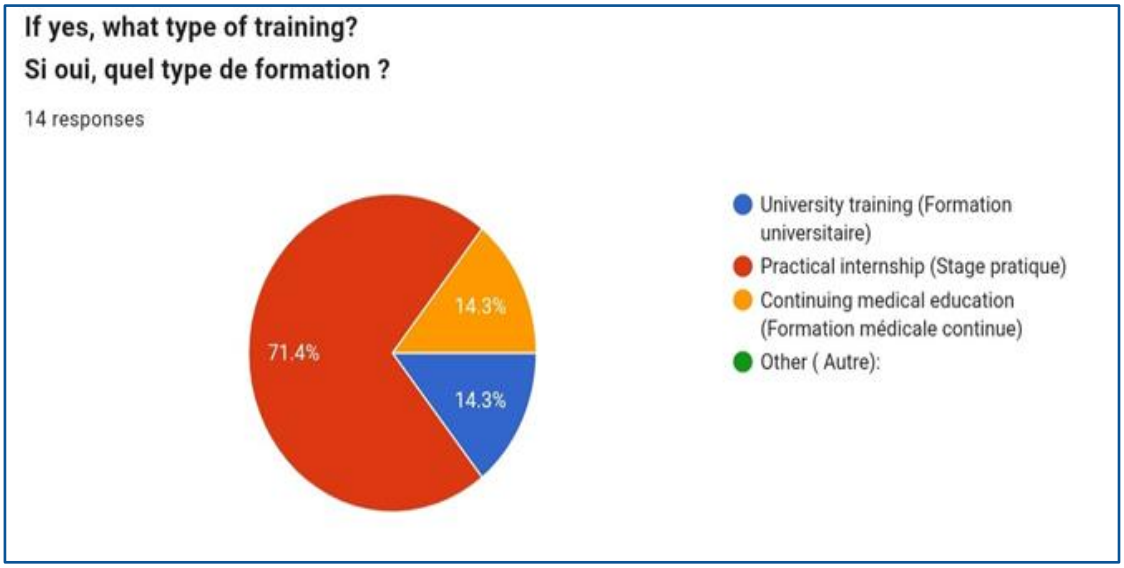


FIG7. Type of training

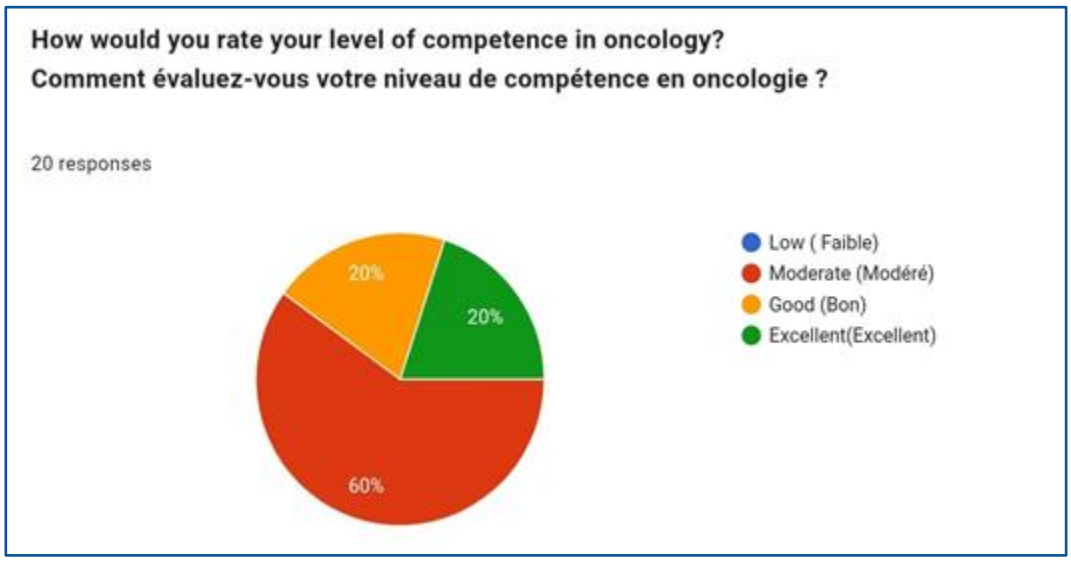


FIG8. Level of competence

6:2 Perceptions of the GP's Role in Oncology

The overwhelming majority of respondents 95% ,(n° = 19) agreed that general practitioners play a highly critical role in oncology care settings, while only 5% (n° = 1) held a dissenting view.

When analyzing their daily functional activities within the department, clinical follow-up of patients was identified as the primary responsibility by 60% (n° = 12) of participants. Other responsibilities included the management of treatment side effects 20% (n° = 4), therapeutic patient education (10%, n° = 2), and palliative care (5%, n° = 1).

Participants identified several key areas where their contribution is most vital. The highest-rated areas were global patient follow-up 75% (n° = 15), followed closely by the patient–doctor relationship 70% (n° = 14), supportive care 65% (n° = 13), and care coordination 55%, n° = 11).

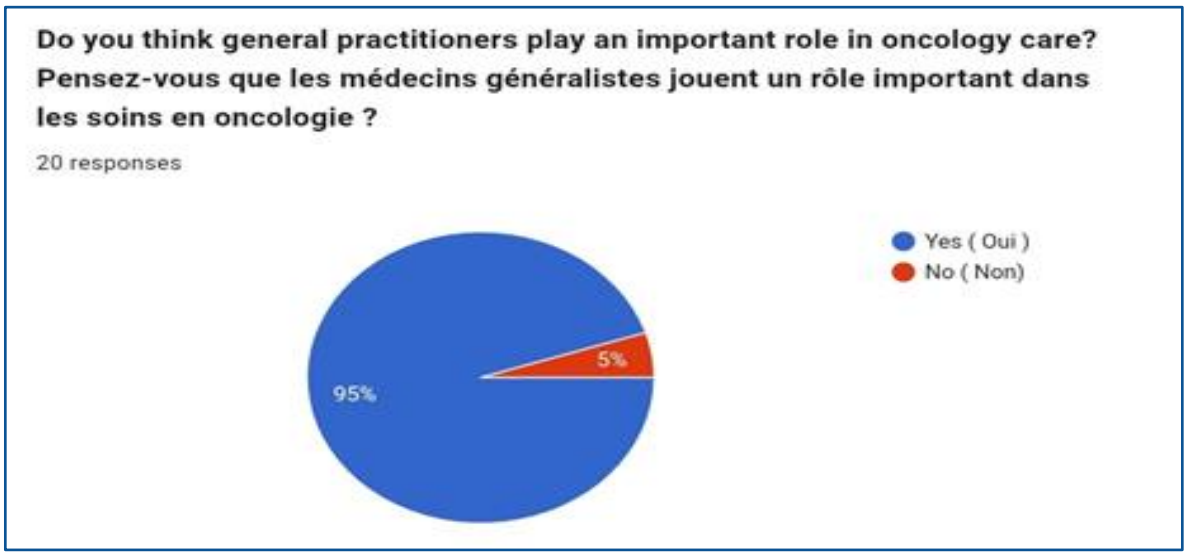


FIG9.The importance of GP role

The majority of respondents considered general practitioners to play an important role in oncology care, especially in global patient follow-up, patient–doctor relationships, supportive care, and coordination between healthcare providers.

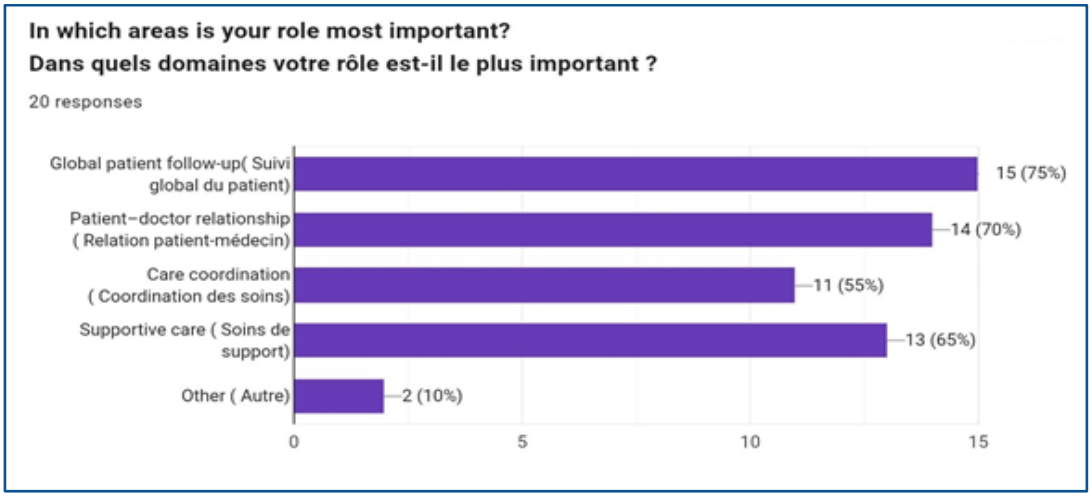


FIG10 .Areas of roles

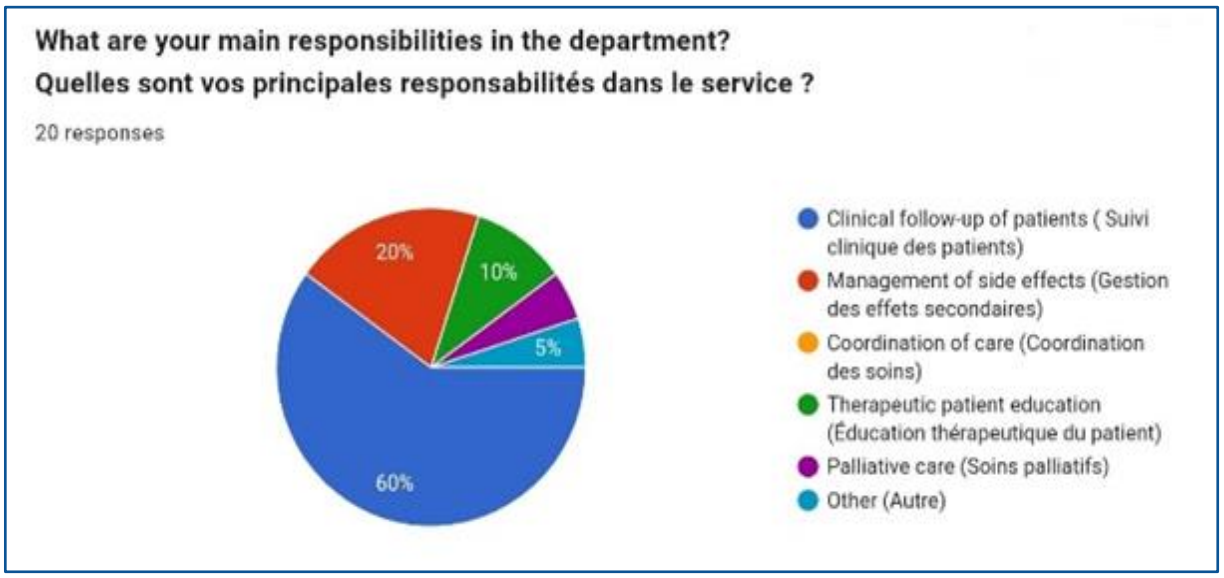


FIG11. Main responsabilities in the department

6:3 Identified gaps in collaboration

Collaborative vulnerabilities were frequent. The data shows that 70% (n° = 14) of respondents felt clear structural limitations regarding their role inside the oncology department. Heavy workload emerged as the dominant challenge, cited by 60% (n° = 12) of the sample. Other reported difficulties included communication issues (15%, n° = 3), a general lack of resources (10%, n° = 2), lack of training (5%, n° = 1), and miscellaneous factors (10%, n° = 2).

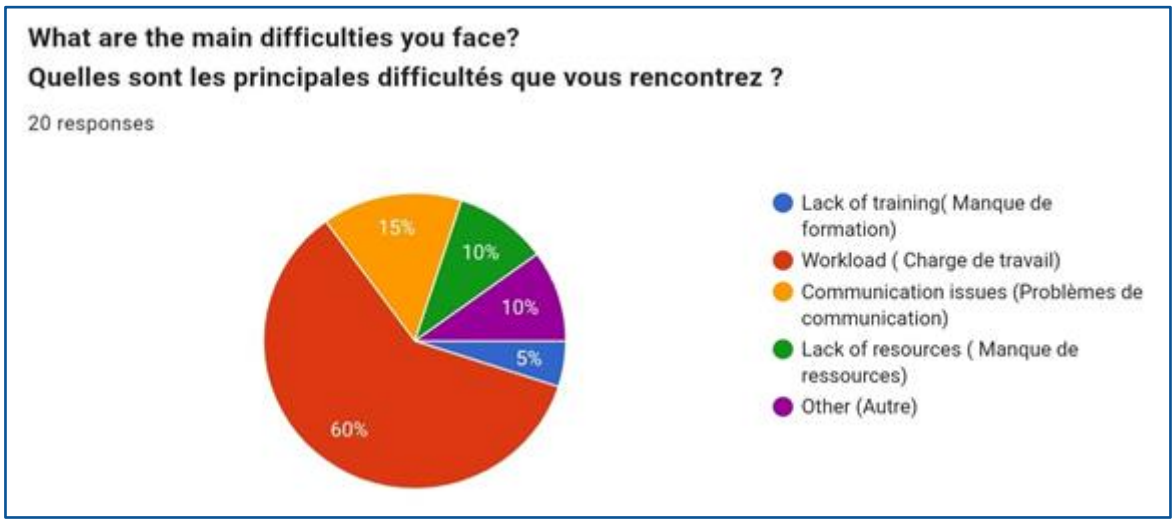


FIG12. Main difficulties

Many participants also reported feeling limitations in their role within the oncology department.

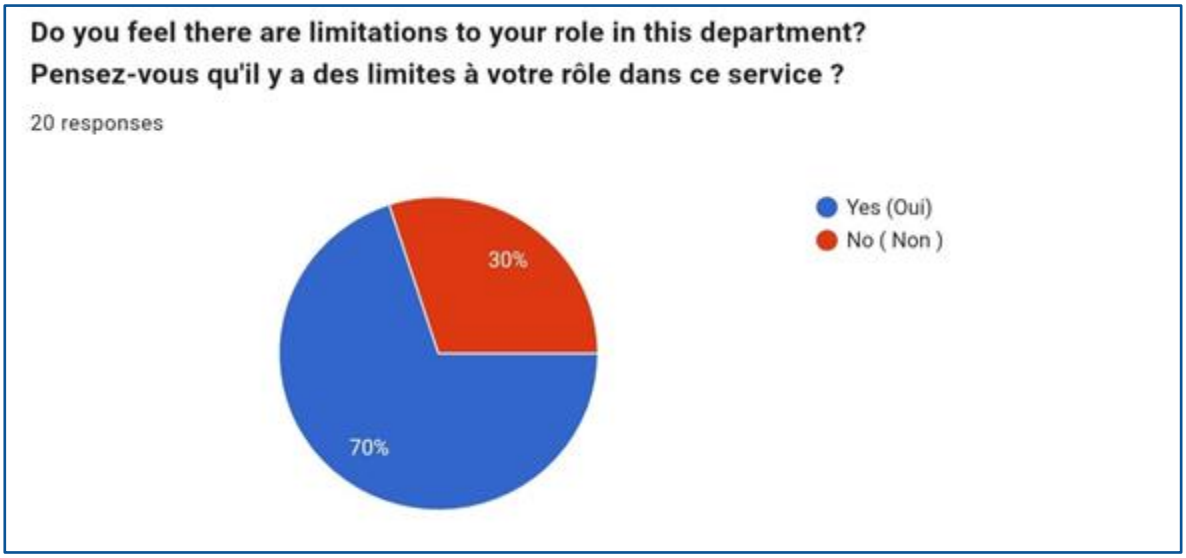


FIG13.Limitation to the role of GP

Integration with multi-professional hospital activities was low. Only 15% (n° = 3) of respondents stated they "always" participated in multidisciplinary team meetings (MDT/RCP), while 70% (n° = 14) reported only "sometimes" participating, and 15% (n = 3) indicated they "never" attend. Similarly, involvement in therapeutic decision-making was

highly constrained, with 75% (n° = 15) indicating that they are not involved, compared to just 25% (n° = 5) who are.

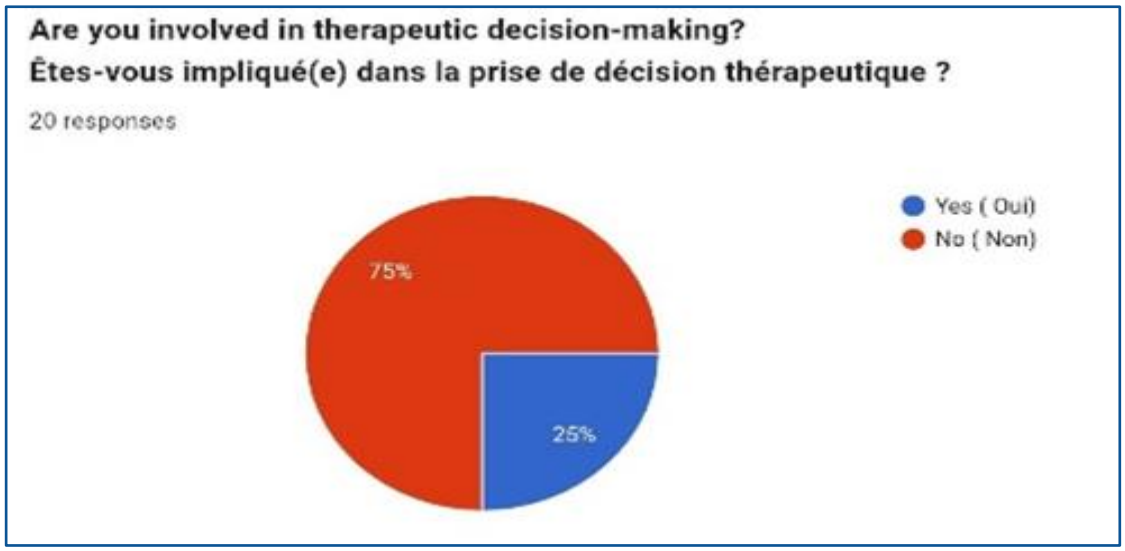


FIG14. Involvement in therapeutic decision making

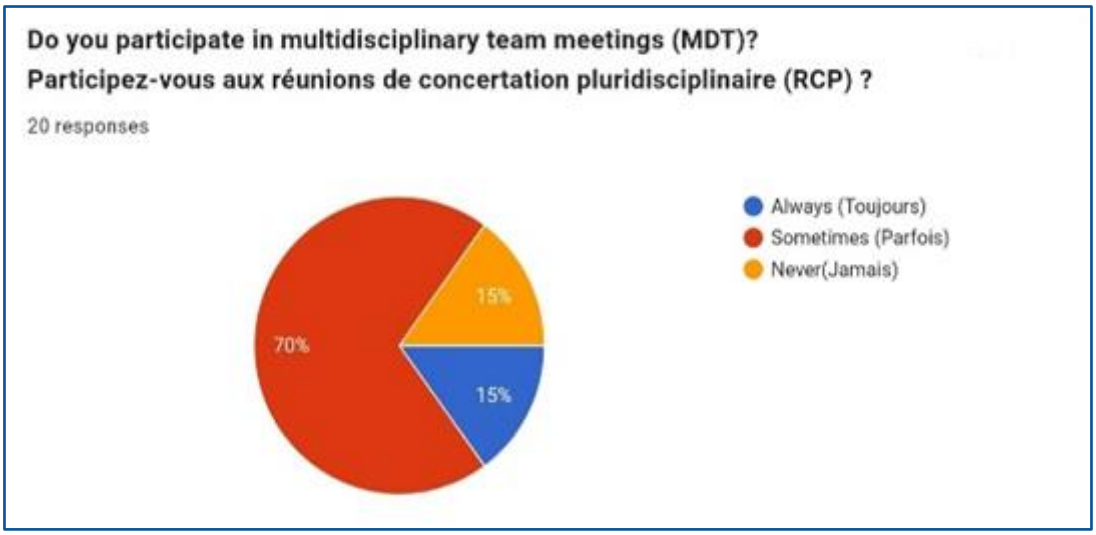


FIG15. Participation in multidisciplinary team meeting

On external networks, hospital-to-primary-care communication relies heavily on traditional instruments. Respondents indicated using written reports (75%, n°= 15), phone calls (60%, n° = 12), and direct medical records (60%, n° = 12) as their primary channels. Overall, the continuity of care between primary and specialized hospital facilities was

evaluated as average by 60% (n° = 12) of participants and good by 40% (n° = 8). None of the participants rated this continuity as poor or very good.



FIG16. Contact with external general practitioners

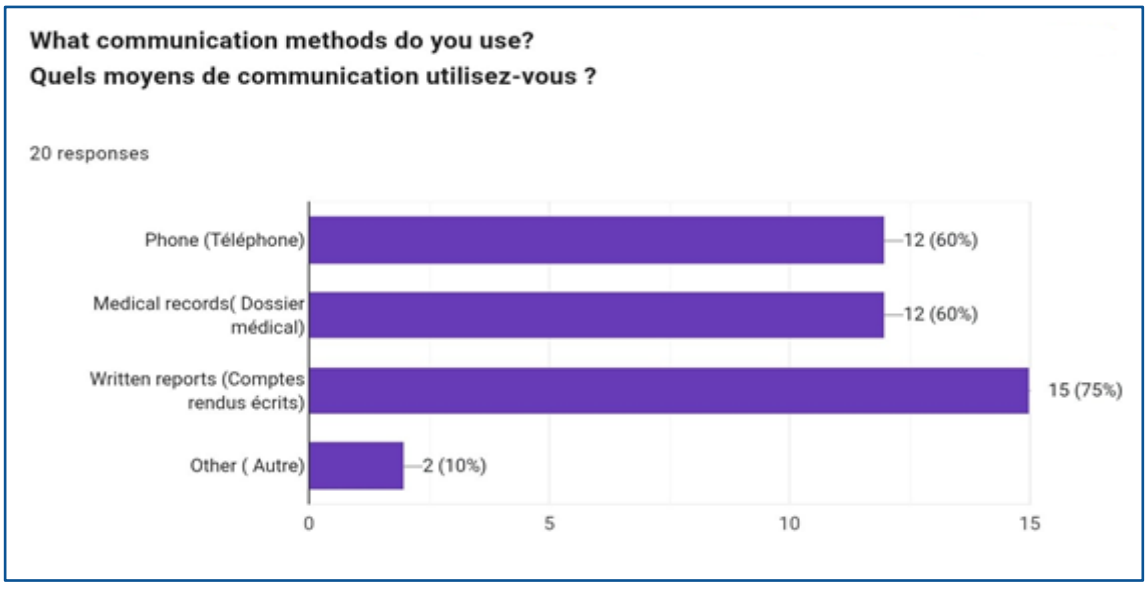


FIG17. Communication methods

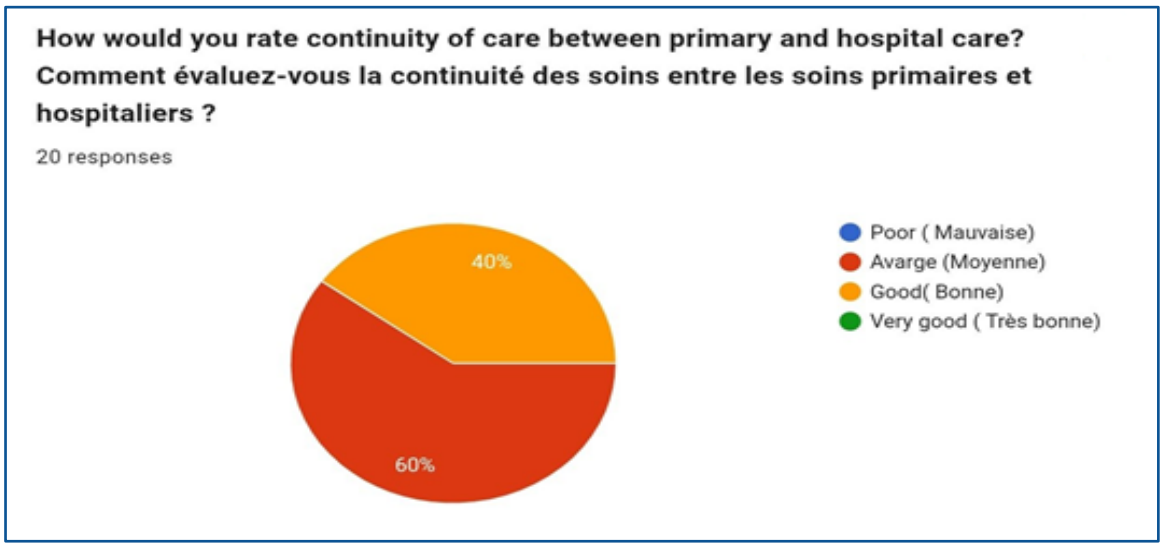


FIG18. Evaluation of continuity of care between primary and hospital care

6:4 Practical Needs and Expectations

To bridge the operational gaps identified in clinical practice, respondents offered concrete structural solutions. Half of the participants (50%, n° = 10) emphasized that providing more specialized training is the single most critical modification required. Additionally, 25% (n° = 5) demanded a clearer definition of roles within the department, 15% (n° = 3) targeted the implementation of better communication networks, and 10% (n° = 2) requested strengthening the frontline healthcare team.

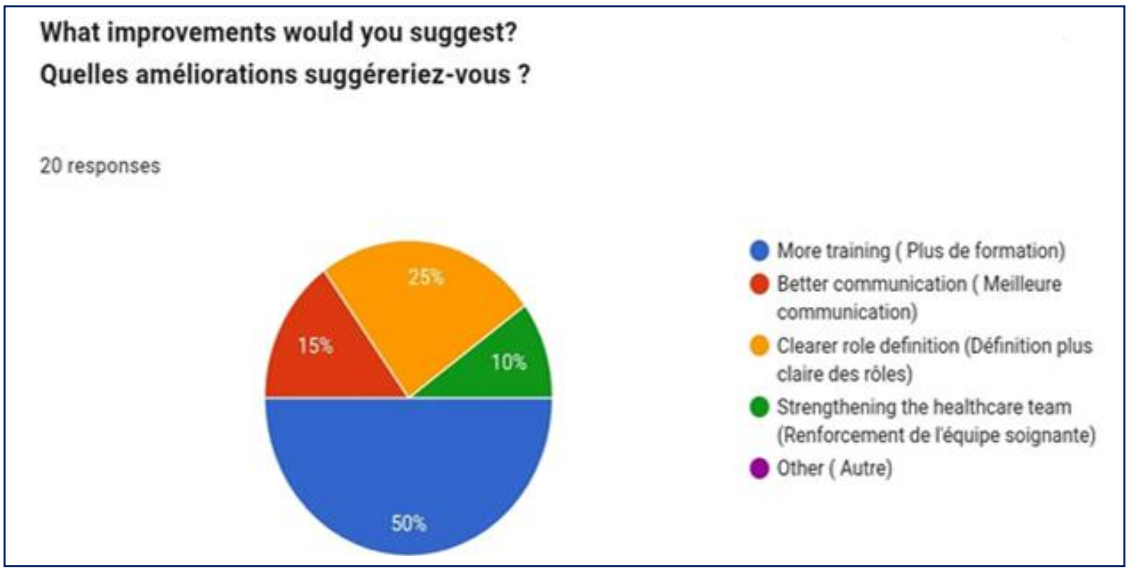


FIG19. Improvements suggested

6:5 Quantitative and/or Qualitative Analyses

All quantitative calculations throughout this chapter were compiled utilizing descriptive statistics.

Due to the exact study cohort size (n° = 20), percentages provide an accurate baseline representation where each single individual corresponds to exactly 5% of total volumetric trends for whole-group variables.

Distribution variables across training, daily operational activities, multidisciplinary interaction levels, and prospective systemic requests demonstrate a clear need for increased educational resources and formalized role parameters for general practitioners operating within specialized oncology infrastructures.

CHAPTER SEVEN: DISCUSSION

7:1 Interpretation of Findings

This study highlights the growing and indispensable role of general practitioners (GPs) and residents in specialized oncology care. Participants perceived their primary responsibilities as essential to holistic patient care, specifically in clinical follow-up, management of treatment-related toxicities, therapeutic education, and the provision of supportive care. However, the findings also shed light on a significant paradox: while GPs are critical to maintaining continuity of care, their integration into the oncology department is severely hindered by systemic barriers. High workloads, inadequate communication channels, and a lack of oncology-specific training frequently isolate them from core therapeutic decision-making.

7:2 Comparisons with Literature

The findings of this study align closely with the broader international literature regarding the integration of primary care into oncology pathways.

- **Role of GPs in Oncology:**

Similar to our findings, the literature demonstrates that primary care physicians have a profound impact on patient follow-up, and shared-care models can yield excellent outcomes for cancer survivors [102] .Furthermore, oncologists clearly distinguish between their own sphere of evidence-based treatment and the GP's sphere of psychosocial caring, viewing the GP as an essential "person of trust" for the patient's holistic well-being [103]

- **Communication Barriers:** The communication difficulties reported by our participants—such as relying on delayed written reports or phone calls—are well-documented systemic issues. Effective shared cancer follow-up care relies on the reciprocal, two-way transfer of clinical information, yet GPs frequently report not receiving quality or timely information from oncologists [104].

- **Integration and Teamwork:**

Integrating GPs into the broader oncology team is a complex challenge. A lack of structural coordination and dedicated communication can isolate primary care providers, emphasizing the need to view cancer care as a collaborative team effort supported by shared medical records and survivorship care plans [105].

7:3 Strengths and Limitations of the Study

Strengths of the Study:

The primary strength of this study lies in its direct evaluation of professionals actively working within the oncology setting at Badji Mokhtar-Annaba University. It captures real clinical experiences and provides highly practical, localized insights into healthcare organization and care coordination, making the findings directly relevant to improving departmental workflows.

Limitations of the Study:

Despite the valuable insights gained, this study has several limitations that must be carefully considered. Primarily, the small sample size of 20 participants restricts the statistical power of the research and the extent to which the quantitative data can be generalized. Additionally, because it is a single-center study conducted solely within one oncology department, the findings may reflect institutional-specific practices rather than the broader national reality of primary care and oncology integration. Furthermore, the reliance on self-reported perceptions introduces the potential for subjective bias, as the responses reflect the participants' personal experiences rather than objective measurements of clinical outcomes or administrative data.

7:4 What the results mean for daily practice in oncology and primary care

Improving collaboration between oncologists and general practitioners is not merely an administrative goal; it is a clinical necessity. The data suggests that by addressing communication gaps and training deficits, the oncology department could significantly enhance patient monitoring, reduce hospital readmissions due to unmanaged side effects, and ensure a seamless transition between hospital-based treatments and community-based primary care.

CHAPTER EIGHT: RECOMMENDATIONS

Based on the empirical findings of this study and supported by current literature on shared oncology care, the following recommendations are proposed to optimize the integration of general practitioners (GPs) into the oncology department. These interventions aim to address the specific structural and educational barriers identified by the participants.

8.1 Strengthening Interdisciplinary Collaboration and Communication

- **Recommendation:** Establish regular, dedicated communication channels between the oncology department and primary care physicians, and formally integrate GPs into Multidisciplinary Team (MDT) meetings.
- **Proof/Justification:** The results of this study explicitly identified "communication difficulties" as a primary challenge, with GPs relying on delayed methods such as written reports and phone calls. Furthermore, participants reported only occasional involvement in MDT meetings. The literature strongly supports this recommendation: emphasize that effective shared cancer care requires reciprocal, two-way transfer of clinical information. Excluding GPs from real-time collaborative discussions marginalizes their role and fragments patient care.

8.2 Developing Targeted Training Programs

- **Recommendation:** Organize structured Continuous Medical Education (CME) programs and oncology-focused workshops specifically tailored for residents and general practitioners.
- **Proof/Justification:** Participants frequently cited "insufficient oncology-specific training" as a core reason for feeling limited in their roles within the department. To safely manage treatment side effects and provide adequate therapeutic education—which participants identified as their main responsibilities—GPs must be equipped with up-to-date oncological knowledge. Studies) prove that when primary care physicians are properly supported and educated, their involvement yields highly

effective follow-up care and significantly improves the quality of life for cancer survivors.

8.3 Implementing Organizational and Technological Improvements

- **Recommendation:** Transition to shared electronic medical records (EMR) and implement standardized, structured referral and follow-up pathways (e.g., survivorship care plans).
- **Proof/Justification:** The study highlighted that continuity of care between hospital and primary settings is currently only "average to good" and heavily hindered by heavy workloads. Transitioning to a shared EMR system reduces the administrative burden of tracking down patient histories. As Keating and Malin (2011) argue, providing cancer care is a "team sport"; it cannot function efficiently without structural coordination tools. Shared electronic records ensure that both the oncologist and the GP have immediate access to the same clinical data, thereby closing communication gaps and preventing adverse events related to unmanaged toxicities.

8.4 Directions for Future Research

- **Recommendation:** Conduct larger, multicenter studies across different regions to evaluate the clinical impact of GP involvement in oncology care.
- **Proof/Justification:** This recommendation is directly proved by the limitations of the current study. Because this research was restricted to a single center with a small sample size of 20 participants, the findings reflect a localized reality. Larger multicenter studies are essential to validate these perceptions on a national scale, generate highly generalizable data, and quantitatively measure how GP integration affects long-term patient survival and satisfaction rates.

CHAPTER NINE: CONCLUSION

This study solidifies the premise that general practitioners (GPs) are an indispensable asset within the oncology care continuum, serving as a critical bridge between specialized hospital treatments and community-based primary care. As demonstrated by the findings at Badji Mokhtar-Annaba University, GPs already shoulder significant responsibilities, particularly in clinical follow-up, the management of therapeutic toxicities, and the provision of holistic supportive care.

Despite these vital contributions, the study unequivocally proves that systemic and structural barriers currently prevent GPs from reaching their full clinical potential. The data highlights that heavy workloads, reliance on fragmented and outdated communication methods, and a distinct lack of targeted oncological training leave these essential practitioners isolated from multidisciplinary decision-making. Consequently, while the foundation for shared care exists, the actual continuity of care remains vulnerable to informational gaps.

Ultimately, the successful integration of primary care into oncology requires more than just acknowledging the GP's role; it demands urgent, actionable modernization of the healthcare infrastructure. By implementing shared electronic medical records, formalizing GPs' participation in multidisciplinary team meetings, and establishing continuous medical education (CME) programs, the oncology department can overcome these identified barriers. Doing so will not only empower general practitioners but will fundamentally enhance healthcare efficiency, reduce treatment-related complications, and ensure a higher standard of continuous, patient-centered cancer care.

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Abstract

Background: This study evaluates the role of general practitioners (GPs) in oncology care and identifies the challenges in care coordination between primary and specialized settings.
Methods: A descriptive cross-sectional study was conducted in April 2026 at the oncology department of Badji Mokhtar-Annaba University. Data were collected via an online structured questionnaire from 20 healthcare professionals, primarily GPs and residents.
Results: Participants identified clinical follow-up, management of treatment side effects, and supportive care as the primary responsibilities of GPs in oncology. However, significant systemic barriers hinder their full integration into the care team. The most frequently reported challenges included high workloads, communication difficulties (relying mainly on delayed written reports or phone calls), lack of resources, and insufficient oncology-specific training. Furthermore, most GPs reported only occasional participation in multidisciplinary team (MDT) meetings.
Conclusion: GPs are indispensable for continuous, holistic cancer care, but structural barriers limit their clinical potential. Overcoming these challenges requires modernizing healthcare infrastructure by implementing shared electronic medical records, formalizing GP participation in MDT meetings, and providing targeted continuous medical education in oncology.

Résumé

Contexte : Cette étude évalue le rôle des médecins généralistes (MG) dans les soins oncologiques et identifie les défis de coordination entre les soins primaires et spécialisés.
Méthodes : Une étude transversale descriptive a été menée en avril 2026 dans le service d'oncologie de l'Université Badji Mokhtar-Annaba. Les données ont été recueillies via un questionnaire structuré en ligne auprès de 20 professionnels de santé, principalement des MG et des résidents.
Résultats : Les participants ont identifié le suivi clinique, la gestion des effets secondaires des traitements et les soins de support comme les responsabilités principales des MG en oncologie. Cependant, des obstacles systémiques importants entravent leur pleine intégration dans l'équipe de soins. Les défis les plus fréquemment signalés comprenaient une lourde charge de travail, des difficultés de communication (reposant principalement sur des rapports écrits tardifs ou des appels téléphoniques), un manque de ressources et une formation spécifique en oncologie insuffisante. De plus, la plupart des MG ont signalé une participation seulement occasionnelle aux réunions de concertation pluridisciplinaire (RCP).
Conclusion : Les MG sont indispensables pour des soins continus et holistiques en cancérologie, mais des barrières structurelles limitent leur potentiel clinique. Surmonter ces défis nécessite la modernisation des infrastructures de santé par la mise en œuvre de dossiers médicaux électroniques partagés, la formalisation de la participation des MG aux RCP et la fourniture d'une formation médicale continue ciblée en oncologie.

الملخص

الخلفية :تقيم هذه الدراسة دور الأطباء العامين في رعاية الأورام وتحدد تحديات التنسيق بين الرعاية الأولية والمتخصصة
المنهجية :أجريت دراسة مقطعية وصفية في أبريل 2026 في قسم الأورام بجامعة باجي مختار-عنابة. تم جمع البيانات عبر استبيان إلكتروني منظم من 20 متخصصًا في الرعاية الصحية، معظمهم من الأطباء العامين والأطباء المقيمين .
النتائج :حدد المشاركون المتابعة السريرية، وإدارة الآثار الجانبية للعلاج، والرعاية الداعمة كمسؤوليات أساسية للأطباء العامين في طب الأورام. ومع ذلك، تعيق حواجز منهجية كبيرة اندماجهم الكامل في فريق الرعاية. شملت التحديات الأكثر شيوعاً التي تم الإبلاغ عنها أعباء العمل العالية، وصعوبات التواصل (الاعتماد بشكل أساسي على التقارير المكتوبة المتأخرة أو المكالمات الهاتفية)، ونقص الموارد، وعدم كفاية التدريب الخاص بالأورام. علاوة على ذلك، أبلغ معظم الأطباء العامين عن مشاركة عرضية فقط في اجتماعات الفريق متعدد التخصصات.
الاستنتاج :الأطباء العامون لا غنى عنهم لتوفير رعاية مستمرة وشاملة لمرضى السرطان، لكن الحواجز الهيكلية تحد من إمكاناتهم السريرية. يتطلب التغلب على هذه التحديات تحديث البنية التحتية للرعاية الصحية من خلال تطبيق السجلات الطبية الإلكترونية المشتركة، وإضفاء الطابع الرسمي على مشاركة الأطباء العامين في اجتماعات الفريق متعدد التخصصات، وتوفير تعليم طبي مستمر وموجه في مجال الأورام.