Bioethical Issues in Oncological Physiotherapy: A Multi-Method Analysis

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Dedication

“Hominem pagina nostra sapit”
— Marziale - Epigrammi - Liber X - 4

“La mia pagina sa di uomo”

A chi osa pensare, quando pensare costa.
A chi non arretra davanti al dubbio, ma lo abita.
A chi non si rifugia nel conforto delle risposte,
ma si espone alla vertigine delle domande.
A chi riconosce, nella cura, un atto umano e politico.
A chi si adopera ogni giorno perché la scienza non dimentichi il volto.
A Prometeo, che rubò il fuoco agli dèi per accendere il nostro.
A Galileo, che scelse il cielo contro il dogma.
A Gramsci, che scrisse nel buio per coltivare la luce,
che odiò gli indifferenti e fece della cultura una forma di lotta.
A chi legge il mondo non per prenderne possesso,
ma per comprenderne l’ingiustizia, la bellezza, la possibilità.
A chi cresce, non per diventare qualcuno,
ma per diventare più umano.
A chi, pur sapendo che ogni vetta è provvisoria,
continua a salire.
Alla scienza che non consola, ma illumina.
Alla medicina, che non sempre guarisce,
ma sa prendersi cura — davvero — quando ricorda di ascoltare.
Alla bioetica, che veglia sulla soglia tra il potere e il dovere,
tra ciò che si può fare e ciò che è giusto fare.
Alla fisioterapia, come atto di fiducia nel corpo ferito,
come gesto umano che non restituisce soltanto funzione,
ma dignità, voce, rinascita.
A Deni, amico fraterno, e alla sua azienda,
che con generosità concreta e silenziosa
ha reso possibile questo cammino,
sostenendo il sapere quando era ancora promessa.
A chi mi ha insegnato la tenacia senza darne lezioni:
alla mia famiglia, che ha portato il peso invisibile della mia strada.
A chi ha saputo aspettare le mie parole,
mentre imparavo a scriverle.

Questo lavoro nasce da una scelta:
non voltarsi, non semplificare, non cedere.

Questa tesi è un atto di resistenza.
Un omaggio alla dignità dell’essere umano,
anche — e soprattutto — quando è fragile.

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Manuscript

Abstract

Background: The growing role of physiotherapists in oncological physiotherapy and cancer care has brought ethical challenges to the forefront, particularly when dealing with end-of-life care, communication of prognosis, and balancing clinical benefits with patient autonomy. Despite this, bioethical issues in oncological physiotherapy remain underexplored.

Aim: The overarching aim of this doctoral research was to explore and describe the ethical dimensions of physiotherapy practice in oncological physiotherapy, as perceived and experienced by physiotherapists and patients. Specifically, the project sought to document ethically relevant situations, challenges, and reasoning processes emerging in clinical practice and professional education, adopting a descriptive ethics approach.

Methods: This doctoral thesis integrates findings from five interrelated studies. The first is a qualitative study exploring the educational trajectory of physiotherapists in oncological physiotherapy. The second is a systematic scoping review identifying and classifying ethical issues in physiotherapy. The third study investigates the specific ethical challenges perceived by Italian physiotherapists working in oncology. The fourth is a mixed-methods analysis combining survey data and focus group interviews to understand how ethical principles influence clinical decision-making in oncological physiotherapy. The fifth study adopts a qualitative design to explore cancer patients’ perspectives on ethically relevant aspects of oncological physiotherapy.

Results: Across the studies, key ethical challenges were identified, including informed consent, treatment withdrawal, truth-telling, risk-benefit dilemmas, and cultural influences on care delivery. Physiotherapists reported tensions between compassion, patient autonomy, and systemic constraints. A consistent theme was the need for profession-specific ethical guidance and enhanced education in ethics throughout physiotherapy curricula. Findings also highlighted the relational and embodied nature of physiotherapy as a unique context for ethical reflection.

Conclusions: Oncological physiotherapy involves ethically complex situations that require physiotherapists to engage with interpersonal, institutional, and cultural dimensions of care. By offering a descriptive account of how ethical issues are perceived and experienced by clinicians and patients, this thesis provides empirical material that may inform future ethical reflection, education, and normative analysis within physiotherapy, without advancing prescriptive ethical claims.

Popular Science Summary

Oncological physiotherapy helps people regain strength, function, and independence after a cancer diagnosis. Physiotherapists play an essential role in this process, working with patients throughout different stages of the disease—from active treatment to recovery, and sometimes during palliative care. Their work is not only physical but also deeply relational and emotional. This means they often face complex ethical questions: How much truth should be shared with patients? When should treatment stop? How can care be respectful, fair, and meaningful, even at the end of life?

This doctoral research investigates these ethical challenges from both the physiotherapists' and the patients' perspectives. It includes five studies: one exploring how physiotherapists are trained to work in cancer care, one reviewing scientific literature on ethical issues in physiotherapy, two studies examining how ethical decisions are made in clinical practice, and one study listening directly to what cancer patients think and feel about ethical aspects of rehabilitation.

The results show that physiotherapists care deeply about doing the right thing but often feel unprepared or unsupported when ethical problems arise. They sometimes struggle with decisions about continuing or stopping treatment, how to talk honestly with patients, or how to manage cultural expectations. Patients, in turn, value clear communication, involvement in decisions, fairness in access to services, and feeling respected and understood during therapy.

This thesis suggests that physiotherapists need better tools and training to navigate these ethical situations. It also shows how important it is to include patients' voices when thinking about ethics in healthcare. By combining insights from professionals and patients, this research helps create a more human, fair, and thoughtful approach to oncological physiotherapy.

List of Papers

Paper I: Bertoni G, Conti V, Testa M, Coppola I, Costi S, Battista S. (2023)

Physiotherapists' training in oncology rehabilitation from entry-level to advanced education: A qualitative study.

Published in: Physiotherapy Research International

Paper II: Bertoni G, Patuzzo Manzati S, Pagani F, Testa M, Battista S. (2025)

Ethical and Bioethical Issues in Physical Therapy: A Systematic Scoping Review.

Published in: Physical Therapy

Paper III: Bertoni G, Battista S, Conti V, Testa M, Patuzzo Manzati S. (2025).

Perceived bioethical issues in cancer rehabilitation: a qualitative study among Italian physiotherapists.

Published in: Archives of Physiotherapy

Paper IV: Bertoni G, Patuzzo Manzati S, Conti V, Testa M, Battista S. (2025).

Physiotherapists prioritise compassionate and patient-centred care while navigating systemic constraints and ethical dilemmas in cancer rehabilitation: a mixed-methods study.

Published in: Journal of Physiotherapy

Paper V: Bertoni G, Battista S, Conti V, Testa M, Patuzzo Manzati S. (2025).

Patients with Cancer on the Ethical Dimensions of Cancer Rehabilitation: A Qualitative Study.

Accepted in: Archives of Physiotherapy

The full text of each paper is reported at the end of the thesis, after the acknowledgements.

Abbreviations

APTA	American Physical Therapy Association
CADTH	Canadian Agency for Drugs and Technologies in Health
CBL	Case-based learning
CERA	Ethics Committee for University Research
CHERRIES	Checklist for Reporting Results of Internet E-Surveys
CINAHL	Cumulative Index to Nursing and Allied Health Literature
COREQ	Consolidated Criteria for Reporting Qualitative Research
COVID	Coronavirus Disease
EoL	End of Life
EU	European Union
FG	Focus Group
FNOFI	National Federation of Italian Physiotherapists' Registers
GRAMMS	Good Reporting of a Mixed Methods Study
HRQoL	Health-Related Quality of Life
JBI	Joanna Briggs Institute
MMAT	Mixed Methods Appraisal Tool
NCNN	National Comprehensive Cancer Network
PCC	Population, Concept, and Context
PROSPERO	International Prospective Register of Systematic Reviews
RTA	Reflexive Thematic Analysis
SD	Standard Deviation
SDM	Shared Decision Making
US	United States
WHO	World Health Organization

Preface

This doctoral thesis stems from a commitment to investigate how ethical issues are perceived, experienced, and interpreted by physiotherapists and patients within the context of oncological physiotherapy. Grounded in an approach commonly referred to as descriptive ethics, the thesis explores ethically relevant aspects of physiotherapy practice as they emerge from the lived experiences of those directly involved in oncological care.

The increasing involvement of physiotherapists in oncological care has led to complex clinical interactions that extend beyond technical skills. As patients face vulnerability, uncertainty, and shifting goals—from curative to palliative—physiotherapists are required not only to restore function but also to navigate emotionally and ethically charged decisions.

Throughout my doctoral journey, I became increasingly aware of how little is known about the specific ethical issues encountered by physiotherapists in cancer settings. While much attention has been paid to the role of physicians and nurses, physiotherapy has remained on the periphery of the bioethical discourse. I observed that physiotherapists often face dilemmas related to informed consent, treatment continuation, end-of-life care, and relational dynamics with patients and families—yet frequently without adequate ethical guidance or training.

As the project evolved, it became clear that understanding ethical practice in cancer rehabilitation required not only the voices of clinicians but also those of the patients themselves. The inclusion of patients lived experiences—through the final study of this thesis—offered a complementary and essential perspective on how ethically relevant and human-centred aspects of physiotherapy care are perceived and experienced within oncological physiotherapy.

Their reflections illuminated dimensions of fairness, communication, participation, and relational trust that were often only partially addressed in the clinical discourse.

This thesis seeks to address these gaps through a multi-method research strategy grounded in descriptive ethics. The research integrates different approaches in order to describe how ethically relevant issues are perceived, experienced, and articulated by physiotherapists and patients within oncological physiotherapy. Each study builds on the previous one to progressively outline the ethical concerns, values, and tensions that participants subjectively identify as significant in their clinical and rehabilitative experiences. The work presented here aims to contribute to physiotherapy education and practice by fostering ethical reflection grounded in the lived experiences of physiotherapists and patients. Adopting a descriptive ethics perspective, this thesis does not seek to establish normative standards or to replace existing professional codes of ethics, but to describe how ethically relevant issues are perceived, experienced, and negotiated in everyday physiotherapy practice within oncological care. The findings may therefore provide insights to support ethical reflection in education and clinical practice, and to inform future normative ethical inquiry.

Background

Oncological physiotherapy: Definitions and Clinical Importance

Oncological physiotherapy is an integral component of comprehensive oncological care.[1] As defined by the National Cancer Institute, it refers to “services that help a person with cancer to maintain and improve their ability to function in daily life.” These services address physical, psychological, cognitive, and social impairments that may arise from cancer itself or from its treatments—including surgery, chemotherapy, radiotherapy, immunotherapy, and hormonal therapies.[2,3]

Oncological physiotherapy is increasingly recognised as a continuum of care that spans the entire cancer trajectory. It begins with prehabilitation—interventions initiated before treatment to optimise physical and emotional readiness—and extends through acute care, post-treatment recovery, long-term survivorship, and palliative and end-of-life care.[4–7] This extended involvement is supported by international guidelines, such as those of the National Comprehensive Cancer Network (NCCN), the World Health Organization (WHO), and national cancer plans in many countries.[8,9]

Cancer and its treatments often result in a wide range of functional impairments. These include fatigue, pain, muscle weakness, deconditioning, balance problems, cognitive deficits, lymphedema, neuropathy, and mobility limitations. In addition to physical dysfunctions, cancer survivors frequently experience emotional distress, anxiety, depression, and a reduced sense of autonomy. These effects can persist for months or even years after treatment ends and may significantly impair quality of life and social participation.[10]

The clinical importance of oncological physiotherapy lies in its ability to mitigate these effects, promote independence, and enhance both survival and quality of life. Multiple studies have demonstrated that oncological physiotherapy improves outcomes such as physical function, return to work, emotional well-being, and adherence to oncological treatments. In some cases, timely rehabilitation may even influence treatment eligibility, as in prehabilitation programmes that improve surgical readiness.[9]

Despite this growing body of evidence, oncological physiotherapy services remain unevenly implemented across healthcare systems.[11] Barriers include lack of integration into oncology pathways, limited awareness among oncologists and patients, and insufficient workforce capacity. Moreover, disparities in access to rehabilitation persist across geographical, socioeconomic, and diagnostic lines, raising concerns about equity and health justice.[12]

In this context, physiotherapy is not merely an adjunct to cancer care, but a critical enabler of patient-centred, value-based oncology. As the population of cancer survivors increases globally, the demand for coordinated, multidisciplinary rehabilitation programmes are expected to rise. Understanding the nature, goals, and systemic challenges of oncological physiotherapy is essential to any investigation that aims to explore how care can be delivered ethically, equitably, and effectively across the cancer continuum.

The Role of Physiotherapists in Cancer Care

Physiotherapists are increasingly recognised as key contributors to the multidisciplinary management of cancer across all phases of the disease.[13] Their role extends well beyond the recovery of physical function, encompassing elements of prevention, education, psychosocial support, and palliation.[14] As cancer care models shift towards person-centred, integrated, and survivorship-oriented approaches, physiotherapists are called to respond with flexible, responsive, and context-sensitive interventions.[15]

In the prehabilitation phase, physiotherapists assess and enhance patients’ physical reserves prior to the initiation of treatment.[7] This may involve structured exercise programmes aimed at improving cardiopulmonary fitness, strength, and functional mobility.[6] Evidence suggests that prehabilitation can lead to reduced postoperative complications, shorter hospital stays, and faster functional recovery, particularly in surgical oncology.[9]

During active treatment, physiotherapists play a vital role in mitigating the side effects of chemotherapy, radiotherapy, and surgery. Interventions may focus on managing fatigue, pain, deconditioning, balance deficits, lymphedema, or treatment-induced neuropathy. Importantly, maintaining mobility and functional independence during treatment has been associated with improved adherence to cancer therapies and better overall outcomes.[16,17]

In the post-treatment and survivorship phase, physiotherapists support the restoration of long-term function and reintegration into daily life.[18] Goals include improving strength and endurance, reducing chronic pain, enhancing cognitive and psychological well-being, and supporting return to work or leisure activities.[3] Survivors may also benefit from physiotherapeutic interventions to address persistent impairments such as pelvic floor dysfunction, restricted range of motion, or speech and swallowing difficulties (in collaboration with speech-language pathologists).[19,20]

Physiotherapists also contribute to palliative and end-of-life care, where the focus shifts from curative intent to comfort, dignity, and quality of life.[4] In this setting, physiotherapists assist with symptom management, positioning, respiratory support, and facilitating meaningful engagement in daily activities, even in the context of terminal illness.[5,21] Their presence in palliative care teams underscores the role of physiotherapy as a means of preserving autonomy and identity, rather than solely improving function.[14]

Across these diverse settings, physiotherapy is inherently relational and longitudinal.[22] Unlike other healthcare professionals who may intervene at specific timepoints, physiotherapists often accompany patients throughout the disease trajectory.[23] This continuity fosters therapeutic relationships that are grounded in trust, empathy, and embodied interaction.[24–26] It also exposes physiotherapists to complex emotional and interpersonal dynamics, including evolving patient goals, family expectations, and moments of clinical uncertainty.[27,28]

In addition to direct patient care, physiotherapists are involved in educational, administrative, and research activities within oncology services.[29,30] They may contribute to the development of clinical guidelines, quality improvement initiatives, and interdisciplinary training programmes.[31] However, their full potential is often limited by systemic constraints such as under-recognition, resource limitations, and fragmented integration into cancer care pathways.[32–34]

In summary, the role of physiotherapists in cancer care is multifaceted, evolving, and ethically rich.[35] As frontline providers of functional and supportive care, they are uniquely positioned to influence patient outcomes and experiences across the cancer continuum.[36,37] Recognising and supporting this role is essential for building equitable, responsive, and person-centred oncology services.[34,38]

Ethics in Oncology: A General Overview

Oncology is widely acknowledged as one of the most ethically challenging fields in contemporary medicine.[39,40] The complexity arises not only from the biomedical intricacies of cancer diagnosis and treatment, but from the profound human realities that cancer care embodies: uncertainty, vulnerability, existential distress, and irreversible loss. Clinical encounters in oncology are often emotionally charged, ethically fraught, and deeply personal, demanding from professionals not only technical competence but also moral clarity and relational sensitivity.[39,40] Within medical ethics, much of the ethical reflection on oncology has traditionally been framed around the four foundational principles of bioethics—autonomy, beneficence, non-maleficence, and justice and equity. These principles have been widely used to conceptualise ethical challenges in cancer care, while their practical application remains complex and context-dependent.[41–43]

These principles offer a valuable framework, yet their application in oncology requires careful attention to the relational and communicative dimensions of care. Autonomy, for instance, entails respecting patients' right to be adequately informed and to express consent or dissent regarding their care. In oncological contexts, this process may be shaped by factors such as emotional distress, cognitive fatigue, prognostic uncertainty, and cultural attitudes toward truth-telling, which do not negate patients' rights but may influence how information is communicated and how decision-making processes are supported.[44,45] Patients may choose to receive limited information or to formally delegate decision-making to a trusted person, in accordance with legal standards. In such cases, the ethical task of clinicians consists in recognising and respecting patients' will, ensuring appropriate communication with the designated decision-maker, and maintaining a transparent and respectful decision-making process. [46–49]

Truth-telling remains one of the most sensitive aspects of oncology ethics.[39,50,51] Decisions about how much information to disclose, how to frame prognostic expectations, and how to maintain hope without fostering illusion often present dilemmas with no clear right answer.[50,52,53] While many healthcare systems and guidelines promote full transparency, the reality of patient preferences, familial pressures, and cultural expectations can create ethical tensions.[48,54,55] Disclosure becomes not a single act, but a dynamic process shaped by timing, language, and trust.[56] The emotional and psychological impact of cancer diagnoses amplifies these tensions, requiring clinicians to modulate truth with compassion.[57,58]

The principle of beneficence, traditionally understood as the clinician's duty to act in the patient's clinical best interest, is central to all phases of cancer care—from diagnosis to survivorship and end-of-life.[59,60] Within medical ethics, beneficence refers to the obligation to provide interventions that are clinically appropriate to protect health, preserve biological life, and, when disease is no longer curable, to relieve suffering through symptom control and palliative care. However, what is identified as clinically beneficial by healthcare professionals may not always coincide with the patient's own evaluation of whether a proposed intervention is acceptable or proportionate in light of their personal conception of quality of life and dignity.[61] While clinicians may regard aggressive treatments as life-extending and therefore beneficial from a medical perspective, patients may judge the same interventions as excessively burdensome or incompatible with their moral principles. In oncological contexts, particularly during transitions from curative to palliative intent, this divergence gives rise to a well-recognised ethical tension—and at times conflict—between the principle of beneficence and the principle of respect for patient autonomy.

Equally vital is the principle of non-maleficence: the obligation to avoid harm.[39,62] Oncology treatments—chemotherapy, radiation, surgery—carry substantial risks and side effects.[63] Clinicians must therefore continually weigh potential harms against therapeutic aims, recognising that in some cases, the most ethical course of action may involve refraining from treatment altogether.[63,64] Particularly in palliative care, symptom relief and quality of life often supersede life-prolonging measures.[65] In such scenarios, ethical sensitivity and patient-centred communication become critical tools for navigating complex decisions.[66–68]

The principle of justice and equity, traditionally discussed within medical ethics, concerns fairness in the distribution of healthcare resources, equal access to care, and the reduction of unjust disparities [69]. In oncology, ethical discussions have extensively documented how socioeconomic status, geographic location, ethnicity, and health literacy can significantly influence diagnosis, access to treatment, and clinical outcomes. [70–72] Patients from underserved or marginalised backgrounds have been reported to experience delays in care, lower-quality treatment, or limited access to supportive services such as rehabilitation or psychosocial support.[73,74] Within the ethical literature, these structural inequities are widely recognised as ethically relevant concerns, highlighting the moral significance of addressing barriers that disproportionately affect vulnerable populations.[75,76]

Beyond principlism, medical ethics in the oncology context also encompasses relational, emotional, and professional dimensions.[77,78] Clinicians often develop long-standing relationships with patients and families, witnessing suffering, resilience, and death.[79,80] These relationships carry moral implications that may transcend formal Codes of medical ethics, invoking duties of presence, compassion, and continuity that emerge within the lived context of care.[81] Moral distress, compassion fatigue, and burnout are common among oncology professionals, particularly when systemic constraints prevent them from acting in accordance with their ethical judgments.[82–84] These experiences underscore the need for institutional environments that support moral agency and reflection.[85]

Professionalism is another key pillar of medical ethics in the oncology context.[86] More than just technical excellence or rule adherence, professionalism entails integrity, honesty, accountability, and a commitment to patient-centred care.[87,88] In high-stakes contexts such as oncology, professionalism also involves managing uncertainty, disclosing difficult truths with empathy, and advocating for patients within fragmented or resource-limited systems.[79,89,90] Respecting confidentiality, navigating conflicts of interest, and collaborating across disciplines are all ethical tasks that require conscious cultivation.[91,92]

Increasingly, cultural competence and empathy are recognised as vital components of ethical care.[93,94] Cancer experiences are shaped by personal, social, and spiritual worldviews.[95] Patients may interpret illness, suffering, and death through religious or cultural lenses that differ from those of their clinicians.[96,97] A culturally competent approach respects these differences, engages with them constructively, and avoids imposing normative assumptions.[98,99] Empathy, similarly, is not merely a soft skill but a moral imperative: it enables clinicians to understand what matters most to patients, fostering trust and guiding ethically sound decisions.[100,101]

In this context, the contribution of clinical psychology and psycho-oncology is particularly relevant. These disciplines have extensively explored how individuals experience, interpret, and cope with cancer, addressing dimensions such as emotional distress, meaning-making, illness representations, and relational dynamics within care. Psychological research has highlighted how patients' values, beliefs, and cultural or spiritual worldviews shape their responses to diagnosis, treatment, and prognosis, as well as their interactions with healthcare professionals. This body of literature provides important insights into the subjective and relational dimensions of cancer care, which intersect with ethical reflection without being reducible to normative ethical analysis.

Despite extensive ethical literature on oncology—particularly focused on physicians and nurses—the perspectives and roles of other professionals remain underexplored. Physiotherapists, for example, are deeply embedded in cancer care pathways.[16,17] They work with patients across the continuum—from prehabilitation to end-of-life—supporting mobility, function, and autonomy.[6,9,102–105] They often engage with individuals at vulnerable moments, where touch, trust, and communication carry profound ethical significance. Yet their moral experiences, dilemmas, and reasoning processes have received limited scholarly attention.

Understanding the ethical landscape of oncology is therefore essential not only for clarifying normative expectations but for illuminating the lived experiences of all health professionals involved in cancer care. Ethics in oncology is not simply a theoretical concern or a matter of compliance—it is a daily, embodied, and relational practice. Recognising this complexity lays the groundwork for exploring how different professional groups—including physiotherapists—encounter, interpret, and navigate ethically charged situations in their work.

Existing Knowledge on Ethics in Physiotherapy

Compared to other health professions such as medicine and nursing, the field of physiotherapy has historically received limited attention within bioethical scholarship.[106,107] Despite physiotherapists' central role in patient care—often characterised by close, embodied, and sustained interaction—ethical issues specific to their practice have only recently begun to attract systematic interest.[108,109]

Early contributions to ethics in physiotherapy have often centred on professional codes of ethics, including those adopted at national level, such as the codes regulating physiotherapy and other rehabilitation professions in Italy. These documents articulate normative standards related to confidentiality, informed consent, and professional conduct, thereby providing an essential reference for ethical expectations within professional practice.[110,111] However, as normative instruments, professional codes are not designed to capture how ethical issues are perceived, experienced, and negotiated in the day-to-day realities of clinical work.[112,113] In particular, they offer limited insight into the ethical complexity arising from the embodied and relational proximity that characterises much of physiotherapy practice.

In the last two decades, a small but growing body of literature has begun to explore ethics in physiotherapy more deeply.[114,115] Scholars such as Swisher, Delany, and Purtilo have argued that physiotherapy involves distinct ethical dimensions that go beyond biomedical norms.[116–124] These include the embodied nature of care, the emphasis on patient engagement and motivation, and the longitudinal therapeutic relationships that often develop between patients and clinicians. These elements introduce ethical considerations that are not always captured by traditional principles-based approaches.

Several studies adopting a descriptive ethics approach and employing qualitative research methods have highlighted the kinds of ethical challenges physiotherapists encounter in practice.[107,120,125–127] These include dilemmas around autonomy and compliance, setting appropriate treatment goals, managing patients' unrealistic expectations, balancing individual needs with institutional constraints, and navigating conflicts with colleagues or family members. In oncological physiotherapy settings, issues of resource allocation, prioritisation, and functional outcomes also raise ethical concerns—particularly when working with vulnerable or marginalised populations.

However, much of this literature remains fragmented and exploratory. There is a lack of large-scale empirical research, and few attempts have been made to develop theory-informed ethical frameworks tailored to the specificities of physiotherapy practice. Furthermore, ethical inquiry in physiotherapy tends to be profession-centric, focusing on the clinician's perspective without systematically including the voices of patients or carers.[128,129]

Education in ethics for physiotherapists also appears to be variable. Several authors have noted that while ethics is often included in physiotherapy curricula, it is typically delivered through isolated modules with limited clinical integration. There is little consensus on what constitutes ethical competence in physiotherapy, how it should be taught, or how it should be assessed. As a result, many physiotherapists report learning to "do ethics" informally, through experience, reflection, and peer discussion, rather than through structured training.[130–135]

Within the context of oncology, the literature is even more limited. Although physiotherapists are increasingly involved in cancer care, little is known about how they encounter and respond to ethically complex situations in this field. Similarly, few studies have examined how ethical principles—such as autonomy, beneficence, non-maleficence, and justice—are understood and operationalized in the daily work of oncological physiotherapy.[136]

In sum, while there is a growing recognition that ethics matters in physiotherapy, especially in complex fields such as oncology, the existing knowledge base remains underdeveloped. There is a clear need for further research that explores ethical issues from both clinician and patient perspectives, grounded in real-world clinical contexts. Such research could help inform not only clinical decision-making, but also education, policy, and professional development in physiotherapy.

From Ethical Tension to Research Design

The background outlined in the preceding chapters reveals a set of converging issues that shape the rationale for this doctoral project.

First, the role of physiotherapy in cancer care is expanding rapidly, encompassing not only physical restoration but also psychological support, relational care, and palliative contributions across the disease continuum.

Second, oncology remains one of the most ethically complex fields in healthcare, characterised by prognostic uncertainty, end-of-life decisions, and tensions between medical possibilities and human values.

Third, and crucially, the ethical dimensions of physiotherapy—especially within oncological contexts—remain largely underexplored in empirical research and professional discourse.

While existing literature has addressed ethical issues in oncology with a focus on physicians and nurses, rehabilitation professionals have received comparatively little attention. Yet physiotherapists are often deeply embedded in ethically charged moments: navigating between patient autonomy and clinical judgment, addressing unrealistic expectations, working within systemic constraints, and engaging in emotionally intense therapeutic relationships. These realities raise important questions about how ethical challenges are experienced and negotiated in physiotherapy practice—and how they might differ from those of other healthcare roles.

At the same time, ethical inquiry within physiotherapy remains fragmented and conceptually limited. Much of the current scholarship is generalist, clinician-centric, and based on theoretical reflections or small-scale studies. There is a noticeable lack of practice-informed work that systematically examines how existing professional codes of ethics are interpreted and applied in the relational and embodied context of physiotherapy, particularly in oncological settings. Furthermore, few studies include the perspectives of patients or explore how ethical competence is developed, supported, or assessed in clinical training and ongoing professional practice.

This doctoral research was conceived to respond to these gaps by adopting a descriptive ethics approach. The project aims to document and describe how ethical issues are perceived, experienced, and interpreted by physiotherapists and patients within the context of oncological physiotherapy, through a programme of multi-method inquiry. The guiding epistemological stance of this project is grounded in a descriptive ethics approach. Ethical inquiry is understood as a disciplinary activity conducted within the field of ethics, while data derived from lived experience, reflective practice, and intersubjective dialogue are considered a valuable source of information for examining how ethical issues are perceived and articulated in clinical contexts.

Therefore, a pluralistic and iterative research design was adopted to capture the depth and complexity of the topic.

The project was structured around five interrelated studies, each targeting a specific facet of the overarching research problem:

1. Study 1 investigates how physiotherapists are prepared to work in cancer rehabilitation, with a focus on their educational trajectories and perceived training needs. While not centred on ethics per se, this study provides essential context for understanding how professional identity and competencies are formed in a field where ethical complexity is often present.
2. Study 2 presents a systematic scoping review that maps and classifies the ethical issues discussed in the physiotherapy literature, aiming to identify dominant themes, conceptual gaps, and emerging frameworks relevant to clinical practice and education.
3. Study 3 explores which ethical challenges physiotherapists encounter in cancer rehabilitation settings. Based on in-depth interviews, it focuses on how clinicians interpret and make sense of ethically complex situations that arise in daily practice.
4. Study 4 examines how physiotherapists respond to those challenges—investigating the reasoning processes, values, and

principles they mobilise in clinical decision-making. This mixed-methods study combines survey data with focus group interviews to capture both breadth and depth of ethical reasoning.

5. Study 5 incorporates the perspective of patients receiving physiotherapy in cancer care. It explores how patients perceive ethically relevant aspects of their rehabilitation, including communication, autonomy, relational care, and the way physiotherapists manage sensitive or value-laden situations.

The sequential and interlinked design of these studies allowed for the progressive deepening of inquiry. Findings from earlier phases informed the design and focus of subsequent ones—for instance, insights from clinician interviews shaped the focus group guides; patterns identified in the scoping review informed the construction of the survey; recurring themes from the practitioner perspective prompted the inclusion of patient voices in the final phase.

In doing so, this project aspires not merely to document ethical challenges, but to offer an empirically grounded account of what physiotherapists and patients perceive and experience as ethically relevant within oncological physiotherapy, with particular attention to the relational and embodied nature of care. As a descriptive ethics contribution, these findings do not establish what is ethically justified; any normative conclusions would require further analytical justification within normative ethics.

Aim and Objectives

The overarching aim of this doctoral research is to describe ethically relevant aspects of physiotherapy practice in oncology from a descriptive ethics perspective. Specifically, the project investigates how ethically complex situations are encountered, perceived, and interpreted by physiotherapists, and how these same aspects are experienced and understood by patients across the cancer care continuum.

Rather than undertaking a normative ethical analysis, this doctoral research seeks to provide an account of ethical sensibilities within oncological physiotherapy, documenting what professionals and patients perceive, believe, and experience as ethically relevant in clinical practice. The scope of the study is therefore descriptive, aiming to offer a contextualised "snapshot" of ethical experience in a specific healthcare setting.

The knowledge generated through this research is intended to inform ethical reflection related to physiotherapy education and clinical practice, and to provide material that may support future normative ethical inquiry and critical engagement with existing professional codes of ethics.

To address this aim, the research was articulated into five interrelated objectives, each pursued through a dedicated study:

1. To explore the educational pathways and training experiences of physiotherapists working in cancer rehabilitation, with particular attention to how they perceive their preparation to face clinically and ethically complex situations. → *Investigated through a*

descriptive ethics study employing qualitative interviews with physiotherapists. (Study 1)

2. To identify, map, and categorise the ethical issues addressed in the existing physiotherapy literature, in order to outline key themes, conceptual gaps, and emerging frameworks. → *Addressed through a systematic scoping review (Study 2)*
3. To investigate the ethically complex situations encountered by physiotherapists in oncology care, and to understand how these challenges are experienced and interpreted in daily clinical practice. → *Investigated through a descriptive ethics study employing qualitative interviews with physiotherapists. (Study 3)*
4. To examine how physiotherapists reason through ethical dilemmas in cancer rehabilitation, including how ethical principles and professional values shape their decision-making processes. → *Studied through a mixed-methods design combining a national survey and focus group interviews (Study 4)*
5. To explore how patients perceive ethically relevant aspects of physiotherapy care in oncology, including communication, relational dynamics, and the handling of sensitive clinical decisions. → *Investigated through a descriptive ethics study employing qualitative interviews with cancer patients. (Study 5)*

Together, these five studies form an integrated programme of research that sheds light on the descriptive ethical landscape of physiotherapy in cancer care, from both clinician and patient perspectives. The knowledge generated through this work is intended to support the ethical maturation of the profession, promoting a more reflective, responsive, and patient-centred oncological physiotherapy.

Study 1: Physiotherapists' Training in Oncology Rehabilitation from Entry-Level to Advanced Education: A Qualitative Study

Background and Rationale

Cancer is a leading cause of death and an obstacle to increasing life expectancy.[137] Globally, new cancer cases were estimated at 19.3 million in 2020, and survivors of cancer were roughly 25 million in 2008, with a trajectory to 75 million by 2030.[138] Among those who survive cancer, about 40% experience long-term physical, cognitive, and psychological side effects due to cancer sequelae and treatments (e.g., pain, fatigue, anxiety and depression), with a negative impact on health-related quality of life (HRQoL) and social participation.[139]

Physiotherapy is gaining a prominent position in managing people with cancer and survivors of cancer thanks to its positive effects on individuals' prognosis and symptoms.[140,141] In the past, physiotherapy assumed secondary importance in the care of people with cancer because the rapidly worsening course of this disease left little opportunity for rehabilitation.[142] Currently, thanks to the improvements in cancer care, the management of oncological diseases can not only be oriented towards quoad vitam prognosis but also towards achieving the best possible HRQoL, compatible with the consequences of the disease.[143] Therefore, early rehabilitation interventions are necessary, and we should argue about what training and skills physiotherapists require in oncology.[144] Before delving into the description of oncology rehabilitation in Physiotherapy higher education, it is essential to establish the terminology used in this paper, considering the variations in educational systems worldwide. In this context, we will adopt the term ‘entry-level education’ to denote the minimum level of educational attainment typically required for entering a specific profession or field or being included in the registry of the regulatory body, which, in the case of Physiotherapy, generally corresponds to a Bachelor's degree or a Doctor of Physiotherapy. Conversely, we will use the term ‘advanced education degrees’ to refer to educational programmes or courses offering a higher level of difficulty, specialisation, or depth than entry-level education, such as Master's or doctoral degrees.

Entry-level courses in Physiotherapy should provide basic knowledge in detecting and managing the most frequent cancer-related symptoms. Furthermore, the US Institute of Medicine identified the need for advanced oncology education and oncology training for healthcare professionals.[145] In response to this demand, various healthcare professional associations, such as the American Physical Therapy Association (APTA), have developed resources to address the advanced speciality practice in cancer rehabilitation, such as the 'Description of Specialty Practice: Oncologic Physical Therapy'.[13] This document is based on comprehensive research, including survey data and expert input. In Canada as well, the Canadian Council of Physiotherapy University Programmes has produced guidelines for oncological curriculum.[146] However, in Europe, countries like Italy lack such a kind of document and specialisation courses in cancer rehabilitation. Considering the different healthcare and education systems worldwide, it is possible to argue that it is not possible to generalise the finding of the abovementioned American document in other contexts (e.g., Europe). Moreover, Italian entry-level education courses in Physiotherapy have yet to draft a standard curriculum in oncology rehabilitation. Nevertheless, in Italy, oncology diseases represent a high burden, with over 1,000 new cancer cases diagnosed daily.[147] To fill these gaps, our qualitative focus group study aims to articulate the training trajectory of physiotherapists in oncology rehabilitation from entry-level to advanced education degrees by gathering the opinion of clinical and academic experts and course leaders. By doing so, this study might be informative for the creation of a future shared curriculum in oncology rehabilitation for entry-level education and documents and courses focusing on the acquisition of specific knowledge, tasks, and roles relevant to an advanced speciality practice in cancer rehabilitation in countries whose healthcare and education systems are similar to the Italian one.

Methods

Study Design

The authors conducted a qualitative focus group study. Qualitative research is the most effective method for gathering experts' opinions.[148] A focus group is the ideal methodological tool to foster the development of peer support: the group can help explore and clarify the views of the individual more quickly than in an individual interview [149]. The study was performed in respect of the Declaration of Helsinki and reported following the Consolidated Criteria for Reporting Qualitative Research (COREQ).[150] Ethical approval was obtained from the Ethics Committee for University Research, University of Genova (Approval date: 19/05/2022; CERA 2022.32), and informed consent was collected.

Participants

Study participants were recruited through purposive sampling.[151] Specifically, the participants in this study were carefully selected to include a range of perspectives on oncology rehabilitation. We had Italian physiotherapists with clinical and academic expertise in the field and course leaders (i.e., those responsible for the overall management and administration of a specific course or programme) from BSc in Physiotherapy programmes. To be considered experts and participate in the focus groups, the participants must have at least five years of continuous experience in oncological rehabilitation and possess advanced education degrees and training. All participants held advanced degrees ranging from a Master's to a PhD. We wanted to ensure that the voices of those working directly with patients with oncological diseases and those shaping the education and training offered to physiotherapists were represented. Participants were contacted via email and sourced through universities, oncology facilities, personal networks, and snowball sampling, with eligibility determined by analysing their professional backgrounds. Then, participants were selected primarily through the analysis of their curricula. VC conducted the curriculum analysis. VC is a physiotherapist and identifies her selves as a woman. VC has more than five years of clinical experience in oncological rehabilitation, and she is a temporary lecturer in oncological and palliative rehabilitation at the BSc in physiotherapy at the University of Milano-Bicocca (Milan, Italy). Once VC identified the eligible participants, she recruited them by email. The email read the purpose of the study, how the research would be conducted (e.g., through focus groups), and the confidentiality and anonymity of the data. Informed consent was sent as attachments. Each focus group consisted of 6-8 participants, equally divided by gender and professional role: clinicians, academics, and course leaders. Each focus group lasted between 1-2 hours.

Data Collection

An open-question-based focus group guide (Table 1) was constructed, based on existing literature on cancer rehabilitation[15,143], by physiotherapists experienced in oncology rehabilitation (GB and VC) and a physiotherapist and a psychologist experienced in education and qualitative research (SB and IC). GB is a physiotherapist and a PhD student at the University of Genova (Genova, Italy). GB has more than 10yearsof clinical experience in oncological rehabilitation, and he is a temporary lecturer in oncological and palliative rehabilitation at the BSc in Physiotherapy at the University of Brescia (Brescia, Italy). SB is a physiotherapist, PhD in Neurosciences and PhD in Medical Science, Research Fellow at the University of Genova (Genova, Italy) and temporary lecturer in ‘Teaching Methodology for Healthcare Professionals’ at the University of Verona (Verona, Italy). IC is a psychologist with a PhD in social psychology and post-doc research fellow at the University of Genova (Genova, Italy). IC identifies as a woman; SB and GB identify as men. SB and IC are trained in qualitative methodologies with proficiency in conducting qualitative studies.

They provided the other authors with all the necessary training to perform this study.

We used a semi-structured protocol to conduct the focus groups. For each thematic area to be explored, we formulated stimulus questions to

encourage dialogue and discussion among participants, ultimately aiming to answer our research question.
The guide was also reviewed by two patients who underwent oncology rehabilitation to grant patients' perspective in our research.[152,153]

Table 1: Focus Group Guide

	Questions
1.	Could you describe in three words / adjectives the role of physiotherapy in oncology?
2.	What are the strengths and weaknesses of including an oncology rehabilitation course in BSc in 'Physiotherapy'?
3.	In your experience, what knowledge do physiotherapists obtain in oncology rehabilitation after finishing the BSc programme? What do they not receive? What, instead, should be the basic knowledge needed to perform this role?
4.	In your experience, what competencies do physiotherapists obtain in oncology rehabilitation after finishing the BSc degree programme? What do they not receive? What basic skills should be needed to perform this role?
5.	If a student wanted to specialise in oncology rehabilitation to become a clinically skilled professional, what knowledge do you think they should have in oncology rehabilitation? Which ones do they not obtain? What, instead, should be the advanced knowledge needed to fulfil this role?
6.	In your experience, what competencies do physiotherapists obtain in oncology rehabilitation in a advanced education degrees? What do they not receive? What, instead, should be the advanced competencies needed to perform this role?
7.	In light of your considerations, what are the main differences in the competencies required in entry-level education versus those required in advanced education degrees?

8.	What suggestion(s) would you give to a student and / or professional approaching the world of oncology rehabilitation?
9.	Does anyone want to add other aspects that have not been mentioned?

Finally, a pilot interview was conducted with a lecturer in oncology rehabilitation to test the guide's relevance and understandability. The individual involved in the pilot interview is a male physiotherapist who has been working in oncological and palliative rehabilitation for 15 years. Additionally, he has taught ‘Rehabilitation in Oncological and Palliative Care’ for the past five academic years in a BSc in Physiotherapy at University of Brescia. The focus groups were conducted online with only the moderators and participants. The software used for the focus groups was Microsoft Teams. Three moderators (SB, GB and VC) were present during the focus groups. No close relationships were established before the study between the focus group moderators and the participants. No follow-up focus groups were performed. The focus groups were recorded and transcribed *verbatim*. The transcription was obtained through the software's automatic transcription feature and checked for precision and accuracy by GB and VC by comparing the transcription to the audio recording. The recordings were preserved in a secure database and deleted after data transcription. While conducting the interview, GB anonymised the participants as 'Participant 1', 'Participant 2', etc., according to the chronological order of the interviews. This label is the only information shared with the rest of the group. The analysis of the collected data was carried out after focus group transcription.

Data Analysis

We collected information related to participants’ gender, age, geographic origin, and professional role. Data analysis was performed according to the principles of Braun’s and Clark’s RTA.[154] This choice was made because the research aims to identify patterns of meaning - and consequently themes - relating to the role of physiotherapists in oncology, focusing on knowledge and competencies expected from entry-level education to advanced education degrees.[155] RTA is an interpretive approach to qualitative data analysis “that facilitates the identification and analysis of patterns or themes in a given data set” [154,156]. RTA is situated in a ‘Big Q’ qualitative paradigm characterised by adhering to a non-(post)positivist paradigm.[157] Thus, some practices do not apply to RTA (e.g., consensus coding, inter-coder reliability, data saturation, member checking etc.) as they are infused “with assumptions about the nature of reality and meaningful knowledge” that follow a ‘small q’ (postpositivist) paradigm.[158,159] Besides, RTA is characterised by researchers’ active and creative role in interpreting codes and themes, becoming a resource to tap into rather than a bias.[159] In our study, RTA was primarily conducted with an inductive approach: codes for focus group analysis were produced based on the content of the data.[160] From the perspective of epistemological conception, our study has adopted a constructionist approach as we appreciated meaning and meaningfulness as the main criteria in the coding process.[160] In the focus group analysis, the reflections on knowledge and competencies needed by the oncology rehabilitation physiotherapist were prioritised to answer our research question. An experiential orientation was used in the analysis of this study. This lens considered participants’ thoughts, experiences, and feelings as a reflection of their personal states.[160] The data coding was mainly semantic as we do not think we always went beyond the explicit or surface meanings of the data.[154] Thus, the six steps of the RTA were followed for the focus group analysis (see Table 2).[154] No software was used to assist the coding process.

Table 2: Six steps of the RTA

Phases	Process	Authors’ Involvement	Authors’ Actions
1) Data familiarisation	All authors read and reread several times the transcriptions of the focus groups. This process is fundamental to getting in	All authors engaged in this phase, and they met to reflect upon their first insights	- Document theoretical and reflective thoughts: VC documented field notes (“Memos” and diary) during and after each focus group to promote reflexivity. - Keep records of all data field notes, transcripts, and reflexive diary

	contact with the data and taking notes of any insights.		- Prolong engagement with data and triangulate different data collection modes to increase the probability that the research findings and interpretations will be found credible: VC e GB read and reread the data (transcripts of the focus groups, memos and reflexive diary)
2) Coding	In this phase, two researchers systematically coded the data through an open, evolving and organic process.	VC and GB systematically coded the data. They adopted semantic data coding.	- Peer debriefing: memos were shared during research meetings for reflexive thoughts. - Audit trail of code generation: VC and GB coded data through the entire data set to identify interesting aspects in the data items that may form the basis of themes across the data set. - Documentation of all team meetings and peer debriefings to help researchers examine how their thoughts and ideas evolve as they engage more deeply with the data
3) Generating initial themes	The researchers generated initial themes from the codes, clustering similar or related codes.	VC and GB generated initial themes separately, clustering similar codes together.	- Diagramming to make sense of theme connections: VC and GB generated initial themes through deductive thematic analysis.
4) Reviewing and refining themes	The researcher reviewed the initial themes, reworking or discarding some until finding a final set of themes fitting the data.	All authors reviewed the coding and initial themes separately and then jointly and generated six themes that fit the data the most. VC and GB	- Themes vetted by team members: the research team frequently met to refine the themes and clearly show how each theme was derived from the data.

		reviewed the agreed themes against the codes and the entire dataset.	
5) Defining and naming themes	The 'story' of each theme is developed by finalising theme names and their definition.	All authors finalised the final themes and definitions to set the basis of the written report.	- Peer debriefing and team consensus on themes: the research team met until the final themes were reached. - Documentation of theme naming.
6) Producing the report	The authors produced the final report and refined them if necessary.	VC and GB selected the illustrative quotations from the interviews, and all authors reviewed and agreed. SB and VC led the writing of the paper, and all authors participated in this phase.	- Producing the report using direct quotes from participants. - Report on reasons for theoretical, methodological, and analytical choices throughout the entire study.

Results

Two focus groups were conducted in July and September 2022 with fourteen participants (Age: 43 ± 10; 43% Men N=6; 57% Women N=8, Table 3). Of the participants, three were clinicians, seven were clinicians and lecturers, and four were course leaders.

Table 3: Participants' descriptive Statistics

Participant	Age	Gender	Educational level, Professional role	Region
1st Focus Group (July 2022)				
P1	54	Woman	BSc, Clinical expert	Liguria
P2	34	Man	MSc, Clinical expert	Lombardy
P3	38	Man	MSc, Clinical expert	Lombardy
P4	29	Woman	MSc, Clinical expert and lecturer	Veneto
P5	40	Woman	MSc, Clinical expert and lecturer	Lombardy
P6	30	Woman	MSc, Clinical expert, lecturer and researcher	Emilia-Romagna
P7	60	Woman	PhD, Course Leader	Lombardy
P8	51	Woman	MSc, Course Leader and researcher	Emilia-Romagna
2nd Focus Group (September 2022)				
P9	53	Man	BSc, Clinical expert and lecturer	Liguria
P10	35	Man	BSc, Clinical expert and lecturer	Trentino Alto Adige
P11	37	Woman	BSc, Clinical expert and lecturer	Liguria
P12	53	Man	MSc, Clinical expert and lecturer	Lombardy
P13	53	Woman	MSc, Course Leader	Liguria
P14	40	Man	MSc, Course Leader and researcher	Lombardy

Legend: P, participant.
BSc, Bachelor of Science
MSc, Master of Science
PhD, Doctor of Philosophy

All the contacted participants agreed to partake in the study. From the analysis of the focus groups, six themes were developed (see Table 4 for the coding process and quotations). According to our participants, these themes represent the journey that a student needs to take from entry-level education to advanced education degrees to become a physiotherapist experienced in oncology rehabilitation: 1. 'Entry-Level Education in Oncology Rehabilitation: Let's Have a Taste'; 2. 'Basic Knowledge: Building up the Library'; 3. 'Learning by Experience: The

Relevance of the Placement'; 4. 'Clinical Reasoning and Competencies in Oncology Rehabilitation Embedded in Uncertainty'; 5. 'Advanced Education Degree Skills: from Appetiser to the Main Course'; 6. 'A Call to Action for Physiotherapists: Prevention – Diagnosis – Survivorship & End of Life'.

Theme 1: 'Entry-Level Education in Oncology Rehabilitation: Let's Have a Taste.'

All participants agreed on the importance of including the 'Oncology Rehabilitation' course in the BSc of 'Physiotherapy' to allow the students to "know in order to choose" whether to master this subject in the future. Oncology rehabilitation is crucial in the BSc as our participants see it as "a road not for everyone". Dealing with people whose disease can have a fatal destiny can be burdensome. Therefore, an individual propensity to it is necessary. However, they highlighted that entry-level education in oncology rehabilitation could only be a taste of how to become an oncology physiotherapist. They reported the presence of a university system based on a rigid didactic plan where it is impossible to go into detail on a topic due to organisational problems, as introducing new topics or more hours for one course involves sacrificing something else. However, how to build up this knowledge "library" is explained in Theme 2.

Theme 2: 'Basic Knowledge: Building up the Library'.

The library involves basic knowledge and understanding of the course. According to our participants, it is necessary to provide students with notions related to major oncological diseases of rehabilitation interest (e.g., breast, lung, and urogenital). Then, explaining the side effects and consequences of oncology therapies (e.g., chemotherapy, radiation therapy, and immuno-oncology) and surgery is essential. From the rehabilitation point of view, it is fundamental for students to know the concept, treatments and characteristics of oncologic fatigue and pain. Oncologic pain must be considered from the acute phase to the end of life (palliative therapies).

Moreover, students need to understand how to make a differential diagnosis once assessing the pain nature in a patient. That is why it is vital to illustrate the main red flags of cancer pathology in entry-level education. Besides, it was highlighted that students must know how to manage people with bone metastasis characterised by bone fragility, increasing the risk of fractures. To do so, it is fundamental to provide students with knowledge of aids such as braces and corsets for patients. According to our participants, proper lymphedema management requires many practical skills that might be difficult to master during a BSc. Finally, they highlighted how students must have direct contact with people with cancer to practice this knowledge ("It's one thing to explain, and another to see."). To do so, a placement in oncology rehabilitation is fundamental, and this topic generated Theme 3.

Theme 3: ‘Learning by Experience: the Relevance of the Placement’.

The progression from knowledge to competencies is fostered through clinical placement. Participants emphasised the importance of students assisting these patients’ treatment. According to the participants, placement is essential to help students to confirm or not the idea they have about oncology rehabilitation. Through the placement, the student should gain the necessary experience to answer the question, "Is this the right road for me?". Moreover, participants outlined the importance of the placement for students to understand their ability to handle the emotional burden resulting from the relationship with people with oncological diseases. However, the management of these patients is characterised by an uncertain future, difficult to predict. Therefore, learning to deal with uncertainty while reasoning upon patients’ treatments is fundamental, as reported in Theme 4.

Theme 4: ‘Clinical Reasoning and Competencies in Oncology Rehabilitation Embedded in Uncertainty’.

According to our participants, students must acquire different oncology rehabilitation competencies. Participants highlighted the importance of making students competent in assessment, goal setting and personalised treatment choices developing clinical reasoning competencies. Moreover, there is a need for empathy and effective communication skill, both verbal and not verbal. Participants emphasised the incredible power of words and ‘touch’ of physiotherapists in the therapeutic relationship with people with cancers. The oncology physiotherapist must acquire interpersonal skills to work in a multifaceted team where patients' family members and caregivers are also part. According to the participants, developing all these skills must be embedded in the uncertainty of the rehabilitation pathway of the person with cancer. This is possible by training students to use flexible clinical reasoning, considering that patients' statuses can change quickly and unexpectedly. In listing the core competencies, participants reiterated the impossibility of their complete acquisition in entry-level education, outlining the importance of an advanced education degree pathway to deepening the knowledge and skills only "tasted" in BSc as described in Theme 5.

Theme 5: 'Advanced Education Degree Skills: from Appetiser to the Main Course'.

All participants agreed on the need for advanced education degrees to qualify expert physiotherapists in oncology rehabilitation. A structured advanced education degree would make it possible to go "from the appetiser served by the entry-level education to the main course " (P8). According to participants, advanced education degrees should allow for learning specialised skills related to managing cancers and bone metastases, advanced manual (e.g., lymphology), and exercise skills. They reported that physiotherapists should be able to handle the intensity, dosage, and frequency of exercise. Our participants proposed a master's degree with other healthcare professions to foster knowledge exchange among professionals working in the oncology field. In addition, they hypothesised that a master's degree should provide students with soft skills such as communication and organisational management skills. The participants highlighted that physiotherapists should learn about the different contexts of the health service organisation to design improvement projects for managing people with cancer. Therefore, advanced education degrees should offer a wide range of skills that allow oncology physiotherapists to understand the importance of their role. A role that is becoming paramount thanks to scientific studies but needs concrete action by physiotherapists to become relevant. This reflection led to the creation of Theme 6.

Theme 6: ‘A Call to Action for Physiotherapists: Prevention – Diagnosis – Survivorship & End of Life’.

Participants in focus groups discussed the journey to becoming an experienced oncology physiotherapist, emphasising the importance of spreading awareness about the role of physiotherapy in all stages of cancer care, from prevention to end of life. Participants often addressed the topic of ‘prevention’. Some participants emphasised the importance of the physiotherapist's role in primary prevention, promoting a healthy lifestyle based on exercise. Others highlighted the importance of physiotherapy assessment in secondary prevention to suspect possible oncological diseases to other professionals. Then, participants emphasised that rehabilitation care should be early, even from diagnosis. Moreover, rehabilitation care is gaining a pivotal role in the oncology pathway during adjuvant pharmacological therapies. Therefore, the role of physiotherapists cannot be limited to the post-surgical management of oncological disease but becomes crucial throughout the whole care. The need for ongoing rehabilitation care continues throughout the survivorship phase of people with cancer. Participants emphasised the physiotherapist's role in providing patients with physical, informational, and emotional support. Finally, participants reflected upon the delicate part of the physiotherapist in palliative care. Some examples were strategies to sensitise students to recognise the rehabilitative significance of caring for patients at the end of life. The common thread in this sixth and final theme is the need for action to debunk taboos and myths related to people with oncological diseases. Participants deemed fundamental a clear call to change the cultural paradigm of oncology rehabilitation from 'if there is an oncological disease, I can't do anything' to 'if there is an oncological disease, I can do a lot’.

Table 4: Defined codes for the generated themes

Theme 1: Entry-Level Education in Oncology Rehabilitation: let’s have a taste	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Knowing to choose	"Oncology rehabilitation is important to give students a chance to get curious, to find out there's a whole world out there and see

	if it's something they'd like to dig into in the future". (P12, man, 53, clinical expert and lecturer)
A road not for everyone	"Handling oncology patients is a personal thing". (P5, woman, 40, clinical expert and lecturer) "These patients are constantly facing an uncertain future, always with a figurative sword hanging over their heads". (P4, woman, 29, clinical expert and lecturer)
Necessity to receive a training in oncology rehabilitation	"Today we can't even fathom the idea of graduating a student without these [oncology rehabilitation] skills. Oncological diseases are everywhere". (P7, woman, 60, course leader)
The importance of the clinical lecturer	"When it comes to picking a lecturer for an oncology rehab module, it's key they've got recent clinical experience. They can't just be a book smart lecturer, the clinical side is just as important. The lecturer needs to bring that expertise to the students". (P4, woman, 29, clinical expert and lecturer)
The rigidity of the teaching plan	"In a BSc, if we add something, we got to cut something else. [...] I always say when someone comes up with a good idea in didactic council, it doesn't matter if it's oncology or not, the question is what are we willing to give up?" (P8, woman, 51, course leader and researcher) "The university gives the students the library, it's up to them to stock it up with the reads they crave!" (P7, women, 60, course leader)
Theme 2: Basic knowledge: building up the library	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Definitions and objectives of oncology rehabilitation	"We discuss two main areas in cancer rehab: functional and palliative. We cover when and how the PT fits into pre- and post-surgery rehab, and what they do in the palliative stage of disease." (P6, woman, 30, clinical expert, lecturer and researcher)
The main oncological diseases	"We educate students on the types of cancer patients a physiotherapist may work with, like those who had breast, chest, head and neck, prostate, or uterine cancer surgeries." (P10, man, 35, clinical expert and lecturer)

Catheters & vascular accesses	“I tell students about managing "tubes" in the home setting, since they may not encounter them elsewhere. This is especially important for those who haven't had an ICU internship”. (P2, man, 34, clinical expert)
Mobilisation and metastases	“I emphasise the importance of explaining joint end-stroke management with bone metastases and setting a treatment threshold for exercise because they have energy that needs to be spent”. (P2, man, 34, clinical expert)
Knowing the side effects of oncology therapies	“I aim at educating students on the treatments and outcomes (expected and unexpected) that patients with cancers may experience". (P10, man, 35, clinical expert and lecturer)
Managing fatigue	"We highlight the impact of oncologic fatigue, which is cross-cutting and affects all cancers. There's a lot that physiotherapists can do, based on what's in the literature". (P6, woman, 30, clinical expert, lecturer and researcher)
The importance of differential diagnosis	"I would highlight the importance of knowing oncological pain". (P7, woman, 60, course leader) "It's crucial for students to know the warning signs, like unclear pain in a patient with a history of cancer. A back pain could be a metastasis". (P6, woman, 30, clinical expert, lecturer and researcher)
Proposal and management of aids	"The role of the physiotherapist in treating patients with bone metastases is crucial, including prescribing the necessary aids". (P9, man, 53, clinical expert and lecturer)
Hints of lymphology	"Lymphology is an important aspect too. We cover the anatomy of the lymphatic system, how it operates in non-cancer patients, the surgical removal of lymph nodes that can obstruct the pathway, and the need for physiotherapy intervention to redirect lymph flow". (P10, man, 35, clinical expert and lecturer) "Lymphology comes to my mind. No one should treat a woman with upper extremity lymphedema as soon as they finish their BSc". (P4, woman, 29, clinical expert and lecturer)
Theme 3: Learning by experience: the relevance of internship	

Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Experience as a test bench - the internship	"It's one thing to explain, and another to see". (P11, woman, 37, clinical expert and lecturer) "Placement is key if you're curious. It's a chance for students to get hands-on experience and see what it's really like working with patients. You can't grasp the reality of treating patients with cancers in a classroom setting." (P8, woman, 51, course leader and researcher)
Personal predisposition	"The most crucial part of the placement is not just learning techniques, but understanding if you can emotionally detach yourself and handle the weight of treating patients, especially younger ones who are seriously ill. It's a personal journey as well." (P3, man, 38, clinical expert)
Psychological load of the experience	"Some students just aren't cut out for the emotional demands of working in an oncology ward and you can't tell that from a lecture alone." (P5, woman, 40, clinical expert and lecturer) "[In oncology rehabilitation] it is necessary for the physiotherapists to know how to deal with their and patient's emotions [...] When I'm with the students during their placement in palliative care, I allow them to talk with patients, build relationships, and open up to their emotions and experiences. But those who don't come to placement to palliative care, I don't know how they will experience their first patient with cancer if they ever happen to treat them." (P12, man, 53, clinical expert and lecturer)
Relational test bench	"In oncology rehabilitation, physiotherapists need to be able to handle their own and their patients' emotions. During placement in palliative care, I encourage students to form relationships with patients and open up emotionally. But for those who don't experience palliative care placement, I don't know how they'll react when they come across their first oncology patient." (P12, man, 53, clinical expert and lecturer)
Is this the right path for me?	"Having even a brief, but meaningful, experience in this field is crucial so students can make informed choices for themselves." (P8, woman, 51, course leader and researcher)
Theme 4: Clinical Reasoning and Competencies in Oncology Rehabilitation Embedded in Uncertainty	

Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Learning how to work in multifaceted team	"The oncology rehabilitation course must train future physiotherapists to get acquainted with oncologists, oncology surgeons and nurses, and others (e.g., caregivers) we might have a language barrier". (P4, woman, 29, clinical expert and lecturer) "When it comes to rehab, the relationship with the patient's family is key. And don't forget about the caregiver's involvement - it's essential for their support". (P9, man, 53, clinical expert and lecturer)
Knowing how to conduct an assessment	"Evaluating the patient is crucial for a student. It's the foundation of what we do and can save you in the long run". (P6, woman, 30, clinical expert, lecturer and researcher)
Knowing how to set flexible goals	"I challenge my students to define patient assessment tools, set goals, and determine the best treatment plan". (P6, woman, 30, clinical expert, lecturer and researcher) "What is required of students is to recognise the dynamic of these patients and not to be adamant with their goals because physiotherapists have to be able to change [the rehabilitation programme] as soon as the patient's condition changes". (P7, woman, 60, course leader)
Having effective communication skills	"One important thing to note is communication skills. Patients tend to have more conversations with physiotherapists and ask a lot of questions". (P11, woman, 37, clinical expert and lecturer) "I think one of the main communication skills is using our hands properly, thinking about how much we communicate through our hands". (P12, man, 53, clinical expert and lecturer)
Theme 5: Advanced Education Degrees skills: from appetiser to main course	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Need for advanced training	"In my opinion, offering a master's degree specifically dedicated to oncology rehabilitation would be an excellent alternative. That's what happens in other countries, and it would be amazing to have the same here". (P4, woman, 29, clinical expert and lecturer)

Advanced interdisciplinary skills	"I'd be interested in a master's programme that brings together other healthcare professionals who work with patients with cancer. That would be a great opportunity for networking and enriching experience". (P6, woman, 30, clinical expert, lecturer, and researcher)
Exercise medicine	"It's crucial that these patients receive tailored care, especially when it comes to exercise and physiotherapy. Physiotherapists need to know the proper dosage, intensity, frequency, and impact of their therapy. I think this should be covered in a higher education programme". (P8, woman, 51, course leader and researcher)
Healthcare management	"A master's programme could focus on Breast Units as a role model and teach physiotherapists how to apply the same model to other areas of oncology. This way, they will have a deeper understanding of how to provide effective care to these patients". (P10, man, 35, clinical expert and lecturer)
Theme 6: A call to action for physiotherapist: prevention – diagnosis – survivorship & end of life	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
The role of the physiotherapists in the preventive phase of diseases	"Exercise has a preventive role in several oncologic diseases and there's strong evidence for it. As physiotherapists, we don't always get to be part of the primary prevention phase, but we should establish ourselves more in this area. Exercise is one of our tools, after all". (P8, woman, 51, course leader and researcher) "I wrote 'prevention' [during the wooclap wordcloud] because we are trying to implement pre-rehabilitation in the pre-surgical phase of the patient undergoing pancreatic or oesophageal surgery. We are trying to identify the most at-risk groups that need to perform this pre-rehabilitation". (P14, man, 40, course leader and researcher)
The role of the physiotherapists from diagnosis to post-surgery	"I think it is necessary to start talking about a cultural change related to the fact that the patient who has been diagnosed with cancer can come to us [to physiotherapists] earlier". (P7, woman, 60, course leader) "There is a group of patients that we must not forget. Those who are at the beginning of the oncology pathway and who are

	relatively well. This population doesn't know they need physiotherapists and don't come looking for us, the physician doesn't suggest us to them, and we, physiotherapists, have yet to understand what we could do for them". (P8, woman, 51, course leader and researcher) "Recent studies show us that exercise medicine can be performed during chemotherapy, which is pretty innovative". (P7, woman, 60, course leader) "Evidence shows that exercise helps patients to reduce the negative impact of oncology therapies as well as to increase patients' tolerance of their side effects". (P9, man, 53, clinical expert and lecturer)
The role of the physiotherapists in survivorship	"Survivorship is a big chapter, and not just because of the high risk of cancer recurrence and late side effects of therapies, but also the psychosocial burden that patients face. Physiotherapists and healthcare professionals have a key role here. It's a fascinating but difficult role, but still fascinating." (P8, woman, 51, course leader and researcher)
The role of the physiotherapists in palliative care	"To students who are sceptical about the approach to terminally-ill patients, I try to get them to see the whole picture of the patient. I emphasise the topic related to the patient's quality of life because students often look little at this aspect". (P12, man, 53, clinical expert and lecturer) "When I talk to the students about their role as physiotherapists in palliative care, I tell them, 'Just like a democracy or a state is judged by how it treats the underrepresented, the poorest or the incarcerated, the quality of a healthcare system is judged by how it treats people at the end of their life.'" (P10, man, 35, clinical expert and lecturer)

Study 2: Ethical and Bioethical Issues in Physical Therapy: A Systematic Scoping Review

Background and Rationale

In the medical and healthcare context, the responsibilities of professionals extend across several dimensions: moral (guided by one's personal moral principles), ethical (based on principles shared by the professional community), deontological (defined by professional codes and duties, where actions are evaluated by rule-following), and legal (in accordance with civil and criminal law).[161] This study aims to highlight the ethical dimension of clinical physical therapy practice, as explored by medical ethics and bioethics disciplines.

Medical ethics, through a logical and analytical approach, identifies the principles that guide the clinical practice of healthcare professionals.[162] The four biomedical principles—beneficence (the good clinician identifies clinically appropriate interventions to protect the patient's health and life), non-maleficence (the good clinician does not harm the patient's health or life), autonomy (the good clinician respects the patient's will to accept or refuse a proposed clinical intervention after evaluating its ethical proportionality), and justice and equity (the good clinician does not discriminate among patients and guarantees fair access to care)—were articulated by Beauchamp and Childress and have since become a foundational framework for clinical decision-making.[163,164] Bioethics, as a broader interdisciplinary field, encompasses not only these principles but also the ethical challenges that arise in clinical practice in light of biomedical and biotechnological progress, employing methods of rational argumentation to address them.[165]

In their professional practice, physical therapists may encounter various ethical problems.[166] These may be shared with other healthcare professionals or may be specific to physical therapy—particularly those that emerge in a care relationship where physical interaction is a central element.[167] Physical therapy is characterized by a rehabilitative process that develops over time, requiring a continuous relationship between the professional and the patient.[168,169] Within this relationship, physical therapists are called upon to build trust, responsibly manage informed consent, and balance the obligation to provide effective treatment with the need to respect patient preferences.[170,171] The element of physical contact, central to physical therapy practice, also raises ethical concerns regarding proxemics and touch.[172,173] Physical therapists must be able to modulate physical interaction, ensuring that contact is always appropriate, necessary, and accepted, considering individual and cultural sensitivities.[174]

Prior syntheses of ethics in physical therapy—most notably Swisher's retrospective analysis of the literature from 1970 to 2000—described how scholarship evolved across decades, characterized dominant ethical approaches, with a strong emphasis on principles-based philosophical work and a later rise of social scientific studies. It identified recurring themes and gaps, such as limited empirical evidence and unaddressed cultural dimensions.[116] This work provided an essential foundation for the profession. The present scoping review expanded on the literature examined by Swisher, incorporating a broader range of sources (peer-reviewed journals, grey literature, and academic library resources), and extends the historical period considered and the aims.

Hence, the aim of this scoping review was to systematically map ethical and bioethical issues addressed in the physical therapy literature, identify the research methodologies employed, and highlight existing knowledge gaps to inform education, practice, and policy.

Methods

This systematic scoping review followed the methodological guidance provided by the Joanna Briggs Institute (JBI) and is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).[175,176] The protocol for this systematic scoping review was published on medRxiv.[177] This review is not a direct update of prior retrospective analyses (e.g., Swisher 1970–2000);[116] rather, it applies a scoping-review methodology to broaden coverage, triangulate data sources, and introduce a complementary analytical lens focused on mapping ethical and bioethical issues through triangulation of sources.

Research Team

The research team comprises four physical therapists and one philosopher, all of whom have expertise in qualitative and quantitative research, as well as evidence synthesis. One physical therapist (F.P.) holds a master's degree in philosophy, while another (G.B.) is pursuing a PhD in neuroscience, with a specific focus on bioethics applied to rehabilitation. One physical therapist (S.B.), PhD, is a research fellow and acted as methodologist to ensure methodological rigor. Another team member (M.T.), PhD, is an associate professor of physical therapy with extensive experience in clinical and academic research. The philosopher (S.P.M.) holds a PhD in bioethics. This interdisciplinary composition ensures a comprehensive and context-sensitive approach to the ethical aspects of physical therapy practice.

Eligibility Criteria

Eligibility for study inclusion was determined using the Population, Concept, and Context (PCC) framework outlined by JBI.[175]

Population

Studies focusing on physical therapists as professionals and physical therapy as a discipline were included. Research investigating ethical challenges and bioethical issues in physical therapy clinical practice was considered.

Studies examining other healthcare professionals were excluded unless they explicitly discussed ethical issues concerning physical therapists. Likewise, studies from the patient's perspective were only included if they directly assessed physical therapists' ethical concerns.

Concept

The primary focus of this review was ethics and bioethics within physical therapy practice. Studies had to address ethical problems, principles, or challenges in the field. Research focusing exclusively on technical or procedural aspects of physical therapy, without an ethical dimension, was excluded.

Context

No restrictions were applied concerning geographical location, demographic, social, or cultural factors. Studies from diverse healthcare systems and settings were included.

Types of Studies

The disciplinary foundation of medical ethics and bioethics is moral philosophy. Therefore, these fields—though applied to scientific domains such as medicine and healthcare—remain fundamentally humanistic and theoretical in nature. The main research methods in ethics are descriptive and normative. Depending on the method applied, different types of studies are identified in the literature. In line with the objectives of this systematic scoping review and the inherently philosophical nature of ethics and bioethics, we included a wide range of study types. Specifically, we considered both descriptive and normative studies, reflecting the two main methodological approaches to ethical inquiry.

Descriptive (or empirical) ethics employs what we can call qualitative or social science-based studies—such as interviews, focus groups, observational research, or surveys—to investigate the ethical perceptions of physical therapists, that is, what these professionals perceive or believe to be good or bad (ethical principles) in their daily practice.[178]

Normative ethics proposes a thesis of good or bad (ethical thesis) – which can be entirely independent of the results of descriptive ethics – that the author argues dialectically through a logical-rational analysis. These studies may be presented in the form of reviews, philosophical analyses, or editorials. By examining the literature on ethics and bioethics applied to the field of physical therapy, several studies of this kind were identified, which represent central works of the ethical discourse.

Studies were excluded if they (1) did not explicitly address ethics or bioethics, (2) were not aligned with the scope of physical therapy, (3) were published in non-scholarly formats (e.g., commentaries, letters, or duplicates), or (4) were unavailable in full text despite repeated attempts to obtain them. In relation to criterion (2), “not aligned with the scope of physical therapy” referred, for example, to articles addressing ethical issues exclusively in other health professions without relevance to physical therapy, or to legal/administrative discussions without clinical or educational implications for physical therapy.

All included studies—regardless of type—were classified into one of the two broad categories: descriptive (empirical) or normative ethics, based on their methodological approach.

Search Strategy and Information Sources

The International Prospective Register of Systematic Reviews (PROSPERO) was consulted to ensure no existing systematic reviews covered this topic. Then, a literature search was conducted employing a data triangulation strategy by combining searches across bibliographic databases, grey literature, and specialized library resources. This approach was intended to enhance comprehensiveness and reduce the risk of missing relevant sources.

The following databases were consulted: PubMed, Embase, Cochrane Central, CINAHL, PsycINFO, and PEDro up to October 2024. These databases were selected based on their comprehensive coverage of health-related research, following established Cochrane recommendations.[179] The search strategy was developed for PubMed and adapted for each database. The complete list of search terms is provided in Supplementary material n°2. No date or language restrictions were applied. The grey literature search followed the guidelines of the Canadian Agency for Drugs and Technologies in Health (CADTH).[180] Finally, to ensure a comprehensive analysis of bioethics literature related to physical therapy, an extended search was conducted on non-bibliographic sources, including both scientific databases and library resources. To this end, we collaborated with the University of Verona (Verona, Italy) librarians to access the Universe portal, which includes non-bibliographic sources. This allowed us to search for books, book chapters, conference proceedings, and websites related to the topic. If necessary, study authors were contacted for missing data.

Study Selection

All identified records were uploaded to Covidence, where duplicates were automatically removed (Covidence systematic review software, Veritas Health Innovation, Melbourne, Australia. Available at www.covidence.org). Two independent reviewers (G.B., F.P.) screened titles and abstracts in a blinded manner. A calibration exercise was performed on a random 10% of records to ensure interrater reliability. As the agreement was above 90%, no refinement of the inclusion and exclusion criteria was needed, and the second pilot test was not required. Conflicts were resolved through consultation with a third reviewer (S.B.). A PRISMA flow diagram was used to document the selection process.

Data Extraction

Data were extracted using a modified version of the Joanna Briggs Institute (JBI) Standardized Data Extraction Form. Consistent with the iterative nature of scoping reviews, the list of extracted variables was refined during the process to include those most consistently reported across studies and most relevant for addressing the review questions:

- Authors
- Year of publication
- Country of origin
- Title
- Ethical Inquiry Type
- Study Design
- Main Ethical Topics
- Domains of Physical Therapy Practice

This adjustment ensured a more reliable and coherent dataset while maintaining fidelity to the overarching goals of the review. Two independent reviewers (G.B., F.P.) conducted the data extraction.

Data Synthesis

A narrative synthesis was conducted to classify ethical issues in physical therapy. The grouping was based on the predominant topic addressed in each study, as identified through careful reading and analysis of the content.

Articles were grouped into the following key thematic categories:

- Ethical Theories: foundational ethical principles and logical-analytical arguments guiding physical therapy.
- Ethical Reasoning: how physical therapists identify, interpret, and address ethical issues in clinical practice (including true dilemmas, value conflicts, and experiences of moral distress).
- Ethical Reasoning and Education: works that address the development of ethical competence through education, training, and reflective learning.
- Ethical Perception: what physical therapists perceive to be good or bad in their professional practice.
- Ethics of Care Relationship: ethical dimensions of the therapeutic relationship, including trust, communication, and boundaries.
- Justice and Equity in Clinical Ethics: fairness, access to care, and systemic inequalities in physical therapy.
- Codes of Ethics: content, use, and impact of formal professional codes within the field.

Findings were summarized to highlight how ethical considerations are manifested across different aspects of physical therapy practice. Gaps in the literature were identified, and potential areas for future research were suggested. The results were presented using tables to provide a representation of ethical topics and methodological trends.

In the data synthesis and discussion, we used the term *ethical dilemma* narrowly to indicate situations in which core ethical principles conflict, such that any available option violates an important value. We use *ethical problem* or *ethical issue* as umbrella terms for value-laden situations that may include—but are not limited to—true dilemmas, value conflicts, and experiences of *moral distress* (i.e., when clinicians judge the right action but are constrained from acting on it). This policy ensures consistent and accurate usage throughout the manuscript.

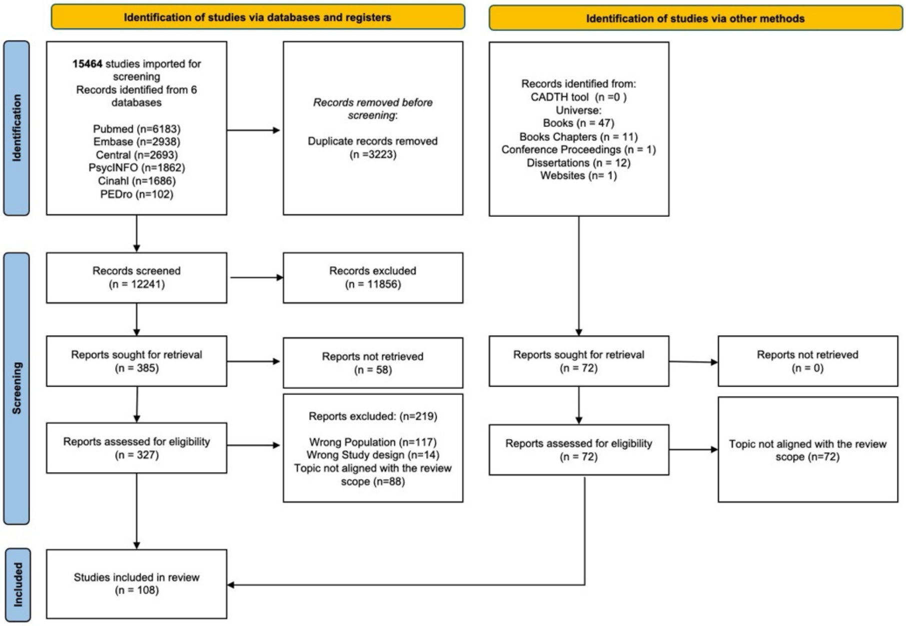
Deviations from the Protocol

While this systematic scoping review was conducted in accordance with the methodological framework established in the published protocol, some deviations occurred during the review process.[177] First, to ensure a more comprehensive exploration of ethical discourse, we decided to include editorials and narrative reviews, provided they offered substantial normative analysis or critical reflection. This decision was not explicitly outlined in the original protocol but was deemed methodologically coherent given the philosophical nature of the research topic. Finally, although the protocol stated a broad search strategy, the review extended its scope to include non-bibliographic sources by accessing academic library systems through the Universe portal. These deviations were consistent with the iterative nature of scoping reviews and contributed to a more robust mapping of the ethical literature in physical therapy.

Results

A total of 15464 records were identified through database searching. After removing 3223 duplicates, 12241 records were screened by title and abstract. Of these, 11856 were excluded as irrelevant, leaving 385 studies for full-text assessment. Among these, 219 records were excluded for the following reasons: a lack of explicit focus on ethics or bioethics, misalignment with the scope of physical therapy, or publication in non-scholarly formats (e.g., commentaries, letters, or duplicates). In addition, 58 full texts could not be retrieved despite repeated attempts through institutional access and direct author contact (via email or ResearchGate). The grey literature search, conducted according to the guidelines of the CADTH, did not yield any additional sources for inclusion. Similarly, the search in bibliographic and library systems dedicated to the humanities resulted in 72 records, all of which were deemed irrelevant and thus excluded from the review. Hence, 108 studies met the inclusion criteria and were included in this review.

Figure 1; PRISMA flow diagram



The list of full texts excluded from the review with reasons is available in the supplementary material n°3.

Of the 108 studies, 50 employed a normative approach (25 ethical analysis, 6 case studies, 11 editorials, 7 reviews and one Delphi study), while 58 were descriptive (22 qualitative studies, 13 surveys, 7 cross-sectional studies, 5 longitudinal studies, 4 observational studies, 5 mixed methods, and 2 Delphi studies). The studies covered various physical therapy domains, with the majority addressing general physical therapy (84), followed by professional ethics (8), geriatric care (3), infectious diseases (4), and other specialized areas. The key ethical topics explored included ethical reasoning (33), ethical reasoning and education (19), ethical theories (12), codes of ethics (8), justice and equity in clinical ethics (8), ethics of care relationships (15), and the perception of ethical issues in physical therapy (13).

A summary of the study characteristics is presented in Table 5, while a detailed list of the included studies is provided in Supplementary material n°4.

Table 5: Summary of Study Characteristics

Ethical Inquiry Type	Normative n = 50
	Descriptive (Empirical) n = 58
Main Ethical Topics	Code of ethics n = 8
	Ethical reasoning n = 33
	Ethical reasoning and Education n = 19
	Ethical theory n = 12
	Ethics of the care relationship n = 15
	Justice & Equity in clinical ethics n = 8
	Perception of Ethical Issues in physical therapy n = 13
Study design	Ethical Analysis n = 25
	Case Study n = 6
	Cross-Sectional n = 7
	Delphi n = 3
	Editorial n = 11
	Longitudinal study n = 5
	Mixed-Methods n = 5
	Observational studies n = 4
	Qualitative study n = 22
	Review n = 7
	Survey n = 13
Domain of physical therapy	Generic n = 84
	Geriatric n = 3
	Infectious diseases n = 4
	Intensive care n = 1
	Muscoloskeletal n = 1
	Neurologic n = 2
	Palliative care n = 1
	Pediatric n = 2
	Professional Ethics n = 8
	Sport n = 2

Ethical Theory

The studies grouped under this category examine the theoretical foundations of ethical reasoning in physical therapy. Several authors critique the limitations of principle-based or deontological ethics when applied to complex clinical situations.[181] Instead, they propose a contextual ethics in rehabilitation settings.[182] For instance, some studies suggest that ethical reflection should consider patients' evolving identities and social contexts, particularly in cases of chronic disability.[181,182] Other authors incorporate elements of situational ethics to highlight the moral claims implicit in the care relationship.[109]

To operationalize ethical reasoning in clinical practice, several contributions propose applied frameworks.[183] One notable example is the 'active engagement model', which combines ethical reflection with clinical decision-making by fostering active listening, critical thinking, and dialogical reasoning within multidisciplinary teams.[183]

Further contributions explored the ethical tensions arising from professional roles, such as the 'double agent' dilemma, where physical therapists must navigate obligations to patients and employers.[184] These tensions are analyzed through classical ethical theories—such as utilitarianism (which focuses on maximizing overall benefit), deontology (which emphasizes duties and prohibitions in professional conduct), and ethical egoism (which considers the interests of the individual decision-maker).[184] Several studies also integrate utilitarian perspectives into rehabilitation goal planning, especially in resource-limited contexts, arguing for a balance between individual-centered care and broader considerations of distributive justice.[185]

Additionally, some authors critically engage with utilitarian bioethics—particularly the views of Peter Singer—arguing for an ethics of rehabilitation that affirms the intrinsic value of persons with disabilities, independent of their perceived productivity or 'quality of life'.[186]

Finally, a few theoretical models are proposed to guide ethical analysis in specific contexts, such as private physical therapy practice.[187] These models emphasize the need for ethical tools that are sensitive to the relational and communicative aspects of care, advocating for a dialogical approach that moves beyond formal consent to promote mutual understanding and trust.[187]

Ethical Reasoning

The studies included in this category focus on how physical therapists engage with ethical challenges in everyday clinical practice, emphasizing reasoning processes. Rather than applying fixed principles, physical therapists often draw upon implicit moral intuitions, practical experience, and case-specific judgments to resolve ethical issues and conflicts among principles.[188] Ethical reasoning is portrayed as a dynamic, context-dependent process, shaped by clinical environment, resource constraints, and interprofessional relationships.[120]

However, several contributions highlight the importance of integrating ethical reflection into broader clinical decision-making frameworks.[189] These studies suggest that ethical reasoning in physical therapy is most effective when embedded in relational modes of thinking, allowing for attention to patient goals.[190]

To support such reasoning, several authors propose structured tools and models. The Realm-Individual Process-Situation (RIPS) model, for example, facilitates ethical analysis by distinguishing between individual, organizational, and societal dimensions of a dilemma.[191] Other studies emphasize the utility of structured ethical consultations to help clinicians identify value conflicts and clarify justifiable actions. [192]

Importantly, ethical reasoning in physical therapy also reflects tensions between ethical principles and external pressures. Studies in sports medicine, occupational health, and private practice reveal that financial incentives, institutional policies, and performance expectations can challenge physical therapists' ability to act according to their ethical commitments within a sort of 'moral compromise'.[193]

Finally, several contributions argue for enhancing ethical reasoning through continuous ethics education, interprofessional dialogue, and reflective practice.[113]

Ethical Reasoning and Education

This category encompasses studies that investigate the development, effectiveness, and pedagogical strategies of ethics education in physical therapy. A central concern is how educational interventions influence students' ethical reasoning across academic and clinical settings. Several contributions employ longitudinal or pre-post designs using standardized instruments such as the Defining Issues Test (DIT).[194–196] While some studies demonstrate significant improvement in post-conventional ethical reasoning following intensive ethics courses grounded in transformative learning theory, others find little to no measurable change over time, suggesting limitations in conventional curricula.[194–196]

Case-based learning (CBL) emerges as a widely used strategy, promoting ethical reflection through discussion of real-life scenarios.[197]

When introduced early in training, this method fosters critical thinking and enhances moral sensitivity.[134,197] Where there is active student participation in identifying and analyzing ethical problems, the results are promising.[134]

Formal instruction in bioethics appears to have the effect of enhancing students' confidence in addressing ethical issues and improving interprofessional relational competence.[196]

Comparative studies between students and professionals indicate that practicing clinicians tend to employ more mature moral reasoning patterns than students, likely due to accumulated clinical experience and the demands of real-world decision-making.[198] These findings underscore the importance of mentorship, reflective practice, and situated learning in the workplace as key components of ethics education.[115,199]

Clinical placements and internships are repeatedly identified as contexts in which ethical awareness is tested and refined. Students frequently encounter ethical tensions, and they often feel ill-equipped to resolve them.[130,131,199] Reflective journaling and narrative analysis reveal gaps in the application of ethical principles and highlight the need for better integration of academic instruction with clinical practice.[130]

Finally, cultural and contextual variables play a role in shaping ethical priorities and reasoning. Some studies identify shifts in value hierarchies across academic years—such as an increasing emphasis on equity and professional responsibility—while others note disciplinary differences in ethical preferences, with physical therapy students tending to favour collaborative and relational approaches to ethical challenges.[197]

Collectively, these studies suggest that ethics education in physical therapy requires more than formal instruction: it demands pedagogical approaches that are experiential, reflective, and context sensitive.

Perception of Ethical Issues

Studies in this category explore how physical therapists perceive ethical issues in their daily practice.

Qualitative research conducted internationally reveals considerable variability in how ethical problems are perceived, shaped by local healthcare structures, regulatory frameworks, and sociopolitical environments.[106,107,200] In particular, practitioners report feeling constrained by insufficient ethical guidance in relation to ethical codes.[107,201]

Perceptions of ethical problems also differ across professional settings and domains. In hospital environments, physical therapists commonly identify issues related to justice, resource allocation, and professional autonomy.[106,202] These concerns were especially pronounced during the COVID-19 pandemic, and in low-resource countries.[106,201]

Sociocultural variables play a significant role in shaping ethical sensitivity and principles. Cross-sectional studies identify gender-related differences in empathic engagement and interpersonal sensitivity, with female physical therapists often demonstrating higher ethical awareness in relational domains.[203] In certain contexts, private sector professionals report greater alignment with patient autonomy, whereas public sector practitioners prioritize collective needs.[204] Additionally, differences can be observed across national boundaries and educational backgrounds.[204]

Ethical problems are not limited to patient care but extend to interprofessional relations and organizational dynamics. Physical therapists frequently perceive tensions arising from medical hierarchies, unclear role definitions, and power imbalances, particularly when clinical judgment is overridden by institutional directives.[205]

Several studies emphasize the perceived gap between academic ethics education and real-world ethical challenges. While physical therapy educators recognize the importance of ethics and advocate for greater curricular integration, practicing clinicians often report unmet needs in ethical training.[200]

Ethics of the Care Relationship

This category explores the ethical dimensions embedded in the care relationship between physical therapists and patients. Studies emphasized that ethical physical therapy practice extends beyond technical competence to include relational sensitivity and a commitment to fostering patient self-determination.

A central theme across the literature is the ethical complexity of touch, corporeality, and intimacy, particularly in the treatment of elderly or vulnerable patients. These interactions require physical therapists to manage professional boundaries while cultivating a sense of safety and respect, often in the absence of explicit ethical training.[167,173]

Another key focus concerns the models of the therapeutic relationship, contrasting hierarchical or paternalistic models with a patient- centered care relationship.[206]

The concept of informed consent emerges as a pivotal ethical practice. Some physical therapists view it primarily as a formal requirement or a means to ensure legal safeguard or therapeutic adherence, while others advocate for a dialogic process that supports patient agency and autonomy.[207]

Several studies also examine moral distress experienced by physical therapists when constraints such as limited time, inadequate staffing, or institutional protocols, hinder their ability to provide ethical care aligned with their professional principles.[208]

The asymmetry of knowledge and power in the physical therapist-patient relationship is identified as a persistent challenge. To address this, the literature calls for greater attention to communication and patient empowerment.[122,207,209]

Justice and Equity in Clinical Ethics

This category focuses on ethical issues related to justice, fairness, and equity in physical therapy practice, particularly in relation to access to care and resource allocation.

Several studies explore the tensions between clinical responsibilities and systemic constraints—such as institutional productivity targets, staffing shortages—that may prioritize efficiency or financial metrics over quality and equity of care.[210,211]

Ethical problems surrounding resource allocation are particularly pronounced in public or resource-limited settings, where physical therapists must make difficult decisions about treatment prioritization and duration.[211]

From a theoretical perspective, scholars have proposed moving beyond traditional distributive models of justice toward approaches that consider the real opportunities individuals must achieve health and well-being.[12]

Relatedly, some studies advocate for a needs-based approach to justice in healthcare, particularly in systems like Sweden’s, where universal coverage supports more consistent ethical reasoning around equitable care.[212]

The literature also highlights the concept of social responsibility in physical therapy, urging professionals to engage with communities, and contribute to health equity beyond the clinical setting.[12] This includes addressing structural barriers such as provider shortages, limited access to rehabilitation in rural or underserved areas, and sociocultural stigmas. Educational interventions are seen as essential to preparing future professionals for justice-oriented practice. Experiential learning models—such as critical reflection—are proposed to foster ethical awareness and empower students to address inequities within and beyond clinical environments.[213]

Codes of Ethics

This category explores the development, application, and interpretation of codes of ethics in physical therapy, examining their role in guiding professional behavior, shaping identity, and addressing ethical challenges. Codes of ethics —distinct from clinical guidelines or legal regulations—articulate ethical duties and prohibitions in professional behavior within clinical practice.

Research assessing physical therapists' awareness and application of ethical codes revealed generally good levels of familiarity, particularly among older and more experienced professionals.[214]

Other studies pointed to a gap between formal codes and everyday practice, with physical therapists often relying on intuitive reasoning or personal principles in ethically complex situations.[215,216] These findings highlight the limited use of codified ethical principles in daily decision-making, prompting calls for structured training programs.[215,217]

Several contributions examine how ethical codes are developed and revised, often through participatory methods.[216] Some studies emphasized that codes of ethics should be actively internalized during professional formation.[217] Indeed, rather than serving as static rulebooks, ethical codes are dynamic tools that evolve with changing societal expectations and professional contexts, demanding ongoing reflection, critique, and education to remain relevant and impactful.[218]

From a historical perspective, the early evolution of ethical codes in physical therapy reveals their strategic use in legitimizing the profession. One study traced how the American Physical Therapy Association's first code (1918–1935) prioritized alignment with the male-dominated medical profession and omitted reference to patient-centered principles, reflecting the profession's struggles with gendered power dynamics and institutional recognition.[219]

Study 3: Perceived Bioethical Issues in Cancer Rehabilitation: A Qualitative Study Among Italian Physiotherapists

Background and Rationale

Thanks to significant clinical and pharmacological innovations, today, we can treat oncological conditions and prolong the lives of many people with cancer who once had no hope of survival.[142,143] However, the limitations of medicine still prevent us from always defeating the disease, creating difficulties in decision-making and the potential for prolonged suffering in some instances.[220–222]

This context raises the interest of the bioethical discipline, which questions the moral implications of biomedical and biotechnological progress.[165] Are the new medical opportunities to address oncological conditions always beneficial for the patient? When can intervention be classified as therapeutic obstinacy, as futile care that causes harm rather than benefit the patient? Should we support the duration of biological life even if it is at the expense of biographical life? [223] These and other similar questions fuel the bioethical debate on end-of-life issues, involving other fields of study such as medical ethics [224] and medical deontology [225], which respectively identify ethical principles and their translation into rules of conduct aimed at guiding physicians and healthcare professionals in their profession. Does the duty to intervene to cure (ethical principle of beneficence) have boundaries?[163] How does it relate to the prohibition of harming the patient (ethical principle of non-maleficence) given that every treatment entails serious side effects?[163,226] How does it intersect with subjective concepts such as well-being and quality of life, and when is it appropriate to shift the focus from therapy to palliation?[227,228] How should communication with the patient be managed to ensure that their consent or dissent is fully informed (ethical principle of autonomy)?[163,229]

The literature has extensively investigated these questions, considering the physicians' perspectives.[230–232] However, cancer management is multidisciplinary and different health professionals work with patients. In particular, the physiotherapist's role has become an integral part of the medical team in oncology, as rehabilitation is fundamental to increasing the patient's quality of life while reducing disability levels.[140,141] Consequently, ethical perspectives on this context should include physiotherapists. Nevertheless, the literature has so far focused on investigating the link between ethics and physiotherapy in general [116,135,166,183,189,233–241] or more partially on end-of-life issues [14,136,242,243], with little to no studies in oncology.[244,245]

Hence, this qualitative focus group study aimed to identify and explore the bioethical issues in oncological rehabilitation as perceived by a group of Italian physiotherapists experts in this field. Specifically, it seeks to serve as a tool for descriptive ethics, helpful in capturing an existing reality about what physiotherapists perceive or interpret as ethical dilemmas in their professional practice in oncology.

Conducting this study in Italy represents a unique opportunity due to the country's socio-cultural context that can significantly shape bioethical considerations in cancer rehabilitation. Italian society, with its predominantly conservative values, deep-rooted Catholic traditions, and family-centered decision-making processes, creates a distinctive environment in which these ethical themes unfold.[246,247] The Vatican further reinforces moral considerations aligned closely with religious teachings, which can influence healthcare providers' approaches to ethical challenges.[248,249] For instance, decisions regarding the disclosure of diagnoses often involve requests from family members to shield patients from distressing information, reflecting a paternalistic view of care [246,247]. Moreover, this cultural backdrop shapes the balancing act between fostering hope and maintaining realistic expectations.[241,250] Due to their frequent and close contact with patients, physiotherapists often become confidants, sometimes feeling obliged to support patient optimism even when transparency might be compromised.[251] Finally, these socio-cultural factors influence decisions on treatment continuation or withdrawal, particularly in terminal cases. In such instances, the wishes of family members can take precedence over other considerations. This culturally embedded context highlights the importance of considering Italy's distinctive social and ethical influences when examining bioethical practices in cancer rehabilitation.

Methods

Study Design

The authors conducted a qualitative focus group study. Qualitative research is the most effective method for gathering experts' opinions [148]. A focus group is the ideal methodological tool to foster the development of peer support, as the group can help explore and clarify the views of a group of individuals.[149] The study was performed per the Declaration of Helsinki and reported following the COREQ.[150] The COREQ summary sheet can be found in Supplementary material n°5. Ethical approval was obtained from the Ethics Committee for University Research, University of Genova (Approval date: 27/06/2023; Genova), and informed consent was collected.

Participants

Study participants were recruited through purposive sampling.[151] Specifically, participants in this study were carefully selected to include a range of perspectives on cancer rehabilitation. We had Italian physiotherapists with clinical and academic expertise in the field. To be considered experts and participate in the focus groups, the participants must have had at least five years of continuous experience in cancer rehabilitation or possess advanced education degrees and training in cancer rehabilitation. Participants were contacted via email and sourced through universities, oncology facilities, personal networks, and snowball sampling, with eligibility determined by analysing their professional backgrounds. Then, participants were selected primarily through the analysis of their curricula vitae. GB conducted the curricula vitae analysis. Once GB identified the eligible participants, he recruited them by email. The email reported the purpose of the study, how the research would be conducted (e.g., through focus groups), and the confidentiality and anonymity of the data. The informed consent form was sent as an attachment, which participants were required to complete, sign, and return via email. Each focus group consisted of three to seven participants. The disparity in participant numbers across different focus groups can be attributed to the participants' practical constraints related to work and family commitments, affecting their ability to attend the scheduled online meetings. Each focus group lasted between one to two hours.

Data Collection

An open-question-based focus group guide (Table 6) was constructed, based on existing literature on cancer rehabilitation [15,143], by a physiotherapist experienced in cancer rehabilitation (GB), a physiotherapist experienced in qualitative research (SB) and a bioethicist (SP). Relevant information about Focus group facilitators and researchers' profiles can be found in Supplementary material n°6.

Table 6 – Focus Group guide

Introduction	
1.	Introduction to the project and presentation of the moderators
2.	Presentation of the participants in the focus group
3.	The researchers provided a definition of ethical dilemma to the participants to have a shared language. Specifically, we reported that an ethical dilemma is a complex situation that raises moral questions and prompts reflections on what is right and what is wrong. It often involves conflicts between values, duties, or interests, challenging the morality of the actions or decisions involved. It can stem from specific circumstances, such as difficult medical decisions or ethical issues in healthcare, and requires a weighted assessment of the various factors involved to find the best possible solution

	Questions
1.	Cancer is still a widespread condition that limits patients' quality of life. Physiotherapy is certainly useful and important for individual with cancer. Does bioethics play a role in cancer rehabilitation?
2.	Could you tell us about the ethical dilemmas you have faced during your clinical practice in cancer rehabilitation?
3.	Are there any ethical dilemmas that we have not mentioned that are nonetheless relevant or important to you?
4.	How have you addressed these ethical dilemmas? (with a colleague/coordinator/ethics committee)
5.	Where does your sensitivity related to these bioethical issues come from? (e.g., from a course? From religion? From university training?)
6.	Is there any topic we have not touched on that you feel is important to highlight or elaborate on?

For each explored thematic area, we formulated stimulus questions to encourage dialogue and discussion among participants to answer our research question. The guide was also reviewed by two patients who underwent cancer rehabilitation to grant patients perspective in our research [152,153]. Finally, a pilot interview was conducted with a lecturer in cancer rehabilitation to test the guide's relevance and understandability. The individual involved in the pilot interview is a male physiotherapist who has been working in oncological and palliative rehabilitation for 15 years. Additionally, he has taught ‘Rehabilitation in Oncological and Palliative Care’ for the past five academic years in a BSc in Physiotherapy at the University of Brescia. The focus groups were conducted online with only the moderators and participants. The software used for the focus groups was Microsoft Teams. Three moderators (GB, SB, and SP) were present during the focus groups. No close relationships were established before the study between the focus group moderators and the participants. No follow-up focus groups were performed. The focus groups were recorded and transcribed *verbatim*. The transcription was obtained through the software's automatic transcription feature and checked for precision and accuracy by GB and VC by comparing the transcription to the audio recording.

The recordings were preserved in a secure database and deleted after data transcription. While conducting the interview, GB anonymised the participants as 'Participant 1', 'Participant 2', etc., according to the chronological order of the interviews. This label is the only information shared with the rest of the group. The analysis of the collected data was carried out after focus group transcription.

Data Analysis

We collected descriptive data related to participants' gender, age, geographic origin, and professional role. Data analysis was performed according to the principles of Braun's and Clark's RTA.[154] This choice was made because the research aims to identify patterns of meaning - and consequently themes - relating to the role of physiotherapists in oncology, focusing on bioethical issues in cancer rehabilitation as perceived by physiotherapists.[155] More details on the characteristics of the authors to understand their standpoint in the reflective process can be found in Supplementary material n°6 (Focus group facilitators and researchers' profiles). More details on the analysis process through Reflexive Thematic Analysis can be found in Table 7 (six steps of RTA) & in Supplementary material n°7.

Table 7 – Six steps of RTA

Phases	Process	Authors' Involvement	Authors' Actions
1) Data familiarisation	All authors read and reread several times the transcriptions of the focus groups. This process is fundamental to getting in contact with the data and	All authors engaged in this phase, and they met to reflect upon their first insights	- Document theoretical and reflective thoughts: GB documented field notes ("Memos" and diary) during and after each focus group to promote reflexivity. - Keep records of all data field notes, transcripts, and reflexive diary - Prolong engagement with data and triangulate

	taking notes of any insights.		different data collection modes to increase the probability that the research findings and interpretations will be found credible: GB e VC read and reread the data (transcripts of the focus groups, memos, and reflexive diary)
2) Coding	In this phase, two researchers systematically coded the data through an open, evolving and organic process.	GB and VC systematically coded the data. They adopted semantic data coding.	- Peer debriefing: memos were shared during research meetings for reflexive thoughts. - Audit trail of code generation: GB and VC coded data through the entire data set to identify interesting aspects in the data items that may form the basis of themes across the data set. - Documentation of all team meetings and peer debriefings to help researchers examine how their thoughts and ideas evolve as they engage more deeply with the data
3) Generating initial themes	The researchers generated initial themes from the codes, clustering similar or related codes.	GB and VC generated initial themes separately, clustering similar codes together.	- Diagramming to make sense of theme connections: GB and VC generated initial themes through deductive thematic analysis.
4) Reviewing and refining themes	The researcher reviewed the initial themes, reworking or discarding some until	All authors reviewed the coding and initial themes separately and then jointly and generated four themes that	- Themes vetted by team members: the research team frequently met to refine the themes and clearly show how each theme was derived from the data.

	finding a final set of themes fitting the data.	fit the data the most. GB and VC reviewed the agreed themes against the codes and the entire dataset.	
5) Defining and naming themes	The 'story' of each theme is developed by finalising theme names and their definition.	All authors finalised the final themes and definitions to set the basis of the written report.	- Peer debriefing and team consensus on themes: the research team met until the final themes were reached. - Documentation of theme naming.
6) Producing the report	The authors produced the final report and refined them if necessary.	GB and VC selected the illustrative quotations from the interviews, and all authors reviewed and agreed. GB, SB and SP led the writing of the paper, and all authors participated in this phase.	- Producing the report using direct quotes from participants. - Report on reasons for theoretical, methodological, and analytical choices throughout the entire study.

Results

Six focus groups were conducted in July and September 2022 with thirty-one participants (Age: 42 ± 10,5; 32% Men N=10; 68% Women N=21, Table 8). Of the participants, all were expert clinicians, six were clinicians and lecturers, and one was a researcher in cancer rehabilitation who also possesses several years of clinical experience in this field. All the contacted participants accepted to partake in the study.

Table 8: Descriptive Statistics

Participant	Age	Gender	Educational level, Professional role	Y. of Expertise	Region
1st Focus Group (November 2023)					
P1	53	Woman	BSc, Clinical expert	13	North
P2	54	Man	BSc, Clinical expert, and lecturer	30	North
P3	38	Woman	MSc, Clinical expert	40	North
2nd Focus Group (November 2023)					
P4	55	Woman	MSc, Clinical expert	29	North
P5	39	Woman	MSc, Clinical expert, and lecturer	13	South & Islands
P6	28	Woman	BSc, Clinical expert	6	North
P7	41	Woman	BSc, Clinical expert	19	North
P8	43	Woman	BSc, Clinical expert	21	North
3rd Focus Group (November 2023)					
P9	35	Man	MSc, Clinical expert	11	North
P10	39	Man	MSc, Clinical expert	16	North
P11	26	Woman	MSc, Clinical expert	5	North
P12	45	Man	MSc, Clinical expert	22	North
P13	45	Woman	MSc, Clinical expert	10	South & Islands
4th Focus Group (November 2023)					
P14	60	Man	MSc, Clinical expert, and lecturer	30	North
P15	26	Man	BSc, Clinical expert	5	North
P16	37	Man	BSc, Clinical expert	8	South & Islands
P17	28	Woman	MSc, Clinical expert and lecturer	7	North
5th Focus Group (November 2023)					
P18	42	Woman	BSc, Clinical expert	19	North
P19	27	Man	MSc, Clinical expert	5	North
P20	34	Woman	MSc, Clinical expert	13	North
P21	49	Woman	BSc, Clinical expert	25	North
P22	41	Woman	MSc, Clinical expert	19	North
P23	61	Woman	MSc, Clinical expert, and lecturer	39	North
P24	54	Man	MSc, Clinical expert	28	North
6th Focus Group (November 2023)					
P25	36	Man	MSc, Clinical expert	13	North

Participant	Age	Gender	Educational level, Professional role	Y. of Expertise	Region
P26	52	Woman	PhD, Clinical expert, and Researcher	27	North
P27	59	Woman	MSc, Clinical expert	35	North
P28	51	Man	MSc, Clinical expert	24	North
P29	48	Woman	MSc, Clinical expert, and lecturer	26	North
P30	30	Woman	MSc, Clinical expert	8	North
P31	42	Woman	MSc, Clinical expert	18	North

Legend: P, participant
Y, Years
BSc, Bachelor of Science
MSc, Master of Science
PhD, Doctor of Philosophy

From the analysis of the focus groups, four themes were generated (see Table 9 for an example of the coding process and relevant quotations and Supplementary material n°8 for further quotations). According to our participants, these issues encapsulated the primary bioethical challenges encountered by physiotherapists in the clinical care of people with cancer: 1. ‘Challenges of (Non)-Disclosure in Diagnosis and Prognosis’; 2. ‘Balancing Hope and Realism in Patient and Caregiver Expectations’; 3. ‘Weighing Efficacy and Safety in Cancer Rehabilitation’; 4. ‘Decisions on Withdrawing Treatment’.

Theme 1: ‘Challenges of (Non)-Disclosure in Diagnosis and Prognosis’

The main bioethical issue perceived by physiotherapists in cancer rehabilitation centers on the ethical dilemma of (non)-disclosure, particularly when this leads to communication challenges regarding patients' diagnoses and prognoses. This dilemma prompted the authors to generate Theme 1, which addresses the complexities physiotherapists encounter when managing situations where essential information is withheld, impacting patient understanding and informed consent. Participants reported that non-transparent communication on these issues creates significant problems regarding patients' informed consent/disagreement and the legitimacy of therapies administered by professionals. Additionally, the interviewees noted that these issues became even more significant when family members or caregivers were involved, especially if diagnoses/prognoses were disclosed to them instead of the patient. In such instances, relatives might request to keep the patient unaware of this information to “protect them”. However, this process adds complexity and difficulty to the physiotherapist's work, as they must continuously interact with an uninformed patient who might also inquire about their health condition. The interviewees reported that negotiating this delicate balance of what is said and left unsaid complicated the professional's relationship with the patient. As outlined in the subsequent theme, unclear and ineffective communication could also lead to issues and misunderstandings concerning patient and family expectations.

Theme 2: ‘Balancing Hope and Realism in Patient and Caregiver Expectations’

The second theme addressed in this study revolves around managing patient expectations and navigating between hope and realism. Participants in the focus groups highlighted two critical issues: collaboratively shaping rehabilitation goals with patients to align with their expectations and supporting family members and caregivers in understanding achievable rehabilitation objectives. Throughout the focus groups, it became apparent that managing patients’ expectations poses a complex challenge for physiotherapists. Participants emphasised that establishing clear and realistic communication with patients is necessary to ensure that their expectations align with the predefined therapeutic goals. The failure to create realistic expectations was perceived to lead to dissatisfaction, disappointment, and disillusionment. Nevertheless, it is equally crucial to synchronise caregiver and family expectations with the objectives of the physiotherapy team, fostering meaningful involvement and a shared comprehension of the patient's rehabilitation trajectory. The absence of such mutual understanding seemed to foster unrealistic expectations, potentially escalating into conflicts and challenges. This dual responsibility mandates meticulous management and a delicate equilibrium between hope and realism to optimise treatment efficacy and enhance overall patient welfare. This parallels the imperative to balance clinical efficacy and safety, a concept to be further elucidated in the subsequent theme.

Theme 3: 'Weighing Efficacy and Safety in Cancer Rehabilitation'

The third theme was created based on focus group participants' opinions concerning the challenge of balancing clinical effectiveness and safety in oncological rehabilitation. According to the participants, this issue significantly impacts rehabilitation practice and rehabilitative outcomes based on the chosen approach. Some participants noted that opting for a more cautious approach may be viewed as reducing risks for the patient, albeit potentially leading to reduced outcomes. Conversely, others stressed the importance of a more aggressive approach to achieve better results, even at the expense of increased risks for the patient. The risks the participants referred to included fractures in the presence of bone metastases or falls in patients with balance issues. Additionally, participants observed that these considerations extend to cancer rehabilitation research, where practitioners carefully assess the extent of risk-taking with patients and the degree to which a cautious approach should be adopted. The discussion on balancing clinical efficacy and safety in oncological rehabilitation naturally transitions to the complex issue of therapeutic relentlessness and treatment discontinuation. As professionals strive to maximise treatment outcomes for oncology patients, they are confronted with crucial ethical decisions regarding the continuation of therapies. The balance between seeking optimal results and ensuring patient safety thus becomes central in the context of the decision to continue or discontinue treatments. This sets the stage for the generation of the next fourth theme.

Theme 4: 'Decisions on Withdrawing Treatment'

The fourth theme generated in this study revolves around therapeutic futility and the emotional management of treatment withdrawal. This theme brings to the forefront critical considerations regarding treatment persistence and the challenging decisions associated with withdrawing care. During the focus groups, participants highlighted the hurdles related to therapeutic futility, stressing the importance of identifying signs indicating ineffective treatment and addressing the emotional repercussions linked to treatment withdrawal. Reflections on therapeutic futility and the perceived inefficacy of treatments underscore the need to balance pursuing therapeutic objectives and upholding the patient's dignity and quality of life. This consideration entailed addressing the ethical and emotional complexities that may arise during this process. Specifically, participants discussed physiotherapists' concerns regarding the management of pain, suffering, and disappointment in patients and their caregivers when the decision to withdraw treatments becomes necessary. This theme sheds light on the intricacies of clinical decision-making and underscores the importance of adopting an empathetic, patient-centred approach in navigating the conclusion of rehabilitative treatment.

Table 9: Defined codes for the generated themes with examples of quotes

Theme 1: Challenges of (Non)-Disclosure in Diagnosis and Prognosis	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Navigating Diagnosis/Prognosis Disclosure: Implications on Informed Consent/Disagreement	‘Very often we find ourselves in a situation where the patient is sent for rehabilitation without being informed about the prognosis, maintaining ignorance about the severity of their condition. This puts us face to face with the main dilemma: should we still communicate with a patient who is unaware of their situation? In the field of oncology, patients are constantly misled with experimental therapies and special protocols, thus they continue on their path without knowing the real severity of the situation. However, the deterioration of their health becomes inevitable, their body speaks to them, and we as healthcare professionals find ourselves having to confront this reality’ (P1 – Woman – 53)
Bridging the Gap: Ethical and Legal Communication with Caregivers	‘There are multiple motivations that drive family members or even the patient themselves to take certain positions within a family or caregiving context. We often focus on the patient's perspective, but it's important to address the ethical issue when the patient expresses a desire not to inform their family, such as their spouse or child. On the other hand, there are situations where there are constant requests for information from family members eager to be

	close to the sick person. This raises further ethical questions and could open new chapters of reflection on this complex topic’ (P14 – Man – 60)
Addressing Uncomfortable Questions: Managing Patient Discomfort	‘Questions about death are often directed at us physiotherapists, mainly for a quantitative reason - we are the profession that spends the most time directly in close contact with the patient. We are the ones who, in terms of minutes per week, spend the most time with them, and you find yourself being asked questions like: What is life? What is death? Why illness? Why me specifically? How should I face it? And well, it's not easy at all’ (P9 – Man – 35)
Theme 2: Balancing Hope and Realism in Patient and Caregiver Expectations	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Aligning Patient Expectations with Physiotherapist Goals	‘For us too, often the lack of awareness of the diagnosis, when patients come to us, translates into the fact that they are referred to you. They are told, "go there, get rehabilitated, then come back to oncology and you'll do the next cycle of specific therapy." So, there's also, pardon the term, I'm being a bit blunt, but somewhat misleading communication, right? Towards the patient, in the sense that one thing is not explaining well what condition you have? And still fostering rehabilitative expectations that unfortunately we find ourselves in the position of having to somewhat downplay. Downplay, however, in a way, being very careful because if we go in too harshly, clearly, we devastate a person, I mean, our, maybe not taking care of the patient indirectly becomes communication, right? I mean, we don't say things, but if we don't then do them, we're saying things, I won't treat you. So, if you don't treat me, it means there's nothing to be done for me, so it becomes a very slippery slope on which we must work with the entire team’ (P4 – Woman – 55)
Harmonizing Caregiver/Family Expectations with Physiotherapist/Team Objectives	‘The matter of rehabilitative treatment extending to the very end, even now of passing, is a complex and sensitive one. Typically, I assess each situation individually to determine whether to continue rehabilitation, but the decision isn't always mine alone. Sometimes, we may opt to continue passive mobilization even if the patient is in a

	coma, simply because the family wishes it, based on the patient's past enjoyment. The family's request to continue passive mobilization may stem from a desire to provide comfort, prevent pain, avoid stiffness, and alleviate discomfort from prolonged pressure on the anti-decubitus mattress. Even if clinical conditions suggest that rehabilitative treatment no longer offers direct rehabilitative benefits, as a physiotherapist, it can be challenging to refuse, considering the potential improvement in the patient's comfort and perceived quality of life. In such situations, our practice extends beyond traditional rehabilitation goals, addressing the emotional and relational needs of both the patient and their family. Thus, deciding whether to continue or stop rehabilitative treatment becomes a thoughtful consideration of how to compassionately meet these needs, even when direct rehabilitative benefits may be limited' (P2 – Man – 54)
Theme 3: Weighing Efficacy and Safety in Cancer Rehabilitation	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Rehabilitation: Handling Clinical Outcomes and Risk Management	'For me, one issue is the presence of lytic bone metastases in oncology patients, because often the approach is not consistent for everyone. Let's consider a patient with a vertebral metastasis. In some cases, they'll tell you they can move and walk, while in others, they'll say no, they need a brace before they can walk. So, the approach is always a bit inconsistent, and I find the same thing among my physiotherapist colleagues. Some keep the patient in bed or barely seated, while others, like me, try until the very end. Some are more cautious, while others take some risks. My focus is on recovery, whether it's going to the bathroom or taking a few steps in the room. But at least personally, I always try to accommodate the patient's needs, compatibly with the pathology, of course. Others choose to never take risk' (P20 – Woman – 34)
Advancing Research in Cancer Rehabilitation	'I'm unsure whether my research will truly help the patient or, conversely, just wear them out even more. Quite often, we ask the patient for additional appointments and to fill out long questionnaires. It leaves me grappling with the dilemma of how much the patient is truly engaging,

	consciously, in a research project. I always question whether, deep down, I'm really doing them any good. Then, there's already plenty of evidence on the effectiveness of physical exercise in all stages of oncological disease, from diagnosis to the terminal phase. But this evidence often doesn't translate into clinical practice. It's a dilemma that nags at me because I keep on with my research, yet there's a lack of resources to actually apply these findings. Many times, it feels like I'm researching just to advance my career, rather than genuinely for the patients' well-being’ (P26 – Woman – 52)
Theme 4: Decisions on Withdrawing Treatment	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Identifying Therapeutic Futility: Determining When Treatment Becomes Ineffective	‘Often, we find ourselves facing numerous oncology patients, and the oncologist, perhaps out of a lack of courage or to avoid admitting failure, continues to propose extreme and unrealistic treatments. We wonder why they persist in offering such unrealistic proposals, especially when the patient is exhausted and can no longer bear further treatments, radiotherapies, or oncological therapies. This amounts to a case of therapeutic obstinacy, which becomes even more apparent in the pediatric context. In these cases, children are encouraged to play every possible card to win their battle, without realizing that they are sometimes overwhelmed with numerous treatments, including physiotherapy and often orthoses like braces or similar devices. We wonder: what is a child supposed to do when, in the end, they find themselves saying "enough, I can't take it anymore" after being subjected to so many treatments?’ (P1 – Woman – 53)
Emotional Management in Treatment Withdrawal	‘In this process, we often do well with some patients, while with others it's a bit more challenging. This might happen because they're young or they have high expectations, especially regarding physiotherapy itself. Maybe they've had positive past experiences and they're trying to hold onto those. When a strong bond is formed with the patient, it becomes difficult to halt the treatment, even if it might be necessary for the patient's benefit and in consultation with the entire team. There are sometimes

	obstacles in stopping the treatment, perhaps because I also need to gain more experience, so I find it hard to stop at the exact moment it would be right’ (P19 – Man – 27)

Study 4: Physiotherapists prioritise compassionate and patient-centred care while navigating systemic constraints and ethical dilemmas in cancer rehabilitation: a mixed-methods study

Background and Rationale

Cancer is a leading cause of death globally, with 20 million new cases and 9.7 million deaths in 2022.[252] Advances in early detection and treatment have improved survival rates, shifting focus to enhancing quality of life and addressing long-term physical, cognitive, and psychological effects.[253,254] Rehabilitation, including physiotherapy, is now recognised as essential in reducing cancer-related fatigue, improving functional outcomes, and ensuring long-term well-being.[16,18,255,256]

Physiotherapy in cancer management introduces specific challenges, particularly when addressing the needs of patients nearing the end of life.[242] These patients often require specialised care due to the complex interplay of emotional, psychological and existential concerns that require an examination of the ethical challenges of this multifaceted care.[257] The specific bioethical dimensions of physiotherapy in cancer care remain underexplored in the literature compared with other healthcare professionals.[116,258]

Italy is particularly relevant for investigating these issues due to its distinctive socio-cultural and healthcare context.[259] With approximately 3.7 million people living after a cancer diagnosis—equivalent to 6.2% of the population—and an annual increase in prevalence of 1.5%, Italy faces a growing demand for long-term cancer care.[260] Coupled with a well-established national public healthcare system that ensures widespread access to oncological treatments and rehabilitation services, these factors make Italy a relevant framework for exploring the ethical dimensions of cancer rehabilitation. Given the increasing incidence of cancer and the presence of similar healthcare models in many countries, the insights from this study may be valuable for an international audience beyond Italy.[261] Moreover, its predominantly conservative values, strong Catholic traditions, and family-centred decision-making dynamics create a unique environment in which ethical challenges in cancer rehabilitation unfold.[246]

Given the complex interplay of emotional, psychological, and existential concerns in cancer rehabilitation, particularly for patients nearing the end of life, this study aims to explore how physiotherapists navigate these ethical dilemmas. Specifically, it addresses the following research questions:

1. How do physiotherapists address bioethical issues in cancer rehabilitation?
2. What drives physiotherapists' clinical actions regarding non-disclosure, patient autonomy, risk-benefit balance, and treatment withdrawal?

Methods

Design

This study employed a mixed-methods approach to comprehensively examine the ethical dimensions of physiotherapy in oncology.[262] The research design followed an explanatory sequential design, which involved two phases. In the quantitative phase, an online survey was conducted to collect data on physiotherapists' responses to bioethical dilemmas in cancer rehabilitation. In the subsequent qualitative phase, focus groups were conducted to explore the reasoning behind the ethical choices identified in the quantitative phase.

The quantitative findings guided the strategic selection of participants for the qualitative phase, enabling a focused exploration of the reasoning processes and contextual factors underlying ethical decision-making. This approach allowed for a complementary analysis of both numerical trends and in-depth contextual insights, ensuring a thorough understanding of the ethical challenges faced by physiotherapists in cancer rehabilitation.

The study adhered to the Declaration of Helsinki and was reported following the Good Reporting of a Mixed Methods Study (GRAMMS) checklist and the Checklist for Reporting Results of Internet E-Surveys (CHERRIES).[262,263]

Participants

Participants were Italian registered physiotherapists recruited through an online survey distributed via the mailing lists of the National Federation of Physiotherapists' Registers (FNOFI). In Italy, FNOFI is the national regulatory body for physiotherapists, and registration is mandatory to practice. To be included in the study, participants had to be included in the FNOFI and have treated at least one cancer patient in the past 3 years.

Intervention

Quantitative data were collected through an online, self-administered e-survey created using a secure web application[a] compliant with the European General Data Protection Regulations (Regulation (EU) 2016/679). The questionnaire, developed and administered in Italian for linguistic and contextual appropriateness, included clinical vignettes addressing bioethical dilemmas such as patient autonomy, risk-benefit balance, and the emotional and ethical complexities of discontinuing care when treatment is no longer beneficial. These vignettes—validated tools for assessing healthcare professionals’ clinical reasoning and behaviour—presented realistic ethical scenarios physiotherapists might encounter in cancer rehabilitation.[264,265] Respondents selected their preferred course of action from multiple-choice responses structured around five fundamental bioethical principles (beneficence/non-maleficence, self-determination, justice/equity, defensive prudence and compassionate care), developed in collaboration with a bioethicist (SPM). These principles, extensively discussed in bioethics literature, are presented in Table 10 and served as a framework for analysis, acknowledging that other groupings may be equally valid.[163,266]

Table 10: Bioethical Principles and Their Application in Healthcare

Beneficence & non-maleficence:	Healthcare providers have a duty of care, while patients have a duty of self-care. This paternalistic approach assumes that the concept of good, understood as clinical outcome, is uniform for both parties, thus consultation with the patient may be deemed unnecessary. However, involving vulnerable patients in decision-making processes might complicate achieving the ethical aim of care, namely, preserving biological life.
Self-determination:	Recognising that perceptions of good are subjective, patients have the right to be informed and make decisions regarding their treatment based on their individual quality of life preferences.
Justice & equity:	Emphasising fair access to care and responsible allocation of healthcare resources to avoid patient discrimination and disparities.
Defensive prudence:	Balancing patient safety with the need to protect oneself from potential accusations or criticisms, healthcare providers adopt a prudent approach that may involve minimal intervention or, conversely, unnecessary intervention depending on the circumstances.
Compassionate medicine:	Fostering a caring relationship through empathy, compassion, and emotional support, healthcare providers prioritise patient well-being and advocacy.

To ensure transparency, an English-translated version is provided as Supplementary material n°9, which explicitly outlines the bioethical profiles associated with the responses. However, this information was not available to participants during the survey to prevent bias and ensure an authentic assessment of their ethical inclinations. The survey was distributed exclusively via the FNOFI mailing lists, ensuring controlled access. Before dissemination, the questionnaire was pre-tested by ten physiotherapists, leading to minor revisions for clarity and relevance. Participants could review and modify responses before submission, but no changes were allowed after completion. The survey did not randomise question order or use adaptive questioning, and no measures were implemented to prevent multiple responses.

For the qualitative phase, participants from the survey who consented to follow-up were selected based on their alignment with specific bioethical principles outlined in Table 10 (consistent responses in > 50% of scenarios). This purposive selection ensured that each focus group included individuals with well-defined ethical perspectives, allowing for an in-depth exploration of the reasoning behind their ethical decision-making. Respondents who agreed to participate provided their email addresses for further contact.

Focus group guides were developed using open-ended questions based on existing literature on cancer rehabilitation and reflecting the ethical principles that guided the survey design (Table 11).[15]

Table 11 – Focus group guide

Focus Group 1: Principle of Beneficence
Introduction
The preservation or saving of human life is the ultimate goal of medicine. In the field of physiotherapy, this translates into the professional's duty to safeguard or restore an individual’s functionality, which coincides with the patient’s clinical good.
Guiding Questions

1. Why do you believe that health should be understood as a clinical good, meaning full functionality (e.g., a patient being able to move autonomously)?
2. What are the reasons you think the professional is capable of understanding what the clinical good of their patient is?

3. Have you ever had doubts about your position when a patient express desires contrary to the proposed treatment, even if it is clinically appropriate?

Focus Group 2: Principle of Self-Determination

Introduction

The concepts of health and well-being are subjective. The professional knows the patient’s clinical good (full functionality), but this may not align with their concept of quality of life. Therefore, the professional has the duty to inform the patient of their clinical good and propose clinically appropriate rehabilitation measures. However, it is then up to the patient to make their ethical evaluation and decide whether to consent to (or dissent from) the proposed plan. The professional must respect the patient’s self-determination.

Guiding Questions

1. What leads you to believe that the patient’s self-determination should be a central principle in clinical practice?
2. Why do you think informed dissent should be respected even when it is possible to intervene to rehabilitate the patient’s functionality?
3. Does respecting self-determination mean that the patient should request a specific rehabilitation treatment (“medicine of desire”), or should the therapeutic proposal always come from the healthcare professional as the holder of technical expertise?

Focus Group 3: Principle of Justice and Equity

Introduction

Every patient must have fair access to care, without discrimination. The management of healthcare resources must be just and rational.

Guiding Questions

1. What reasons lead you to value the principle of justice and equity in your clinical practice?
2. Do you believe that ensuring equitable treatment for all patients should also guide the management of time and organization?
3. Why do you think the goal of your professional practice is the collective good (and not that of the individual patient)?

Focus Group 4: Principle of Defensive Prudence

Introduction

In professional practice, the priority is to perform one’s work while protecting oneself from potential criticisms, conflicts, and lawsuits. To this end, risks for the patient must be minimized, which, ultimately, is also beneficial for the patient (as they are not directly harmed).

Guiding Questions

1. What are the reasons why it is better to adopt a defensive prudence approach rather than risk conflicts or lawsuits?
2. Why do you think defensive prudence is a necessary strategy in your practice?
3. How much does legal liability influence the therapeutic choices you make?

Focus Group 5: Principle of Compassionate Medicine

Introduction

In professional practice, one aspect that must never be lacking and must remain central is the empathetic and compassionate approach to the patient, to support them on a human level as well.

Guiding Questions

1. What drives you to prioritize compassion and emotional support in patient care?
2. Why do you believe emotional support for the patient is fundamental to the success of the rehabilitation treatment?
3. What reasons lead you to think that the professional should adopt a "maternalistic" approach to the patient, similar to a mother taking comprehensive care of someone entrusted to her?

Details regarding the background and expertise of the researchers involved in the qualitative phase are also provided in Supplementary n°5. The focus groups were conducted online using commercial videoconferencing software, with only the moderators (GB and SPM) and participants present. No prior relationships existed between the moderators and participants, ensuring impartiality.

Each session was recorded, transcribed verbatim using the software's automatic transcription feature, and manually checked for accuracy. Recordings were stored in a secure commercial cloud storage service folder provided by the University of Genova, accessible only to the research team, and were permanently deleted after transcription. To ensure confidentiality, participants were anonymised as 'Participant 1', 'Participant 2', etc, based on the chronological order of the focus groups. This anonymisation was the only information shared among participants during the sessions. Data analysis was conducted after transcription, ensuring a thorough examination of the qualitative insights.

Outcome measures

The study employed both quantitative and qualitative outcome measures to explore how physiotherapists address bioethical issues in cancer rehabilitation. The primary outcome was the prevalence of bioethical principles guiding physiotherapists' decision-making; it was assessed through the online survey, where participants responded to clinical vignettes structured around the principles outlined in Table 10. The secondary outcome was the underlying reasoning and contextual factors influencing ethical decision-making, which were explored through focus groups with participants whose survey responses strongly aligned with specific bioethical principles. This qualitative phase provided deeper insights into how physiotherapists navigate ethical dilemmas, balancing patient autonomy, risk-benefit considerations, and systemic constraints.

The integration of quantitative and qualitative data allowed for a comprehensive analysis, ensuring both the identification of prevalent ethical principles and a nuanced understanding of the reasoning behind clinical decisions in cancer rehabilitation.

Data analysis

The analysis of data followed the explanatory sequential mixed-methods design, with distinct approaches for the quantitative and qualitative phases, followed by their integration.

Quantitative data analysis

Descriptive statistics were calculated using frequencies, percentages, means, and standard deviations for closed survey questions. Respondents were categorised based on the rehabilitation setting where they practised: orthopaedics/traumatology, neurology, oncology / palliative care, cardiopulmonary, sports, geriatrics and paediatrics. This classification was adopted to examine response patterns based on clinical environments and patient populations. Results were summarised using tables and figures to illustrate key trends.

Qualitative data analysis

Focus group data were analysed using Braun and Clarke's reflexive thematic analysis, an approach suited to exploring patterns of meaning in participants' motivations and reasoning.[159] The analysis was conducted inductively within a constructionist epistemology with semantic coding to reflect participants' explicit perspectives. The six steps of reflexive thematic analysis were followed, and no software was used for coding. Further methodological details are provided in Supplementary n°6.

Integration of data

The integration process followed a structured approach. The quantitative phase identified prevalent bioethical principles among physiotherapists, informing the selection of participants for the qualitative phase. Qualitative data provided in-depth insights into the reasoning behind these ethical positions, enriching the interpretation of quantitative findings. This methodological integration ensured a comprehensive understanding of ethical decision-making, balancing numerical trends with experiential perspectives. Further details on the integration process are available in Supplementary n°10.

Results

Flow of participants through the study

A total of 865 participants were initially reached between March and June 2024. Of these, 184 did not enter the study (Figure 2). The demographic characteristics of the remaining 681 participants are presented in Table 12.

Figure 2: Flow of participants through the quantitative phase of the study.

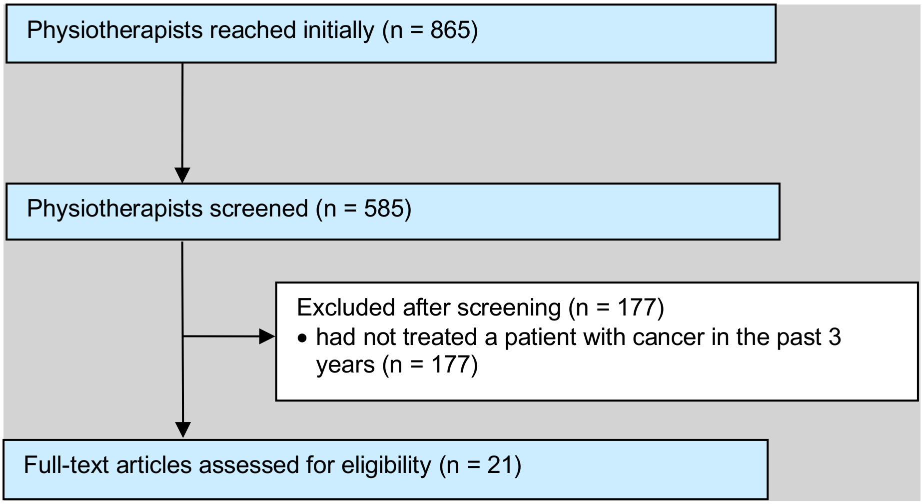


Table 12: Demographic Characteristics

N	681
Age, mean (SD)	44,28 (12.18)
Female, n (%)	492 (72.2)
Geographical Area, n (%)	
Northern Italy	486 (71.3)
Central Italy	108 (15.9)
Southern Italy & Islands	87 (12.8)
Clinical Area*, n (%)	
Orthopedics/Traumatology	420 (61.7)
Neurology	329 (48.3)
Oncology/Palliative care	194 (28.5)
Cardiopulmonary	93 (13.7)
Sports	64 (9.4)
Geriatrics	297 (43.7)
Pediatrics	65 (24.2)

Compliance with trial method

All participants who met the inclusion criteria completed the online survey, ensuring a high level of compliance with the quantitative phase. The survey was designed to prevent changes to responses after submission, and no measures were implemented to prevent multiple responses from the same participant. For the qualitative phase, all 31 participants who were contacted based on their alignment with specific bioethical principles agreed to participate in the focus groups, demonstrating full compliance with the qualitative phase. The focus groups were conducted as planned, with no dropouts or deviations from the protocol.

Bioethical issues management

Compassionate care (29%) was the most emphasised principle, followed by self-determination (26%), defensive prudence (23%), beneficence/non-maleficence (16%), and justice and equity (6%) (Table 13). Similar patterns were observed across clinical settings (Table 13).

Table 13: Bioethical Issues Management

	Beneficence & non-maleficence	Self - determination	Justice & equity	Defensive prudence	Compassionate medicine
Orthopedics / Traumatology	16,51%	24,44%	5,67 %	23,81%	29,56%
Neurology	16,62%	24,52%	5,78 %	24,32%	28,77%
Oncology / Palliative care	15,38%	27,49%	4,64 %	22,59%	29,90%
Cardiopulmonary	18,28%	24,19%	4,84 %	21,51%	31,18%
Sports	14,84%	21,35%	8,33 %	23,70%	31,77%
Geriatrics	16,16%	26,71%	5,27 %	22,84%	29,01%
Pediatrics	16,41%	23,59%	7,18 %	25,13%	27,69%

All respondents	**16,37%**	**25.62%**	**5.51 %**	**23.40&**	**29.10%**

Qualitative data results

Five focus groups were conducted between October and November 2024 with 31 participants, including 16 women and 10 men, with a mean age of 44 years (SD 12) (Table 14). All participants were physiotherapists, with all but one originating from northern Italy. All the contacted participants accepted to participate in the study.

Table 14: Focus group participants

Beneficence & non-maleficence Focus Group			
Participant	**Age**	**Gender**	**Region**
P01	30	Man	North
P02	36	Man	North
P03	62	Woman	North
P04	54	Woman	North
P05	42	Woman	North
P06	42	Woman	North
P07	40	Man	North
P08	42	Woman	North
Self-determination Focus Group			
Participant	**Age**	**Gender**	**Region**
P09	61	Man	North
P10	46	Man	North
P11	29	Woman	North
P12	54	Man	North
P13	61	Woman	North
P14	39	Man	North
Justice & equity Focus Group			
Participant	**Age**	**Gender**	**Region**
P15	37	Woman	North
P16	27	Man	North
P17	57	Woman	North
P18	35	Woman	North
P19	36	Man	North
Defensive prudence Focus Group			
Participant	**Age**	**Gender**	**Region**
P20	44	Woman	North

P21	44	Woman	North
P22	35	Man	North
P23	52	Woman	North
P24	24	Man	North
P25	35	Man	North
Compassionate medicine Focus Group			
Participant	**Age**	**Gender**	**Region**
P26	29	Man	North
P27	71	Man	Center
P28	57	Woman	North
P29	52	Woman	North
P30	42	Woman	North
P31	58	Man	North

The focus group analysis identified five main themes, each shedding light on the underlying motivations guiding physiotherapists' actions in cancer rehabilitation. These themes are further exemplified by participant quotes, as presented in Table 15, which provides illustrative excerpts for each category.

The first theme was 'clinical good is the patient's good: expertise to restore functionality', which highlights physiotherapists' focus on beneficence and non-maleficence. Functional recovery was seen as key to dignity and social participation, enhancing quality of life. Participants emphasised avoiding harm (*primum non nocere*) and relied on professional knowledge to guide decisions. By relying on their expertise, physiotherapists sought to bridge the gap between clinical objectives and patient expectations, ensuring effective and safe care.

The second theme was 'patient knows better: respecting autonomy to personalise care', which underscores the principle of self-determination as central to ethical practice. Physiotherapists viewed patients as active participants in their care, emphasising respecting their values and preferences. Collaboration and therapeutic negotiation were described as essential strategies for constructing treatment pathways that aligned with individual needs while maintaining professional responsibility. Even in cases where patients refused treatment, participants demonstrated a commitment to respecting these decisions.

The third theme was ‘everyone deserves care: equity in access and treatment quality’, which reflects a strong commitment to justice and equity. Physiotherapists expressed the importance of equitable distribution of resources, particularly in ensuring continuity of care across different settings and patient demographics. They recognised their social responsibility as advocates for fairness, working to address systemic barriers and reduce inequalities in treatment delivery. Participants emphasised that every patient deserved access to high-quality rehabilitation services regardless of socioeconomic or geographic circumstances. This perspective framed their efforts to prevent disparities and ensure that care was distributed in a manner that upheld the principles of fairness and inclusion.

The fourth theme was ‘it’s better not to take risks: protecting the patient and the professional’, which highlights physiotherapists’ cautious approach in their practice. Defensive prudence guided their actions, with clinical guidelines serving as a foundation for safe and effective decision-making. Participants relied on evidence-based practices to minimise errors and protect patient outcomes and professional integrity. Avoiding high-risk decisions was a recurring concern, particularly when interventions lacked robust evidence. Managing patient expectations also emerged as a critical element, with physiotherapists striving to foster realistic understandings of treatment potential to prevent misunderstandings and build trust. This theme illustrates the intricate balance between adhering to standardised protocols and addressing each patient's unique needs.

Finally, the fifth theme was ‘relationships can heal: compassion as a therapeutic driver’, which brings to light the relational dimension of physiotherapy in oncology. Compassion was described as a therapeutic driver, with empathy forming the foundation of meaningful connections between physiotherapists and their patients. Participants emphasised the importance of adapting care to individual needs, particularly in end-of-life contexts where the focus shifted toward comfort and overall well-being. Even when curative treatments were no longer an option, physiotherapists prioritised interventions that preserved dignity and alleviated suffering, underscoring their commitment to holistic care. This theme illustrates how compassion supports patients emotionally and enhances the therapeutic alliance, fostering a sense of trust and shared purpose.

Table 15: Defined codes for the generated themes with examples of quotes

Beneficence & non-maleficence	***Theme* 1. *Clinical Good is the Patient's Good: Expertise to Restore Functionality***
Centrality of Functional Recovery	"Rehabilitation must enable a person to achieve the best possible autonomy because this allows them to be part of society, build relationships, and live a dignified life." (P07 - Man - 40) "I think function is the core of our work. Improving physical function enables the patient to still feel like a person, not just defined by their illness." (P06 - Woman - 42) "Autonomy is dignity. If we can help a patient regain even a small part of their autonomy, we are doing something significant for their quality of life." (P08 - Woman - 42) "Functional recovery is not just a clinical goal; it's the way we can give patients the opportunity to be active members of their community and family." (P05 - Woman - 42)
Prioritizing the Principle of 'Primum Non Nocere'	"My goal is not to do harm. At worst, I may not be able to help, but I will not harm. For me, this is non-negotiable: causing harm is never acceptable." (P08 - Woman - 42) "It wouldn't feel natural for me to do something that could cause harm. It's as if it's written in our code of ethics: I can't do it, I shouldn't do it, and it's not an option for me." (P05 - Woman - 42) "Causing long-term harm results in negative consequences for the patient in terms of pain and function. That's why I'm unwilling to implement something that I know could cause harm." (P08 - Woman - 42) Even if a patient asks me to treat a specific area, if I know that treatment could be harmful, I won't do it. My job is to determine the best way to provide care without compromising the patient." (P07 - Man - 40)"
Confidence in professional knowledge	"Physical physiotherapists know what is good for the patient, by virtue of their educational and scientific background. We have a responsibility to guide clinical decisions, based on our experience." (P08 - Woman - 42) "I cannot let clinical decisions be completely delegated to the patient. My role is to use professional knowledge to direct toward

	the clinical good, even when it is not intuitive to the patient himself.” (P05 - Woman - 42) “The knowledge we have acquired is critical to making choices that are truly beneficial. Our job is to translate that knowledge into clinical practice that brings measurable results.” (P07 - Man - 40) “Our professional training makes us responsible in making decisions for the good of the patient. It is our knowledge that must guide care, even when the patient may not fully understand the implications of the choices.” (P01 - Man - 30) “I believe that confidence in our professional knowledge is essential, especially when we have to explain to the patient why a certain treatment is the best choice. Science guides us in what we do.” (P01 - Man - 30)
Self-determination	***Theme 2.* *Patient Knows Better: Respecting Autonomy to Personalise Care***
Recognizing the patient as an active subject	“The principle of self-determination is fundamental in clinical practice, because I realize that what I think as a physical therapist is not always in line with what the patient wants. My role is to listen to him and adapt the treatment accordingly.” (P12 - Man - 54) “My job as a physical therapist is to propose my vision, but it is up to the patient to decide if that proposal is acceptable to him. He has to make the final decision.” (P10 - Man - 46) “If the patient is informed, clear about what he or she wants, and actively participates in the decision-making process, this allows his or her autonomy to be respected. Any decision must be the result of sharing between the patient and me.” (P13 - Woman - 61) “The patient's quality of life is central, and only the patient can say what living well means to him. My responsibility is to listen to him, to understand what is important to him, and to adapt treatment to these needs.” (P14 - Man - 39)
Collaboration and therapeutic negotiation	“My task is to suspend my judgment and listen to the patient's goals, because only in this way can I build with him a rehabilitation path that truly respects his needs.” (P12 - Man - 54) Participant 14: “Self-determination always meets with the responsibility and skills of the practitioner. My responsibility is to explain to the patient and then agree together on the treatment path.”

	“I always try to tailor the treatment according to the patient's needs, making sure that he or she feels like a protagonist of his or her path, not just a passive recipient.” (P10 - Man - 46)
Respect for the refusal of treatment	“I respect the patient's wishes, but at the same time I ask the patient why he refuses, why he refuses today. If he has strong reasons, absolutely yes, I respect. If it's no and I don't feel like it anymore, you probably need to reason with him to understand the reasons.” (P13 - Woman - 61) “If the patient expresses his refusal, we need to respect that. But it is also important that he understands the consequences of this choice, because sometimes he does not realize what he is rejecting.” (P14 - Man - 39) “Even if a patient refuses, it is still my job to respect his decision. If his choice is strong and justified, I respect it without trying to force it. If the refusal is not justified, I try to clarify the reasons, but in the end the decision is always up to the patient.” (P10 - Man - 46)
Justice & equity	***Theme* 3. *Everyone Deserves Care: Equity in Access and Treatment Quality***
Equitable distribution of resources	“My work on the ground makes me realize how often there are difficulties in accessing care. The goal is to make the treatment pathway as accessible as possible, trying to ensure continuity, even when patients have to move from the hospital setting to the home setting.” (P16 - Man - 26) “A terminal patient's quality of life must be respected, even if it means doing what is possible with limited resources. Every patient deserves continuity of care, regardless of their stage of illness.” (P15 - Woman - 37) “For me, equity lies in devoting my best efforts to each patient, making no distinction of time or importance, and always doing the best I can, based on each person's needs." (P19 - Man - 36)
The social responsibility of physiotherapists	“My work must ensure that no one is left behind. This principle of justice and fairness must be carried forward in every treatment, trying never to discriminate.” (P16 - Man - 26) “When I work with a patient, I feel responsible not only for him, but also for the benefit my intervention can bring to society. Each rehabilitated person contributes to collective improvement.” (P19 - Man - 36)

	“My role, it is not just individual work, but it has a social impact. My commitment goes beyond the individual patient, trying to ensure that everyone, regardless of economic conditions, has fair access to care.” (P15 - Woman - 37)
Prevention of inequalities in treatment	“In my work I try to avoid making treatment dependent on the patient's social or economic status. Every person, regardless of status, deserves to receive the best we can offer.” (P15 - Woman - 37) Participant 18: “We cannot allow differences between patients. Every person has the right to access care, and we must ensure that no one is excluded or forgotten.” “In time management it is crucial to be fair, treating every patient with equal dedication, regardless of when they arrive or what they require. The important thing is not to leave anyone behind.” (P19 - Man - 36)
Defensive prudence	***Theme* 4. *It’s Better Not to Take Risks: Protecting the Patient and the Professional***
The importance of compliance with guidelines	“When I work, I never do without guidelines. They give me a solid foundation and allow me to operate safely, without taking unnecessary risks. It is a protection for me and for the patient.” (P23 - Woman - 52) “Guidelines are crucial because they minimize the risk of errors. When I am unsure about a treatment, I always refer to the evidence and guidelines to proceed more safely.” (P24 - Man - 24) “It makes me feel safer to know that I am following a well-established protocol. This allows me to reduce the risk of making mistakes and protect the patient from unintended harm.” (P23 - Woman - 52) “Simply, by following the guidelines I can minimize the risk of making mistakes. It is not a matter of rigidity, but of protecting the patient and myself from possible complications.” (P24 - Man - 24)
Avoiding high-risk decisions	“Rather than taking a chance on things that I risk not knowing duly, I prefer to avoid mistakes that perhaps could be avoided with a little more caution” (P24 - Man - 24) “I prefer not to risk proposing treatments without being 100% sure that they are appropriate, to avoid harming the patient or worsening his condition” (P20 - Woman - 44)

	“I don't feel like doing actions that are not supported by evidence or shared reasoning with the team.” (P23 - Woman - 52) “Why should I risk harming the patient and consequently risk harming myself?” (P23 - Woman - 52)
Management of patient expectations	“Managing patient expectations is crucial. They need to be informed realistically about what they can expect from the treatments, to avoid misunderstandings that can lead to conflict.” (P24 - Man - 24) “I always try to be clear with the patient, explaining what we can realistically get out of the treatment. This helps to avoid unrealistic expectations and build a trusting relationship.” (P23 - Woman - 52) “Often patients have expectations that are not compatible with the reality of treatment. I try to educate them about what is possible to achieve, to avoid frustration later.” (P22 - Man - 35) “Explaining to the patient what they can expect from treatment is crucial. If we don't, we risk unrealistic expectations, which inevitably leads to disappointment and conflict.” (P24 - Man - 24)
Compassionate medicine	***Theme* 5. *Relationships Can Heal: Compassion As a Therapeutic Driver***
Empathy as a therapeutic driver	“In oncology, I often feel powerless from the standpoint of treating the disease, but the empathic aspect is key to supporting patients, making them feel understood and helped, despite the difficulties.” (P26 - Man - 29) “Empathy is the way to create a true therapeutic alliance with the patient. When he understands that we are doing this together, even the simplest treatment can become much more effective” (P29 - Woman - 52) “When I work with cancer patients, I feel that empathy is the key to being able to connect with them. It's not just physical treatment, but emotional support to help them cope with the disease.” (P28 - Woman - 57) “In all stages of treatment, but especially in the most difficult ones, my empathy toward the patient becomes the starting point to be able to do something more, which is not only physical, but also emotional.” (P30 - Woman - 42)
Adaptation to the patient's needs	“Every patient has different needs, and my job is to figure out how I can adapt to help him live better, even when I can't cure the disease.” (P26 - Man - 29)

	“The physical therapist cannot be rigid, he must always be adapted to what the patient expresses, what he really needs, both physically and emotionally.” (P29 - Woman - 52) “Not everyone reacts the same way. When I work with them, I focus on what they themselves feel is the best path to deal with the disease.” (P28 - Woman - 57) “We cannot apply equal treatment to everyone, especially in end-of-life cases. Each patient requires a different approach, based on his or her history, wishes and needs.” (P30 - Woman - 42)
Priority to comfort and overall well-being	“Even if I cannot cure the disease, my goal is to improve the patient's quality of life, ensuring the greatest possible comfort.” (P26 - Man - 29) “Even in the most severe cases, where recuperle is not possible, my main goal is to make sure the patient is comfortable, minimizing pain and improving their quality of life.” (P29 - Woman - 52) “Patient comfort is at the center of my interreduction of physical pain is important, but often it is also psychological support that can make a difference.” (P28 - Woman - 57) “The patient's quality of life, especially in treatment, must be at the center of my intervention. If I cannot cure the disease, my goal is to ensure comfort and overall well-being.” (P30 - Woman - 42)

Integration of findings

The integration of quantitative and qualitative findings represents the core analytical phase in mixed-methods research, ensuring that numerical trends align with and are enriched by in-depth participant narratives. This study employed an explanatory sequential mixed-methods design, where the qualitative phase provided interpretative depth to the quantitative results. The integration process followed a structured approach, examining points of convergence, divergence, and elaboration between datasets.

Convergence between quantitative and qualitative data

The survey results indicated that compassionate care was the most emphasised bioethical principle (29%), followed by self-determination

(26%), defensive prudence (24%), and beneficence/non-maleficence (16%). Justice and equity received the lowest emphasis (6%). These findings provided a broad perspective on how physiotherapists prioritise ethical principles in cancer rehabilitation. The qualitative data largely confirmed these patterns, reinforcing the significance of compassionate care and self-determination. Focus group participants consistently emphasised the relational nature of physiotherapy, highlighting the importance of empathetic engagement and the necessity of adapting care strategies to individual patient needs. Additionally, participants elaborated on the nuances of self-determination, explaining that patient autonomy was often challenged by practical constraints such as institutional policies, family expectations, and clinical guidelines.

Explanation of quantitative clusters through qualitative insights

The quantitative analysis categorised participants into groups based on their predominant ethical orientation. The qualitative phase sought to understand why individuals aligned with specific principles and whether these classifications reflected their lived experiences.

Areas of divergence and unexpected findings

Despite general alignment between quantitative and qualitative findings, some discrepancies emerged. Notably, the survey data suggested minimal emphasis on justice and equity (6%). However, qualitative discussions revealed a deeper concern about disparities in access to rehabilitation services. While justice and equity were not explicitly prioritised in the quantitative responses, participants' narratives implicitly recognised systemic barriers and resource limitations. This suggests that ethical justice-related concerns may be underreported in structured survey formats but become more apparent in open-ended discussions. Additionally, while quantitative findings positioned defensive prudence as a distinct principle, qualitative analysis revealed that caution was often interwoven with other ethical motivations, particularly beneficence. Many participants framed their cautious decisions not as purely defensive but as efforts to balance risk with patient well-being.

Coherence between quantitative clustering and qualitative explanations

The integration of findings confirmed that the grouping of participants based on survey responses was broadly consistent with their qualitative narratives. The focus groups provided depth and context, helping to explain why participants fell into specific ethical orientations. Moreover, they revealed that ethical decision-making is dynamic rather than rigidly compartmentalised. Many physiotherapists exhibited fluid ethical reasoning, shifting between principles depending on patient needs, clinical contexts, and institutional constraints.

Study 5: How people with cancer experience the ethical dimensions of physiotherapy in cancer rehabilitation: a qualitative interview study

Background and Rationale

Cancer remains a leading cause of mortality and long-term disability worldwide, with approximately 20 million new cases and 9.7 million deaths reported in 2022.[252,267] Advances in early detection and treatment have contributed to improved survival rates, shifting the focus of care towards the management of long-term sequelae, including persistent physical limitations, cognitive impairments, psychological distress, and disruptions in social functioning.[10,254] These multi-domain challenges often compromise people's autonomy, daily activities, and broader participation in society.[254,268,269] In this context, cancer rehabilitation has become integral to comprehensive cancer care, with demonstrated benefits in restoring function, improving symptoms, and supporting psychosocial adjustment.[15,103,256,270] As physiotherapy becomes increasingly integrated into oncological care pathways, attention has shifted towards the ethical complexities that arise in oncological clinical practice.[111,190,271,272] Physiotherapists working with individuals with cancer—especially in advanced or palliative stages—are routinely confronted with ethically charged decisions.[136,264] These include balancing therapeutic benefit against clinical risk, promoting patient autonomy while ensuring safety, and navigating systemic constraints without undermining compassion or fairness.[264]

Previous studies have highlighted recurring ethical tensions in this setting, including the balance between safety and efficacy, the challenge of truth-telling in sensitive situations, the emotional labour of care, and the perceived limitations of rehabilitation itself.[136,264,273] However, the patient perspective remains markedly underrepresented in the international literature, as little is known about how individuals receiving cancer rehabilitation interpret the ethical dimensions of their care.

Qualitative research has increasingly explored the experiences of people with cancer in cancer rehabilitation, highlighting its role in restoring physical function, quality of life, and a sense of normalcy after or alongside oncological treatment.[274,275] Previous studies have documented challenges related to symptom burden, fatigue, adherence, and access to services, as well as the emotional and relational dimensions of rehabilitative care.[276–278] However, much of this literature has focused on outcomes, service organisation, or patient satisfaction, rather than on how people themselves interpret rehabilitation encounters in ethical terms.[279,280] In particular, the ethical dimensions of everyday rehabilitation practices—such as participation in decision-making, negotiation of safety and risk, equity of access, and relational care—remain underexplored from the patient's perspective, especially within physiotherapy-led cancer rehabilitation.[257,272] Addressing this gap is relevant not only because rehabilitation is increasingly recognised as a core component of cancer care, but also because physiotherapy involves sustained, embodied, and relational engagement with patients over time, positioning physiotherapists at the intersection of technical expertise and everyday ethical practice.[281]

Building on these findings, this qualitative study investigated how core principles of medical ethics—such as autonomy, beneficence, non-maleficence, and justice—are manifested within rehabilitation encounters from the patient's perspective. These findings may provide preliminary insights relevant to clinicians, policymakers, physiotherapists, and researchers by highlighting the cultural and systemic factors influencing access, equity, and ethical dimensions of cancer rehabilitation.

Methods

Study Design

This qualitative interview study aimed to explore patients' perceptions of ethically relevant aspects encountered during cancer rehabilitation.[282–285] From an ethical perspective, this type of research falls under the domain of *descriptive ethics*, as it investigates individuals' moral views, concerns, and experiences without prescribing normative judgments.[286] The study was conducted in accordance with the principles of the Declaration of Helsinki and approved by the University of Genova Research Ethics Committee (Comitato Etico per la Ricerca di Ateneo – CERA; 2025/53). All participants provided written informed consent and were assured of anonymity and confidentiality throughout the study.

We adopted a qualitative methodology grounded in a Reflexive Thematic Analysis (RTA) as described by Braun and Clarke.[159,287] The study was reported in line with the Consolidated Criteria for Reporting Qualitative Research (COREQ) - Supplementary File 1.[288]

Participants and Recruitment

We recruited adult participants (aged ≥18 years) with a previous diagnosis of cancer who had undergone physiotherapy as part of their cancer rehabilitation within the past three years. This timeframe was chosen to ensure sufficiently vivid recall of ethically salient rehabilitation experiences while capturing a recent period of healthcare delivery and organisational practice. We employed a purposive sampling strategy to ensure variation in terms of gender, age, cancer type and stage, and the type of rehabilitation received (e.g., hospital-based, outpatient). This approach aimed to capture a broad spectrum of experiences relevant to the research question.[289] Participants were identified through the researchers' professional network, rehabilitation services, and patient associations. Patient associations involved in recruitment were non-profit organisations supporting people with cancer and their families at the local level (e.g. Medea – Medicina e Arte). Their role supported facilitating initial contact with potential participants by disseminating information about the study; they were not involved in study design, data collection, analysis, or interpretation. Inclusion criteria were the ability to provide informed consent and experience with physiotherapy explicitly related to cancer care. The sample size was determined using the concept of information power, rather than the commonly used but methodologically inappropriate notion of data saturation for reflexive thematic analysis (RTA).[158] Given the researchers' expertise in qualitative methods and bioethics in cancer rehabilitation, the strong theoretical underpinnings of the study, the specificity of the research question, and the purposeful sampling strategy adopted to ensure diversity in participants' experiences, an estimate of 15-20 participants was considered appropriate to yield conceptually rich and analytically relevant data.[290]

Data Collection

An open-question-based interview guide (Table 16) was developed to explore the perspectives of patients with cancer on ethically relevant aspects of physiotherapy within cancer rehabilitation.[264] The guide was designed collaboratively by a physiotherapist experienced in cancer rehabilitation and qualitative research (GB), in consultation with a philosopher with expertise in bioethics (SPM) and with methodological input from SB. Relevant information about interviews facilitators and researchers' profiles can be found in Supplementary material n°5. All three authors are trained in qualitative methodologies and have experience in conducting interview-based research in healthcare contexts.

The guide was structured around four thematic areas: patient involvement in decision-making, perceptions of clinical prudence and risk management, fairness in access to rehabilitation services, and the relational and emotional dimensions of care.[264] Each area included open-ended stimulus questions designed to elicit detailed, experiential narratives aligned with the research objectives.

Table 16: Interview guide

Introduction and Icebreaker
1. To start, would you like to briefly describe your cancer journey and how you came to physiotherapy?
2. When did you feel that physiotherapy became an important part of your recovery path?

3. Could you describe, in your own words, what ‘cancer rehabilitation' means to you?

Autonomy and Treatment Decisions

4. In our study, many physiotherapists said they respect the patient’s autonomy. Did you feel you truly had a say in therapeutic choices, or did it seem like the physiotherapist made decisions for you?
5. Some physiotherapists believe that, in certain cases, it's better not to inform patients too much in order to avoid anxiety or uncertainty. Did you ever feel poorly informed or receive vague responses about your therapeutic options?
6. If you could choose, what level of involvement would you like to have in treatment decisions? Would you prefer a more collaborative approach or rather rely on the physiotherapist’s guidance?

Risks and Caution in Cancer Rehabilitation

7. Many physiotherapists say they adopt a cautious approach to avoid clinical and legal risks. Did you ever feel that this caution limited your chances of physical improvement?
8. Some physiotherapists avoid potentially useful treatments out of fear of legal consequences or due to a lack of scientific evidence. Do you think this is the right approach, or should there be more room for personalized solutions?
9. If you could define the ideal approach to cancer rehabilitation, what would it be like? More cautious and standardized, or more open to experimentation?

Equity and Access to Care

10. Physiotherapists stated that they strive to ensure equity in access to care. Did you feel that all cancer patients have the same chances to receive rehabilitation, regardless of where they live or their economic situation?
11. Do you think cancer rehabilitation was a real support for your quality of life, or more of a 'complementary' service compared to primary treatments?
12. In your opinion, what could be improved to make cancer rehabilitation more accessible and effective for all patients?

Empathy and the Relationship with the Physiotherapist

13. Physiotherapists interviewed stated they value the relationship with the patient and empathy. Did you feel truly understood on a human level, or was the relationship more 'mechanical'?
14. Was there ever a moment when you wished the physiotherapist had been more empathetic, closer to you as a person and not just as a patient?

15. In your view, what should the ideal physiotherapist be like in terms of human and relational qualities?
Critical Aspects of Ethical Management
16. Physiotherapists said that the patient's well-being is their priority, but some patients reported feeling treated like 'numbers' in a system with little time to listen. Did you ever feel that way?
17. If you could speak directly to the physiotherapists who participated in this study, what message would you like to send them about managing ethical issues in cancer rehabilitation?
18. If you could design the ideal cancer rehabilitation system, what would its key features be to make it more humane and effective for patients?
Closing and Open Space
19. Before we finish, is there anything I haven't asked that you feel is important to share?
20. Is there anything you would have liked to add about your experience, or a message you would like to leave?

To ensure that the questions were comprehensible and meaningful from the patient's point of view, the interview guide was reviewed by two individuals with lived experience of cancer and physiotherapy. Additionally, a pilot interview was conducted with a former oncology patient who had completed a rehabilitation programme.[291] This pilot interview served to test the clarity, acceptability, and emotional appropriateness of the guide and led to minor adjustments in wording to improve accessibility and relevance.

Individual interviews were conducted remotely via Microsoft Teams by GB, who had no prior relationship with any of the participants. Each interview lasted approximately 45 to 60 minutes and was audio-recorded with participants' consent. Transcripts were produced *verbatim* using the platform's automated transcription function and subsequently verified for accuracy by GB through comparison with the original recordings. Participants were anonymised using sequential identifiers (e.g., 'Participant 1', 'Participant 2'), and no identifying information was shared beyond the interviewer. Audio files were securely stored on an encrypted, password-protected university server, accessible only to the research team, and were deleted after transcription and verification.

Data Analysis

We collected basic demographic information from participants, including age, gender, and geographic area of residence. Data were analysed using RTA, following the six-phase procedure: familiarisation with the data, generation of initial codes, construction of themes, review of themes, definition and naming of themes, and report production (Table 17).[159] This approach was chosen for its flexibility and its capacity to explore experiential and meaning-oriented data, particularly suited to the aims of this study.[292] More details on the analysis process through Reflexive Thematic Analysis can be found in Table 17 (six steps of RTA) & in Supplementary material n°6 (Theoretical standpoint).

Table 17: Six steps of RTA

Phases	Process	Authors' Involvement	Authors' Actions
1) Data familiarisation	All authors read and reread several times the transcriptions of the interviews. This process is fundamental to getting in contact with the data and taking notes of any insights.	All authors engaged in this phase, and they met to reflect upon their first insights	- Document theoretical and reflective thoughts: GB documented field notes ("Memos" and diary) during and after each interview to promote reflexivity. - Keep records of all data field notes, transcripts, and reflexive diary - Prolong engagement with data and triangulate different data collection modes to increase the probability that the research findings and interpretations will be found credible: GB e VC read and reread the data (transcripts of the interviews, memos, and reflexive diary)
2) Coding	In this phase, two researchers	GB and VC systematically coded the	- Peer debriefing: memos were shared during research

	systematically coded the data through an open, evolving and organic process.	data. They adopted semantic data coding.	meetings for reflexive thoughts. - Audit trail of code generation: GB and VC coded data through the entire data set to identify interesting aspects in the data items that may form the basis of themes across the data set. - Documentation of all team meetings and peer debriefings to help researchers examine how their thoughts and ideas evolve as they engage more deeply with the data
3) Generating initial themes	The researchers generated initial themes from the codes, clustering similar or related codes.	GB and VC generated initial themes separately, clustering similar codes together.	- Diagramming to make sense of theme connections: GB and VC generated initial themes through deductive thematic analysis.
4) Reviewing and refining themes	The researcher reviewed the initial themes, reworking or discarding some until finding a final set of themes fitting the data.	All authors reviewed the coding and initial themes separately and then jointly and generated five themes that fit the data the most. GB and VC reviewed the agreed themes against the	- Themes vetted by team members: the research team frequently met to refine the themes and clearly show how each theme was derived from the data.

		codes and the entire dataset.	
5) Defining and naming themes	The 'story' of each theme is developed by finalising theme names and their definition.	All authors finalised the final themes and definitions to set the basis of the written report.	- Peer debriefing and team consensus on themes: the research team met until the final themes were reached. - Documentation of theme naming.
6) Producing the report	The authors produced the final report and refined them if necessary.	GB and VC selected the illustrative quotations from the interviews, and all authors reviewed and agreed. GB, SB and SPM led the writing of the paper, and all authors participated in this phase.	- Producing the report using direct quotes from participants. - Report on reasons for theoretical, methodological, and analytical choices throughout the entire study.

Results

A total of 20 patients with cancer participated in the interviews (Mean Age: 53.5 ± 9 years; 12 women, 8 men) (Table 18). Participants were recruited from oncology rehabilitation centres across Italy, and all had undergone physiotherapy as part of their cancer rehabilitation within the past three years.

Table 18: Demographic and Clinical Characteristics of Interviewed Participants

ID	Gender	Age	Region	Cancer Type	Stage	Setting
P01	Female	43	North	Breast	Early	Outpatient
P02	Female	55	Centre	Colorectal	Early	Hospital-Based
P03	Female	62	North	Lung	Advanced	Hospital-Based

P04	Female	58	South & Islands	Breast	Advanced	Outpatient
P05	Female	64	North	Lung	Early	Outpatient
P06	Male	55	South & Islands	Prostate	Early	Outpatient
P07	Female	34	Centre	Lymphoma	Advanced	Hospital-Based
P08	Male	58	North	Colorectal	Early	Outpatient
P09	Male	61	South & Islands	Pancreatic	Advanced	Hospital-Based
P10	Female	42	Centre	Breast	Advanced	Outpatient
P11	Male	62	North	Colorectal	Advanced	Hospital-Based
P12	Male	59	North	Head and Neck	Early	Outpatient
P13	Male	41	Centre	Lymphoma	Advanced	Hospital-Based
P14	Female	43	North	Ovarian	Advanced	Hospital-Based
P15	Female	50	North	Breast	Advanced	Outpatient
P16	Male	59	South & Islands	Colorectal	Advanced	Hospital-Based
P17	Female	68	Centre	Breast	Early	Outpatient
P18	Female	56	Centre	Breast	Advanced	Outpatient
P19	Male	52	North	Prostate	Advanced	Outpatient
P20	Female	48	North	Breast	Early	Outpatient

The sample included patients from the North (n = 10), Centre (n = 6), and South and Islands (n = 4), capturing regional variations in access and service delivery across the Italian healthcare system. A variety of cancer types were represented, including breast, colorectal, lung, prostate, lymphoma, and pancreatic cancers, alongside less frequent cases such as ovarian and head and neck cancers. Both early-stage (n = 9) and advanced-stage (n = 11) participants were included, providing insight into how ethical issues might shift across the illness trajectory. In this study, *early-stage* referred to individuals who had completed primary cancer treatments and were in a stable or remission phase, whereas *advanced-stage* referred to those living with metastatic or recurrent disease, including some who were receiving palliative or end-of-life care at the time of rehabilitation.

Settings of care also varied, with 11 participants receiving outpatient rehabilitation and 9 receiving hospital-based interventions. This diversity allowed the study to explore how structural, relational, and organisational dynamics manifest across different institutional contexts. Notably, the sample included both patients who underwent rehabilitation in a more standardised hospital context and those who experienced it within outpatient, often more flexible, services. Overall, this demographic heterogeneity enriched the qualitative dataset and helped surface a wide range of perspectives on ethical tensions in rehabilitation. It supported a nuanced understanding of how themes such as participation, caution, empathy, and access were experienced not as abstract principles, but in relation to real-life variables, including geography, clinical history, and organisational setting.

Before presenting the ethical themes developed through analysis, it is important to highlight the profound meaning patients attributed to physiotherapy. Rather than being perceived as a technical adjunct, physiotherapy was often described as a transformative and essential part of care — a safe space where individuals could reconnect with their bodies, restore dignity, and regain a sense of control. Participants depicted rehabilitation as key to improving quality of life, not only physically but also emotionally and existentially. The symbolic value of physiotherapy influenced how participants made sense of ethical issues, including involvement in decision-making, professional caution, equity, and relational care.

We developed five themes that capture how participants experienced and understood ethically salient aspects of cancer rehabilitation.
The five themes are:

1. ***Patients' Struggle for Meaningful Participation***
2. ***The Balance Between Safety and Control in Cancer Rehabilitation***
3. ***Unequal Access as Systemic Injustice***
4. ***Empathy and Emotional Presence***
5. ***Limits of Standardised Care***

The following sections detail each theme; supporting quotations are provided in Table 19.

Theme 1: Patients' Struggle for Meaningful Participation

Patients frequently felt sidelined in planning and delivering their rehabilitation programmes. Although the rhetoric of autonomy was present, many perceived a gap between what was said and what happened in practice, often linked to informational and power asymmetries. Some struggled to understand the purpose of exercises or the rationale for plans. Yet a guided compliance was sometimes welcomed: deference to professional authority could offer reassurance at moments of vulnerability.

Ambivalence was common. Patients wished to be involved but felt unprepared, exhausted, or unsure of their role; others tried to assert themselves but met processes that rewarded acquiescence and left little room for negotiation. Over time, several moved from silent adherence to more active questioning, showing that participation is not a fixed preference, but a context-dependent process shaped by clinicians' capacity to make space for dialogue. Preferences also varied: some valued goal setting and collaboration, others sought firmer guidance without infantilisation. These nuances support flexible**,** dialogic approaches to engagement.

Theme 2: The Balance Between Safety and Control in Cancer Rehabilitation

Participants described a nuanced view of clinical caution. For many, prudence offered reassurance and a sense of protection during a vulnerable time, especially when therapists adapted sessions to their physical or emotional state. Yet ambivalence was common: the same caution could feel over-protective, becoming an obstacle rather than a support. Some patients internalised this climate, holding themselves back even when encouraged to progress, suggesting that a context prioritising risk avoidance may inadvertently limit growth. Others interpreted caution as defensive practice driven by liability concerns or institutional pressures rather than by individual need, a dynamic that could amplify vulnerability through a kind of emotional contagion.

Overall, caution was not neutral: it was interpreted, embodied, and sometimes contested. While it can foster safety and respect, excessive or poorly explained caution may restrict agency and reinforce asymmetries in the therapeutic relationship. These accounts point to the need for negotiated safety, transparent rationales and calibrated challenge that align clinical judgement with patients' evolving goals and capacities.

Theme 3: Unequal Access as Systemic Injustice

Patients commonly depicted access to rehabilitation as uneven, frustrating, and contingent on where they lived. These were not isolated exceptions but signs of a system that fails to offer equal chances of recovery. Beyond territorial disparities, financial and logistical burdens, transport, time off work, paperwork, added strain, with access often relying on family support or the ability to navigate bureaucracy. Information gaps were pivotal: services were frequently discovered through informal networks rather than institutional pathways, reinforcing the sense that rehabilitation was an optional add-on rather than a standard component of care. Some participants had to push repeatedly to be referred; others felt abandoned during the vulnerable post-treatment phase. Overall, access appeared to depend on factors beyond clinical need, geography, social capital, assertiveness, even luck, creating a perception of rehabilitation as a privilege, not a right. These recurring patterns across settings and diagnoses point to structural inequities embedded in the organisation of care and sit uneasily with the rhetoric of equal cancer care.

Theme 4: Empathy and Emotional Presence

For many participants, the presence (or absence) of empathy shaped the entire rehabilitation experience. When therapists were attuned, emotionally present, and respectful, patients felt supported beyond physical recovery; motivation and trust grew. Empathy was not only verbal: small but powerful non-verbal signals (gaze, tone, posture, touch) conveyed care and made patients feel seen, not merely treated. By contrast, when empathy was lacking, rehabilitation felt mechanical, distant, or alienating, reducing engagement and fostering a sense of being a "case." Even brief moments of relational presence were highly valued in busy settings, often marking the difference between feeling ignored and feeling recognised. Some participants perceived patterns in who expressed empathy—attributing greater emotional attunement at times to younger or female therapists—suggesting that empathy is both a trainable skill and a disposition that meaningfully shapes recovery.

Theme 5: Limits of Standardised Care

Patients often felt caught in systems that prioritised standardisation over personalisation, with protocols leaving little room for individual needs or rhythms. This rigidity was attributed less to individual therapists than to structural pressures, workload, staffing, and throughput, which made care feel rushed and impersonal. Time emerged as more than a logistical constraint: availability and unhurried presence were read as moral signals of recognition, while haste conveyed devaluation. Environmental factors—frequent room changes, noise, lack of privacy—reinforced this sense of fragmentation and invisibility, symbolising organisational disregard. Yet amid constraints, patients also recalled moments of flexibility and collaboration, where plans were adjusted to energy, mood, or goals; these instances restored fit and fostered dignity. What patients asked for was not perfection but space: to be heard, respected, and to matter. Even in resource-limited settings, small acts of presence and adaptability can counter depersonalisation and re-humanise rehabilitation.

Table 19: Quotes leading to the generation of each theme

Theme 1: Patients' Struggle for Meaningful Participation	
Codes defined by the researchers	**Example of quotes extracted from the Interviews**
Perceived vs. actual autonomy	"Sometimes I had the feeling that decisions were made for me, without me fully understanding the options. (P01)" "In theory there's a lot of talk about autonomy, but in practice you're often just a spectator. (P10)"

Informational asymmetry	“No one really explained what we were doing or why. I trusted them, but I didn’t understand much. (P08)” “I didn’t always understand what was happening. Only with the physiotherapist did I feel I could ask questions. (P11)”
Value attributed to expert knowledge	“I thought they knew everything, and I knew nothing. I just followed along. (P04)” “At the beginning, I just said yes to everything. Only later did I realize I had the right to ask why. (P12)”
Variable preferences in decision-making	“I didn’t want everything on my shoulders, but I also didn’t want to be treated like a child. (P19)” “Being young, I had a lot of questions, but I often felt dismissed. (P07)”
Theme 2: The Balance Between Safety and Control in Cancer Rehabilitation	
Codes defined by the researchers	**Example of quotes extracted from the Interviews**
Caution as protection	“The therapist adapted the session depending on how I was feeling. That was respect” (P07). “Knowing that each activity was assessed and adjusted for my safety made me feel protected. (P01)” “The physiotherapist always explained what we could or couldn’t do, and why. That made me feel safe. (P02)”
Caution as an obstacle	“It felt like their fear of making mistakes outweighed their willingness to help me improve” (P10) “I wanted to do more, but they held back. (P05)” “Sometimes I felt they avoided more advanced techniques out of fear of complications. (P06)”
Self-limiting strategies	“I moved slowly, always afraid to do something wrong. (P03)” “Even when the therapist said I could do more, I was scared to try” (P20).

	“They looked scared, so I started to be scared too. I didn’t want to push because I didn’t want them to worry” (P14) “There were days I couldn’t even sit up for long. The therapist would adapt everything. (P07)”
Perception of defensive caution	“The physiotherapist seemed more concerned with covering their back than helping me. (P09)” “I could feel their fear. It wasn’t about me—it was about them being afraid to get it wrong” (P15). “It felt like everything was forbidden – 'too risky', 'not allowed' – but no one explained why. (P13)”
Theme 3: Unequal Access as Systemic Injustice	
Codes defined by the researchers	**Example of quotes extracted from the Interviews**
Territorial disparities	“If you live in the right postal code, you get help. If not, you're out of luck. (P13)” “Rehabilitation shouldn’t depend on your zip code. But often, it does. (P12)”
Economic and logistical barriers	“Without my family's help, I wouldn't have managed. Transport and costs are a real burden. (P05)” “Some had to travel many kilometers or even give up. That’s just not fair. (P01)”
Lack of proactive information from the system	“No one ever mentioned physiotherapy until I insisted. (P14)” “I found out about physiotherapy on the internet. No one in the hospital had mentioned it. (P10)” “In the support group, some women didn’t even know rehab existed” (P18)
Role of personal networks	“Only because an acquaintance, a nurse, told me... otherwise I would have missed it. (P02)” “If it weren’t for a nurse who told me, I wouldn’t even know it existed. (P03)”

Theme 4: Empathy and Emotional Presence	
Codes defined by the researchers	**Example of quotes extracted from the Interviews**
Authentic vs. superficial empathy	“Excellent technique, but cold as ice. I needed humanity, not just exercises. (P10)” “The therapist didn’t treat me like a patient, but like a person with plans, even while in bed. (P07)”
Importance of relational time	“Even just two minutes to talk made me feel human again. (P12)” “He could listen even when I couldn’t speak. That’s what made me feel respected” (P12) “She didn’t say much, but I felt safe just by how she looked at me” (P09) “Even her hands said ‘I’m here with you’. That mattered more than any explanation” (P17). “Just a few extra minutes would have made a huge difference. (P02)”
Effects of empathy on motivation	“My therapist knew when to push and when to slow down. That helped me through the hardest days. (P06)” “He could tell if it was a good day or if I just needed to breathe. That meant everything. (P18)”
Different expectations based on the physiotherapist’s gender and age	“Younger therapists seemed more sensitive. (P04)” “Younger professionals seemed more open to adapting the session to how I felt. (P17)”
Theme 5: Limits of Standardised Care	
Codes defined by the researchers	**Example of quotes extracted from the Interviews**

Perception of impersonal standardization	“It felt like a fixed protocol, regardless of who you were. (P03)” “Everything felt like it followed a strict schedule. People aren't machines. (P02)”
Overload of healthcare professionals	“They were always rushing. Some days it felt like a conveyor belt. (P10)” “Sometimes it felt like we were just there to tick a box. (P09)”
Inadequate time and space	“We changed rooms three times. No locker room, no privacy. Is that really care? (P18)” “With more calm, I felt respected. With rush, I felt like a number” (P11) “It’s not just the exercises, it’s the attention. A few minutes of real attention changes everything” (P08). “We had to change rooms three times. No privacy. That’s not what care should look like. (P18)”
Desire for flexibility and adaptability	“We had a plan, but we adjusted it every week based on how I was doing. (P20)” “They always asked how I was feeling and adapted accordingly. That made a difference. (P16)”

Ethical Considerations

None of the studies included in this doctoral thesis posed any risk of harm to participants; however, strict ethical procedures were followed in accordance with national and institutional regulations to protect participants' rights, dignity, and privacy. All studies involving human participants—namely Studies 1, 3, 4, and 5—were submitted to and approved by the Ethics Committee for University Research (CERA) at the University of Genova. The only exception was Study 2, which is a secondary study (systematic scoping review) and therefore did not require ethical approval.

All data were collected anonymously, following participants' provision of written informed consent. Each participant was assigned an anonymous identifier (e.g., "Participant 7") to ensure confidentiality. Data were securely stored on the institutional OneDrive platform of the University of Genova, accessible only to authorised members of the research team.

For the qualitative components of the research (Studies 1, 3, 4, and 5), interviews were conducted via Microsoft Teams, a platform compliant with the European General Data Protection Regulations (GDPR). Each session was recorded, transcribed, anonymised, and subsequently deleted once the anonymisation process was completed.

The ethical approvals granted by the Ethics Committee (CERA) are reported below:

- **Study 1**: CERA 2022/32 – Approval date: 19/05/2022
- **Study 2**: Not applicable (systematic review)
- **Study 3**: CERA 2023/50 – Approval date: 13/07/2023

- **Study 4**: CERA 2023/50 – Approval date: 13/07/2023
- **Study 5**: CERA 2025/53 – Approval date: 14/05/2025

These procedures were designed to ensure adherence to the ethical principles of respect for persons, beneficence, and justice, as articulated in the Declaration of Helsinki and related guidelines for research involving human subjects.

General Discussions

The ethical dimensions of physiotherapy in cancer care have long remained underexplored, often overshadowed by a predominant focus on medical and nursing roles within oncology. This doctoral research set out to address this gap by investigating how ethical challenges are encountered, interpreted, and navigated by physiotherapists and perceived by patients in the context of oncological physiotherapy. The five interrelated studies that compose this thesis were designed to progressively build a comprehensive, multi-perspective understanding of ethics in this field—beginning with education and professional preparation (Study 1), moving through literature-based mapping (Study 2), and culminating in real-world experiences and reflections from clinicians (Studies 3 and 4) and patients (Study 5).

Study 1 investigated how physiotherapists are trained and prepared to work in oncological physiotherapy, focusing on their professional pathways and learning experiences. The findings revealed that entry into cancer care was rarely supported by structured or oncology-specific educational programmes. Instead, most participants described fragmented trajectories, in which technical training was acquired through general physiotherapy curricula, while competence in oncology—and particularly in emotionally and ethically complex situations—was developed through direct clinical exposure, informal mentorship, and personal reflection. Although ethics was not the explicit focus of the study, the narratives often pointed to ethically sensitive challenges: dealing with end-of-life scenarios, adapting oncological physiotherapy goals in advanced disease, and managing communication with patients and families under distress. These experiences were rarely mediated by formal ethical instruction, and participants commonly expressed a sense of unpreparedness when first encountering the emotional weight and moral ambiguity of oncology practice. Ethics, when addressed during training, was typically limited to general principles or regulatory norms, with little connection to the relational, contextual, and existential dimensions of care. The study thus highlighted a critical gap between the moral complexity of oncological physiotherapy and the current state of professional preparation, suggesting that ethical competence in this field is often cultivated implicitly and unevenly across clinical settings.

Study 2 expanded the investigation beyond the local or national educational context by systematically mapping the existing literature on ethical issues in physiotherapy. The review revealed a field that, while growing, remains underdeveloped in both scope and depth. Ethical discourse in physiotherapy has traditionally revolved around professional codes, patient consent, and interpersonal conduct, but more nuanced issues—such as negotiating autonomy in vulnerable patients, handling treatment refusal, or navigating institutional constraints—are only beginning to receive systematic attention. Notably, the review found that few studies addressed the ethical dimensions of oncological physiotherapy, and even fewer considered the perspectives of patients or explored the embodied, relational nature of physiotherapy. These gaps highlight the limited theoretical and empirical infrastructure available to guide clinicians in ethically complex scenarios.

The qualitative findings of Study 3 offered a crucial shift from theory to lived experience. By examining how Italian physiotherapists in oncology describe the ethical challenges they face in daily practice, the study illuminated the types of dilemmas that emerge in real clinical settings. Several key themes emerged: the tension between respecting patient autonomy and promoting functional recovery; the difficulty of maintaining professional boundaries in long-term therapeutic relationships; and the moral discomfort associated with systemic constraints—such as lack of time, limited staffing, or inflexible protocols—that may compromise person-centred care. These findings resonate with broader trends in rehabilitation ethics literature, where moral distress, ethical uncertainty, and value conflicts have been reported across a variety of settings.[111,205]

A particularly significant insight from Study 3 is the recognition of ethical complexity as situational and relational. Rather than arising from abstract principles, most ethical challenges described by physiotherapists were deeply embedded in the social and emotional fabric of care, affected by institutional culture, team dynamics, patient expectations, and the evolving nature of the disease. This reinforces the idea that ethical decision-making in rehabilitation is not merely a matter of rule-following but involves navigating contextual ambiguity and interpersonal responsibility. As one participant noted, “It’s not about what is right in theory, but what is possible, meaningful, and respectful in that moment, with that person”.

Study 4 further developed this relational view by investigating how physiotherapists reason through ethical dilemmas and the role that ethical principles play in clinical decision-making. The mixed-methods design, combining a survey and focus groups, provided a layered picture of ethical practice. The quantitative component revealed that physiotherapists often rely on intuitive or experience-based reasoning rather than formal ethical frameworks. Although participants reported high levels of concern for patient autonomy and well-being, they also acknowledged limited familiarity with structured ethical models or institutional ethics resources. The focus group data added depth to these findings, illustrating how clinicians grapple with competing demands—clinical effectiveness, patient preferences, family expectations, and institutional pressures—while striving to maintain a therapeutic alliance and uphold their professional integrity.

One of the most striking findings across both components of Study 4 was the discrepancy between ethical ideals and organisational realities. Physiotherapists described feeling caught between what they believed to be the right course of action and what they were practically able to do, due to time constraints, resource scarcity, or administrative protocols. This echoes findings from other studies on moral distress among healthcare professionals, and underscores the importance of considering not only individual ethics but also the systemic and institutional dimensions that shape ethical practice.[293,294]

Finally, Study 5 provided an essential counterbalance by incorporating the voices of patients undergoing oncological physiotherapy. Until now, most research on ethics in physiotherapy has focused on the clinician’s perspective; yet the experiences, expectations, and values of patients are equally crucial for understanding the ethical quality of care. Patients in this study recognized the ethical stakes of their interactions with physiotherapists—not only in terms of clinical decisions, but also in how they were listened to, respected, and involved in their own care process. Some described feeling empowered and supported; others felt marginalised or inadequately informed. Several noted that although physiotherapists were often “the ones who stayed,” their voices were not always included in decisions about treatment goals, intensity, or continuation.

These patient accounts confirm that ethical care in physiotherapy is not just about following principles, but about co-creating meaningful therapeutic pathways that reflect the values and goals of each individual. They also reveal a gap between patient expectations and clinical routines, suggesting a need to strengthen communication, shared decision-making, and explicit ethical reflection in physiotherapy encounters. Importantly, the findings suggest that patients are not passive recipients of care, but active moral agents whose insights can enrich and challenge clinicians’ ethical assumptions.

Taken together, the five studies presented in this thesis construct a multi-layered, empirically grounded picture of ethics in oncological physiotherapy. They show that ethical challenges are not rare or exceptional events, but routine aspects of care that require attention, preparation, and dialogue. They also demonstrate that current approaches—whether in education, research, or clinical practice—are often insufficient to fully support physiotherapists in navigating this complexity. A common thread throughout the research is the need to move beyond a rules-based, compliance-oriented view of ethics, toward a more situated, relational, and reflective approach.

Throughout the five studies, a number of recurrent themes emerge that cut across settings, roles, and perspectives. One of the clearest is the persistent gap in ethical education and preparation. In Study 1, physiotherapists reported learning to navigate ethically complex situations largely through informal means—on-the-job experience, peer discussions, or personal reflection—rather than through structured education. Ethical content, where present in formal training, was perceived as marginal, theoretical, and disconnected from clinical reality. This impression is consistent with the findings of Study 2, which confirmed that while some ethical topics are addressed in the literature—such as consent, confidentiality, or professional conduct—there is little attention to more nuanced, practice-based ethical reasoning. Moreover, very few frameworks or educational models have been developed to support physiotherapists in acquiring ethical competence tailored to the complexities of rehabilitation and cancer care. Together, these studies suggest that while physiotherapists clearly value ethical awareness, the profession has not yet institutionalised the tools, curricula, or language necessary to support it.

Another theme that emerges strongly from Studies 3 and 4 is the divergence between ethical ideals and systemic realities. Physiotherapists often described working within environments shaped by rigid protocols, resource constraints, medico-legal pressures, and administrative priorities. These organisational factors frequently clashed with their ethical commitments to individualised care, relational sensitivity, and patient autonomy. For example, clinicians described tensions between the desire to prioritise what matters to patients—such as maintaining dignity, comfort, or control—and institutional expectations focused on measurable outcomes, throughput, or standardised procedures. This mismatch often resulted in moral discomfort and a sense of disempowerment. In many cases, physiotherapists navigated these challenges without formal support or spaces for ethical reflection, relying instead on their own judgement or on informal team conversations. Yet, the pressure to act efficiently while remaining ethically attuned often created what some participants described as "ethical fatigue"—a low-grade, persistent strain resulting from repeated exposure to moral tension without resolution or validation.

The longitudinal and relational nature of physiotherapy emerged as a central theme across Studies 4 and 5. Unlike many healthcare professionals who encounter patients episodically, physiotherapists often engage with individuals over extended periods. This continuity fosters trust, familiarity, and emotional connection, but also exposes therapists to ethically fraught moments—changes in prognosis, difficult decisions, and fluctuating patient priorities. These situations are rarely reducible to clear-cut dilemmas; rather, they involve navigating ambiguity, responding to evolving patient narratives, and adjusting care in light of shifting goals. In Study 4, physiotherapists described relying on relational cues, empathy, and dialogical negotiation to make ethical decisions. Their approach to ethical practice was therefore not rule-based, but relationally situated and emotionally attuned. This emphasis on the therapeutic relationship as a key medium for ethical care was powerfully echoed by patients in Study 5, who consistently associated ethical physiotherapy with feeling heard, respected, and accompanied, especially during vulnerable moments.

However, Study 5 also revealed a concerning asymmetry: patients recognised ethical dimensions in their care but often felt excluded from decision-making processes. While they valued the relational presence and attentiveness of physiotherapists, they also noted that decisions—particularly about treatment goals, intensity, or cessation—were sometimes made without full transparency or shared deliberation. This exclusion was not always the result of ill intent; rather, it appeared to stem from systemic habits, communication styles, or assumptions about patient preferences. Yet the result was a diminished sense of agency, particularly in complex or end-of-life scenarios where patients most desired to retain control. This finding underscores the need to include patient voices not only in retrospective evaluation, but as active participants in ongoing ethical dialogue.

Across the five studies, then, a composite picture begins to form: physiotherapists in oncology are ethically engaged, emotionally invested, and deeply attuned to patient needs. Yet they operate within systems that often constrain their capacity to act on these values, and they lack consistent frameworks, language, and institutional support for ethical deliberation. Patients, for their part, value the ethical quality of care but experience gaps in communication, participation, and recognition. Ethical practice in this field is not absent—it is present, but unspoken, implicit, and fragile. It relies heavily on individual commitment and intuition rather than collective infrastructure or professional discourse.

These observations carry important implications. First, they point to the inadequacy of traditional ethics education and regulation in capturing the moral complexity of physiotherapy in oncology. Second, they highlight the need for ethics to be conceptualised not as a compliance issue, but as a situated, relational, and evolving practice. Third, they demonstrate the value of including both clinician and patient perspectives in understanding what constitutes ethical care. And finally, they suggest that professional identity in physiotherapy must increasingly incorporate ethical reflexivity—not as an optional skill, but as a core element of competent, human-centred care.

Taken together, the five studies that make up this doctoral research reveal a nuanced and multifaceted picture of ethics in oncological physiotherapy—a picture that is at once fragmented and emergent, under-articulated yet profoundly embedded in everyday practice. What becomes clear is that physiotherapists are already engaging with ethical questions daily, even if they do not always name them as such. The ethical fabric of their work is stitched through clinical judgments, relational moments, emotional labour, and institutional navigation. Yet, this fabric remains largely invisible—undocumented, unsupported, and insufficiently theorised—both within the profession and in broader healthcare discourse.

This invisibility is perhaps the most important finding of all. It is not that ethics is absent in physiotherapy, or that physiotherapists are ethically disengaged. On the contrary, they demonstrate considerable moral sensitivity, intuitive reasoning, and commitment to patient-centred values. But their ethical practice is often ad hoc, reactive, and shaped more by personal experience than by structured reflection, shared vocabulary, or institutional support. It is ethics by improvisation, rather than ethics by design.

Several consequences flow from this condition. One is the risk of inconsistency: different professionals may respond to similar dilemmas in divergent ways, depending on their background, emotional resilience, or informal mentorship. Another is the risk of burnout or moral distress: when physiotherapists feel ethically torn but unsupported, they may internalise the consequences, disengage from their values, or leave the profession altogether. A third is the loss of opportunity: without spaces to name and examine ethical challenges, the profession cannot learn from its own experiences, articulate its moral identity, or contribute meaningfully to interdisciplinary ethical debate.

The patients' voices, captured in Study 5, add further urgency to these concerns. Patients are attuned to the ethical climate of care—they notice whether they are respected, listened to, involved. They value honesty, empathy, and continuity. And they are capable of reflecting on the ethical quality of their interactions. But their perspectives are rarely solicited systematically, and when they are, it is often too late to influence real-time decisions. Patients want to be seen not just as clinical cases, but as moral subjects—persons whose dignity is shaped not only by treatment outcomes, but by the tone, pace, and style of the care they receive.

To address these challenges, the profession needs more than individual goodwill. It needs an infrastructure for ethical reflection: spaces in which physiotherapists can talk about uncertainty without fear of judgement; training that goes beyond rules to cultivate ethical imagination; frameworks that recognise the relational and contextual nature of moral action. Ethics in physiotherapy must be understood not only as a domain of compliance, but as a domain of practice—a form of craft that requires skills, language, and mentorship.

At the same time, any such infrastructure must be tailored to the specificities of physiotherapy. The ethical questions physiotherapists face are not identical to those of physicians or nurses. They emerge from long-term relationships, close physical proximity, and daily negotiations around effort, progress, and limitation. They are shaped by therapeutic goals that are often ambiguous, and by patient trajectories that do not always follow linear paths. Moreover, physiotherapists frequently occupy an ambiguous status within healthcare hierarchies—simultaneously central to the patient's functional recovery, yet peripheral in terms of decision-making power. These features generate ethical tensions that are both unique and underexplored.

This thesis, in its progression from education (Study 1), to literature (Study 2), to professional experience (Studies 3 and 4), and finally to patient perspectives (Study 5), has attempted to map this territory. It has done so not through grand theoretical claims, but through close attention to practice—what clinicians say, do, and feel; how patients experience care; how ethics shows up in the details of physiotherapy work. The picture that emerges is complex, but not chaotic. It suggests that ethical practice in oncological physiotherapy is already happening—but quietly, individually, and often without a name.

By bringing these voices together, this research offers the foundation for a new conversation—one that recognises the ethical richness of physiotherapy, acknowledges its challenges, and begins to articulate a profession-specific ethical perspective. This perspective does not need to replicate the norms of other health professions; rather, it can grow out of the distinctive features of physiotherapy itself: its embodiment, its continuity, its emphasis on movement and adaptation, and its deeply human encounters with hope, suffering, and resilience.

Importantly, such a perspective would not aim to prescribe behaviour through rigid rules. Instead, it would support physiotherapists in developing the reflective capacities they need to navigate uncertainty, manage emotional labour, and engage ethically with each unique patient. It would be grounded in the realities of clinical work, responsive to contextual factors, and open to the voices of all stakeholders—including patients. It would not replace ethical codes, but enrich them; not dictate decisions, but support ethical thinking as a dynamic, situated, and relational process.

This doctoral thesis does not claim to provide such a framework in full. But it does make the case for its necessity, and it offers empirical grounding for its development. It shows that ethics in oncological physiotherapy is not a niche topic, but a pervasive reality. It demonstrates that physiotherapists are moral agents, often acting in morally complex environments without adequate preparation or support.

And it affirms that patients are capable of recognising and articulating the ethical dimensions of care, when invited to do so.

In conclusion, this research invites the physiotherapy profession to take ethics seriously—not only as a regulatory concern, but as a vital aspect of professional identity and clinical excellence. It calls for an expanded vision of ethical competence, one that embraces ambiguity, values reflection, and places the patient-clinician relationship at its centre. And it opens the door to a more mature, confident, and self-aware ethical culture in physiotherapy—one that can speak with its own voice, and contribute meaningfully to the broader ethical discourse in healthcare.

Implications for Research

The body of work presented in this thesis opens a rich and multidimensional landscape for future research in the ethical dimensions of oncological physiotherapy. Each study, while grounded in specific empirical aims, contributes to a broader argument: that ethics in physiotherapy is not merely an ancillary consideration, but a constitutive element of clinical practice, professional identity, and patient experience—particularly in oncology, where questions of mortality, suffering, autonomy, and relational care are intensely present. From this foundation, several research implications emerge, not as discrete recommendations, but as interconnected avenues for deepening, diversifying, and structurally embedding ethical inquiry in the field.

One clear implication concerns the urgent need to expand empirical ethics research in physiotherapy. As Study 2 shows, despite decades of professionalisation, the literature on ethics in physical therapy remains fragmented, descriptive, and disproportionately Western in focus. Ethical challenges are frequently referenced in anecdotal or conceptual terms but rarely investigated through rigorous empirical methods. This thesis responds to that gap by applying qualitative and mixed methods designs to uncover how ethical dilemmas are actually experienced by physiotherapists and patients alike. Yet the need for replication, variation, and extension is acute. Future research must broaden its empirical scope: incorporating different professional groups (e.g., occupational therapists, speech-language pathologists), engaging with more diverse patient populations, and applying methodologies that range from ethnography to participatory action research. Comparative studies across healthcare systems, cultural contexts, and institutional settings are particularly needed to illuminate how ethical reasoning is shaped by social and structural determinants. For example, the prominence of family-centred communication norms in Italy—as revealed in Studies 3 and 5—might contrast sharply with patient-autonomy paradigms in Northern Europe or North America, warranting cross-cultural analysis.

Relatedly, the findings suggest that future research should foreground patient voices far more consistently. Study 5 underscores how patients are not passive recipients of care but moral agents who interpret, question, and navigate ethical dynamics in rehabilitation with remarkable insight. However, as the review and practitioner-focused studies indicate, patient perspectives are chronically underrepresented in the ethics literature. Addressing this imbalance is not simply a matter of equity or inclusion; it is methodologically essential for capturing the relational and negotiated character of ethical practice. Subsequent research should explore how patients define ethical quality in care, how they perceive moral harm or misalignment, and what they understand as the hallmarks of respectful, empowering, and just physiotherapy. This could include longitudinal studies tracing patient experiences over the course of oncological physiotherapy, or deliberative research that includes patients as co-researchers in defining ethical challenges and priorities.

A further implication concerns the need for future normative ethical reflection that takes into account the profession-specific characteristics of physiotherapy practice. Within medical ethics, ethical analysis has traditionally drawn on a range of approaches, including principle-based frameworks (such as principlism) and moral theories developed within moral philosophy, most notably deontological and consequentialist traditions.

Findings from Studies 3 and 4 suggest that ethical practice in oncological physiotherapy is often experienced as a process of balancing tensions rather than applying fixed rules:between autonomy and protection, between hope and realism, between institutional protocols and individual needs. Thus, there is a need for future normative ethical work that takes seriously the unique characteristics of physiotherapy practice: its reliance on bodily touch, its prolonged contact with patients, its intermediate position between medicine and daily life, and its dual orientation toward function and meaning. A future normative ethical reflection could build on the descriptive findings of this thesis, in order to confirm or refute them in terms of their ethical soundness through logical-analytical argumentation. Rather than proposing new ethical frameworks or replacing existing professional codes of ethics, such work could critically examine how established ethical approaches within medical ethics—such as discussions on relational autonomy or narrative dimensions of care—engage with the embodied, relational, and longitudinal features of physiotherapy practice. The findings presented in this thesis may thus provide material to support normative ethical analysis conducted within the appropriate disciplinary contexts.

The theme of constraint, indeed, points to another priority: research must critically examine the systemic and institutional dimensions of ethical care. Across all five studies, participants pointed to time pressures, rigid protocols, bureaucratic fragmentation, and medico-legal anxiety as persistent sources of ethical tension. These findings call for a shift in ethical research from an individualistic to a structural lens—asking not only what professionals should do, but how institutions enable or inhibit ethical care. This includes studying how organisational policies affect communication, continuity, and therapeutic discretion; how resource allocation shapes access and equity; and how institutional culture mediates the expression of compassion or moral courage. Moreover, research could explore how ethics support structures—such as clinical ethics committees, moral case deliberation, or ethics training programs—operate in rehabilitation contexts. Their presence in acute medical settings is well established, but their role in long-term, non-curative care remains underexplored.

From a methodological standpoint, the research also invites the development and testing of educational and training interventions that target ethical literacy and reflective competence. Study 1 revealed gaps in ethics education across entry-level and advanced physiotherapy programs, while Study 4 indicated that even experienced clinicians struggle to address ethical tensions without adequate support. There is thus a need to design, implement, and evaluate educational initiatives that embed ethics not as an isolated subject but as an integral component of clinical reasoning.. Study 1 revealed gaps in ethics education across entry-level and advanced physiotherapy programs, while Study 4 indicated that even experienced clinicians struggle to resolve ethical tensions without adequate support. There is thus a need to design, implement, and evaluate educational programs that embed ethics not as an isolated subject but as an integral component of clinical reasoning. These could involve simulation-based learning, interprofessional case discussions, narrative medicine workshops, or the systematic integration of ethical assessment tools in clinical placements. Future research should examine the impact of such interventions on ethical sensitivity, decision-making confidence, and moral resilience over time.

Digital health and technological innovation constitute another emerging frontier with major ethical implications. As the scoping review notes, the proliferation of tele-rehabilitation, artificial intelligence, and digital monitoring tools raises urgent questions about privacy, depersonalization, and equity. While these technologies promise to extend care, they may also intensify existing disparities or erode the relational core of physiotherapy. Ethical research must keep pace with innovation—not simply as a reactive stance, but through proactive engagement with developers, policy-makers, and users. Participatory ethics design, which includes patients and clinicians in the development of digital tools, could ensure that technological change aligns with core values of dignity, autonomy, and care continuity.

Another underdeveloped line of inquiry concerns equity, diversity, and inclusion (EDI) in physiotherapy ethics. While justice and access were thematized in Studies 2 and 4, the ethics of EDI remain largely marginal in physiotherapy scholarship. Future research must explore how factors such as race, gender identity, disability, socioeconomic status, and linguistic diversity intersect with ethical care delivery. This includes not only documenting disparities, but interrogating how professional norms, educational curricula, and institutional routines may inadvertently exclude or marginalize certain groups. Research in this area could build on existing health disparities literature, but must adapt its focus to the unique contexts of oncological physiotherapy, where vulnerability, stigma, and structural barriers often coalesce.

Finally, and perhaps most fundamentally, the findings of this thesis point to the relevance of further reflection on how ethical issues are experienced and articulated in clinical practice, when explored from the perspectives of healthcare professionals and patients. Given that this research adopts a descriptive ethics approach based on empirical engagement with clinicians and service users, the studies highlight that participants tend to make sense of ethical issues primarily through everyday interactions, relationships, and situational challenges encountered in practice. These findings should be understood as context-dependent and shaped by the methodological choice to investigate practitioners' and patients' perspectives, rather than as claims about the nature or foundations of ethics as a discipline.

From this descriptive standpoint, ethical concerns are reported by participants as emerging within concrete clinical encounters—through communication, negotiation, and relational dynamics—rather than through explicit reference to professional codes or ethical literature.

Such research could inform ethical scholarship and education by clarifying the relationship between formal ethical norms and their interpretation in clinical contexts, while preserving the necessary distinction between descriptive inquiry and normative ethical analysis. In sum, this thesis offers a descriptive contribution to the study of ethically relevant dimensions of physiotherapy in oncological physiotherapy as perceived through the personal and subjective views of the physiotherapists and patients interviewed. Consequently, this thesis does not claim to present conclusions about what is ethically right or wrong in the context of physiotherapy for oncology patients. Rather, it provides a snapshot that, although subjective and partial, can serve as a starting point for future normative ethical investigations aimed at analyzing these findings rationally and assessing whether they align with ethically justifiable positions.

Implications for Clinical Practice

The findings of this doctoral research present a compelling case for rethinking how ethics is understood and operationalised in oncological physiotherapy practice. Far from being peripheral, ethical reasoning emerged as a core component of physiotherapy care, shaping interactions, decisions, and therapeutic outcomes across all phases of the cancer continuum. The results indicate that clinical practice in this field must be enriched—not only with technical and communicative skills—but with ethically reflective capacities that allow professionals to navigate complex, often ambiguous situations with clarity, empathy, and integrity.

One of the most immediate implications concerns the visibility of ethical reasoning in everyday physiotherapy. Across Studies 3, 4, and 5, ethical issues were shown to emerge not as dramatic, singular dilemmas but as embedded tensions—around truth-telling, goal setting, patient autonomy, family influence, or the continuation of treatment—intertwined with clinical routines. Yet many clinicians did not explicitly name these situations as "ethical" or felt unprepared to engage with them in a structured way. This suggests the need for a cultural shift in clinical environments: one that legitimises ethics as an integral part of care, encourages open discussion of moral complexity, and equips physiotherapists with frameworks and language to identify and work through ethically significant moments. Creating this shift requires not only formal ethics support but a broader ethos of ethical curiosity and shared reflection within teams.

A second implication relates to clinical decision-making under constraint. Many of the ethical tensions described in Studies 3 and 4 were not generated by uncertainty about what is right, but by the inability to act according to professional or relational values due to systemic barriers—limited time, rigid protocols, lack of interdisciplinary support, or fear of medico-legal consequences. Such moral distress, while often underreported, can lead to burnout, disengagement, or ethically compromised care. Clinicians need spaces—both informal and institutional—where they can explore these tensions without fear of judgement, and where ethical discomfort is seen not as a failure, but as a signal of moral sensitivity. Integrating regular ethical debriefings, case-based discussions, or peer reflection groups into clinical routines could provide much-needed support, especially in high-intensity oncology settings.

A third practical implication is the importance of relational competence as an ethical skillset. Study 5, in particular, foregrounded how patients interpreted ethical quality not in abstract terms, but in the way physiotherapists communicated, listened, adapted, and acknowledged their needs. Respect, presence, and emotional attunement were all described as markers of ethical care, often more salient than the specific technical intervention delivered. Clinicians, therefore, must recognise that ethical practice is inseparable from relational quality—and that ethical harm can arise not only from what is done, but from how it is done. This calls for renewed attention to communication training, narrative competence, and self-awareness within clinical education and supervision.

Moreover, including patients as ethical partners, not just care recipients, must become a clinical priority. Study 5 revealed that patients were highly capable of recognising ethical dilemmas—such as unrealistic expectations, emotional withdrawal by clinicians, or lack of transparency—and often had clear ideas about what they would have wished instead. Yet, they rarely felt invited to voice these concerns during care. This highlights the need to move beyond patient-centred rhetoric toward genuinely participatory practices, where patients' values, concerns, and ethical preferences are actively solicited and integrated into decision-making. Clinicians may require tools and training to do this effectively, especially in emotionally charged contexts such as palliative care, but the ethical dividends—in terms of trust, satisfaction, and alignment—are substantial.

Another significant implication concerns interprofessional collaboration. Ethical challenges in physiotherapy are rarely contained within one discipline. Physiotherapists often described ethical tensions related to broader team decisions (e.g., about treatment continuation, discharge planning, or prognostic disclosure), yet felt peripheral to those discussions. Effective and ethically sound cancer care depends on shared decision-making across disciplines, where physiotherapists' perspectives are recognised and valued. This requires more than just invitation to the table—it necessitates assertiveness from physiotherapists, willingness to engage in ethical discourse, and institutional cultures that support egalitarian team dynamics. Ethics should be a shared concern, not a siloed responsibility.

The findings of this thesis point to the relevance of reflecting on how existing normative instruments, such as professional codes of ethics and deontological codes regulating physiotherapy practice, are interpreted and enacted within specific clinical contexts, including oncological physiotherapy. These codes provide general ethical principles and standards that orient professional conduct; however, as normative documents, they are not designed to capture how ethical issues are perceived, experienced, and negotiated in everyday clinical practice. From a descriptive ethics perspective, the studies suggest that physiotherapists often encounter ethically complex situations that require interpretative work to relate general ethical principles to concrete, context-dependent cases. The contribution of this thesis does not consist in proposing new ethical codes or replacing existing ones, but in offering insights into ethically relevant situations that may serve as material for future normative ethical analysis and critical reflection on professional standards.

Any normative evaluation of professional conduct, the adequacy of existing codes, or the formulation of ethical guidance remains the responsibility of ethics as an academic discipline and of the professional bodies entitled to elaborate and revise deontological standards.

Finally, the findings indicate that physiotherapists and patients tend to describe ethical competence in clinical practice not primarily as the mechanical application of predefined rules, but as the ability to recognise ethically relevant situations and to reflect on them in context. Ethical challenges in oncological physiotherapy are often experienced as ongoing situations that require interpretation, deliberation, and adjustment over time, rather than as discrete problems with definitive solutions. From a descriptive ethics perspective, participants emphasised the importance of reflective skills, attentiveness to relationships, and critical self-examination in dealing with ethically complex situations.

In conclusion, this thesis provides a snapshot of the clinical reality experienced by physiotherapists and patients in the oncology setting and allows insight into their personal views on what they perceive as ethically relevant. As these are personal opinions and perspectives, further normative ethical investigations are warranted to assess their ethical foundation.

Studies’ Limitations

While this doctoral research offers a multi-faceted and original contribution to the understanding of ethical dimensions in oncological physiotherapy, as perceived and articulated by the populations interviewed and as reflected in the existing literature, it is important to acknowledge several limitations that may affect the interpretation, transferability, and generalisability of its findings. Each of the five studies that constitute this project was designed to address specific and complementary research questions; however, they also share methodological and contextual constraints that warrant reflection.

First, the descriptive ethics orientation of most of the studies (Studies 1, 3, and 5 in particular), which employed qualitative research methods, limits the extent to which the findings can be transferred to contexts other than those examined in this research.

The Italian setting, while offering a valuable lens on the professional and cultural specificities of oncological physiotherapy, may have influenced participants’ ethical perceptions in ways that limit the transferability of the findings to other healthcare systems. In Italy, for example, ethical decision-making in healthcare is shaped by a strong family-centred culture, specific legal provisions regarding informed consent and end-of-life care, and a predominantly public, regionally organised healthcare system. These elements may affect how issues such as communication, delegation of decision-making, professional responsibility, and interprofessional roles are experienced and interpreted by both clinicians and patients.

Consequently, the ethical dynamics described in this thesis may differ from those observed in healthcare systems characterised by different legal frameworks, cultural norms, or organisational models—such as more individualistic approaches to autonomy, insurance-based systems, or healthcare contexts outside Southern Europe. While this research does not aim to offer a comparative analysis, these contextual differences should be considered when interpreting the findings beyond the Italian setting.

On the other hand, it is precisely the nature of descriptive ethics to provide personal ethical snapshots (related to the individual interviewee) and contextualized ones (related to the specific cultural, social, and legal context in which that individual is situated). Consequently, it would be interesting for future studies to investigate whether there are differences between the opinions of Italian physiotherapists and patients regarding what they consider ethically relevant in oncology and those of the same individuals in other countries, and, if such differences exist, to what extent they may be related to the political and social context in which they are embedded.

In Study 1, while the focus on educational pathways provided useful information on how physiotherapists are prepared for oncology care, it did not explicitly explore ethics training in depth. Participants were not systematically asked about their exposure to formal or informal ethics education, and their narratives about ethical reasoning emerged only tangentially. This limits the study’s ability to draw specific conclusions about the adequacy of current ethical training within physiotherapy education programmes.

Study 2, being a scoping review, was subject to limitations inherent to its methodology. Although a rigorous and comprehensive search strategy was adopted, including grey literature and multiple databases, some relevant studies may have been missed due to language restrictions or indexing limitations. Furthermore, while the review classified ethical issues across a broad spectrum, it was unable to assess the depth or quality of the ethical reasoning presented in the literature. Most included studies were exploratory in nature, and few offered robust theoretical or normative analysis. As a result, the ethical issues identified in the scoping review may reflect what is discussed in the literature, rather than the full spectrum of what is experienced in clinical practice.

Studies 3 and 4 explored clinicians’ accounts of ethically relevant situations and decision-making processes within oncological physiotherapy practice. In line with the aims of descriptive ethics, these studies relied on participants' self-reported experiences and interpretations, with the explicit intention of capturing how ethical issues are perceived, articulated, and made sense of in everyday clinical contexts. As such, the findings reflect the ways in which clinicians themselves describe and interpret ethical challenges, rather than providing an external evaluation of their actions or decisions.

Study 5, which focused on patients' perspectives, similarly captured subjective interpretations of ethically relevant aspects of physiotherapy care. Differences between patients' and clinicians' perspectives were not treated as methodological limitations, but as central to the descriptive ethics approach adopted in this thesis, which aims precisely to illuminate the plurality and situatedness of ethical perceptions in clinical practice.

A cross-cutting limitation across the studies relates to the absence of longitudinal data. The ethical dimensions of oncological physiotherapy may evolve over time, particularly in long-term therapeutic relationships, palliative care, or survivorship trajectories. This research captured ethically relevant experiences at specific moments, but did not examine how such experiences develop, change, or are reinterpreted across the continuum of care. Longitudinal or repeated-interview designs could offer further insight into the temporal dynamics of ethical issues in physiotherapy contexts.

It is also important to note that this research did not systematically include institutional or organisational perspectives. While participants frequently referred to systemic factors such as time constraints, organisational routines, or interprofessional dynamics, these aspects were explored only through individual accounts. Future research could extend the descriptive ethical analysis by including perspectives from managers, educators, or policymakers; in order to better understand how ethical issues are shaped at organisational and structural levels.

Conclusions

This doctoral research set out to explore the ethical dimensions of physiotherapy practice in oncological physiotherapy through a descriptive ethics study employing multiple methods. Across five interrelated studies, the project mapped the existing literature on ethics within the profession, investigated ethically relevant situations encountered by physiotherapists in everyday clinical practice, explored how ethical decision-making is described by clinicians, and incorporated patients' perspectives to capture ethically significant care experiences as perceived and articulated by those directly involved.

From a descriptive standpoint, the findings indicate that both physiotherapists and patients tend to experience ethical challenges in oncological physiotherapy as closely intertwined with the relational, embodied, and emotionally demanding nature of physiotherapy practice. At the same time, participants described ethically relevant situations as highly context-dependent and shaped by institutional constraints, interpersonal relationships, and cultural norms.

Across the studies, participants consistently reported gaps in ethical preparation, difficulties in relating general ethical principles to concrete clinical situations, and systemic barriers that complicate value-sensitive care within oncological physiotherapy settings. In this sense, the thesis contributes by offering a practice-informed descriptive account of how ethical issues are perceived, interpreted, and negotiated in physiotherapy practice in oncology. By explicitly including both professional and patient perspectives, the research highlights areas of ethical tension that may warrant further attention by normative ethics, ethical education, and professional reflection.

Importantly, this work does not propose new ethical norms, nor does it seek to replace existing professional codes of ethics or deontological standards regulating physiotherapy practice. Rather, the empirical findings presented here may provide material for future normative ethical analysis and for critical reflection on whether and how existing codes—both in Italy and internationally—address the ethically relevant situations that physiotherapists report encountering in oncological physiotherapy.

While this thesis raises further questions for ethical research and clinical development, its primary contribution lies in documenting and clarifying the descriptive ethical landscape of a specific area of physiotherapy, oncology, within the Italian context. By making visible how ethical issues are perceived and experienced in clinical practice, the study offers a grounded basis upon which future normative, educational, and organisational work in ethics may build.

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List of Figures, Tables and Supplementary Materials

Supplementary Materials:

Acknowledgements (English)

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Manuscripts

Study 1

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RESEARCH ARTICLE

WILEY

Physiotherapists' training in oncology rehabilitation from entry-level to advanced education: A qualitative study

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Abstract

Background and Purpose: Physiotherapy is gaining a central role in oncology. However, the training and competencies needed by physiotherapists in oncology rehabilitation are still unclear. This study aims to articulate the training trajectory of physiotherapists in oncology rehabilitation from entry-level education to advanced education degrees.

Methods: Qualitative focus group study following a 'Reflexive Thematic Analysis' for data analysis. Participants were Italian physiotherapists with expertise in Oncology Rehabilitation (either clinically or academically) and Physiotherapy Bachelor of Science (BSc) course leaders, selected through purposive sampling.

Results: Two focus groups were conducted with 14 participants. Six themes were developed: 1. 'Entry-Level Education in Oncology Rehabilitation: Let's Have a Taste', as the BSc introduces oncology rehabilitation. 2. 'Basic Knowledge: Building up the Library' as students acquire basic knowledge on oncology rehabilitation during their BSc; 3. 'Learning by Experience: The Relevance of the Placement' to answer the question "Is this the right road for me?"; 4. 'Clinical Reasoning and Competencies in Oncology Rehabilitation Embedded in Uncertainty' because oncology physiotherapists need to deal with the uncertainty of their patients' status; 5. 'Advanced Education Degree Skills: from Appetiser to the Main Course', as advanced education degree courses allow for becoming an expert in the field; 6. 'A Call to Action for Physiotherapists: Prevention—Diagnosis—Survivorship & End of Life', to realise their critical role in all the phases of the oncology path.

Conclusions: The BSc in Physiotherapy provides a foundation for future physiotherapists to understand oncology rehabilitation, but advanced education is necessary for expertise. The findings of this study have important implications for creating a shared physiotherapy curriculum in oncology rehabilitation.

Gianluca Bertoni and Valentina Conti these two authors contributed equally.

Implication for Physiotherapy Practice: This study has significant implications for improving physiotherapy curricula in oncology rehabilitation, positively impacting the skills and competencies of practitioners in this paramount field.

KEYWORDS
curriculum, neoplasms, physical therapy, teaching

1 | INTRODUCTION

Cancer is a leading cause of death and an obstacle to increasing life expectancy (Sung et al., 2021). Globally, new cancer cases were estimated at 19.3 million in 2020, and survivors of cancer were roughly 25 million in 2008, with a trajectory to 75 million by 2030 (Hofmarcher et al., 2020). Among those who survive cancer, about 40% experience long-term physical, cognitive, and psychological side effects due to cancer sequelae and treatments (e.g., pain, fatigue, anxiety and depression), with a negative impact on health-related quality of life (HRQoL) and social participation (Magasi et al., 2022).

Physiotherapy is gaining a prominent position in managing people with cancer and survivors of cancer due to its positive effects on individuals' prognosis and symptoms (Rogers et al., 2023; Tan et al., 2022). In the past, physiotherapy assumed secondary importance in the care of people with cancer because the rapidly worsening course of this disease left little opportunity for rehabilitation (Smith et al., 2020). Currently, thanks to the improvements in cancer care, the management of oncological diseases can not only be oriented towards *quoad vitam* prognosis but also towards achieving the best possible HRQoL, compatible with the consequences of the disease (Schieroni M.P, 2017). Therefore, early rehabilitation interventions are necessary, and we should argue about what training and skills physiotherapists require in oncology (Stuiver et al., 2019). Before delving into the description of oncology rehabilitation in Physiotherapy higher education, it is essential to establish the terminology used in this paper, considering the variations in educational systems worldwide. In this context, we will adopt the term 'entry-level education' to denote the minimum level of educational attainment typically required for entering a specific profession or field or being included in the registry of the regulatory body, which, in the case of physiotherapy generally corresponds to a Bachelor's degree or a Doctor of Physiotherapy. Conversely, we will use the term 'advanced education degrees' to refer to educational programmes or courses offering a higher level of difficulty, specialisation, or depth than entry-level education, such as Master's or doctoral degrees.

Entry-level courses in Physiotherapy should provide basic knowledge in detecting and managing the most frequent cancer-related symptoms. Furthermore, the US Institute of Medicine identified the need for advanced oncology education and oncology training for healthcare professionals (Levit et al., 2013). In response to this demand, various healthcare professional associations, such as the American Physical Therapy Association (APTA), have developed resources to address the advanced speciality practice in cancer rehabilitation, such as the 'Description of Specialty Practice: Oncologic Physical Therapy' (Specialty Council on Oncologic Physical Therapy, 2016). This document is based on comprehensive research, including survey data and expert input. In Canada as well, the Canadian Council of Physiotherapy University Programmes has produced guidelines for oncological curriculum (Canadian Council of Physiotherapy University Programs, 2019). However, in Europe, countries like Italy lack such a document and specialisation course in cancer rehabilitation. Considering the different healthcare and education systems worldwide, it is possible to argue that it is not possible to generalise the finding of the abovementioned American document in other contexts (e.g., Europe). Moreover, Italian entry-level education courses in Physiotherapy have yet to draft a standard curriculum in oncology rehabilitation. Nevertheless, in Italy, oncology diseases represent a high burden, with over 1000 new cancer cases diagnosed daily (Associazione Italiana di Oncologia Medica, 2021). To fill these gaps, our qualitative focus group study aims to articulate the training trajectory of physiotherapists in oncology rehabilitation from entry-level to advanced education degrees by gathering the opinions of clinical and academic experts and course leaders. By doing so, this study might be informative for the creation of a future shared curriculum in oncology rehabilitation for entry-level education and documents and courses focusing on the acquisition of specific knowledge, tasks, and roles relevant to an advanced speciality practice in cancer rehabilitation in countries whose healthcare and education systems are similar to the Italian one.

2 | METHODS

2.1 | Study design

The authors conducted a qualitative focus group study. Qualitative research is the most effective method for gathering experts' opinions (Moser & Korstjens, 2017). A Focus group is the ideal methodological tool to foster the development of peer support: the group can help explore and clarify the views of the individual more quickly than in an individual interview (Kitzinger, 2007). The study was performed in respect of the Declaration of Helsinki and reported following the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007). Ethical approval was obtained from the Ethics Committee for University Research, University of University of Genova (Approval date: 19/05/2022; CERA 2022.32), and informed consent was obtained.

2.2 | Participants

Study participants were recruited through purposive sampling (Campbell et al., 2020). Specifically, the participants in this study were carefully selected to include a range of perspectives on oncology rehabilitation. We had Italian physiotherapists with clinical and academic expertise in the field and course leaders (i.e., those responsible for the overall management and administration of a specific course or programme) from Bachelor of Science (BSc) in Physiotherapy programmes. To be considered experts and participate in the focus groups, the participants must have at least 5 years of continuous experience in oncological rehabilitation and possess advanced education degrees and training. All participants held advanced degrees ranging from a Master's to a PhD. We wanted to ensure that the voices of those working directly with patients with oncological diseases and those shaping the education and training offered to physiotherapists were represented. Participants were contacted via email and sourced through universities, oncology facilities, personal networks, and snowball sampling, with eligibility determined by analysing their professional backgrounds. Then, participants were selected primarily through the analysis of their curricula. VC conducted the curriculum analysis. VC is a physiotherapist and identifies herself as a woman. VC has more than 5 years of clinical experience in oncological rehabilitation, and she is a temporary lecturer in oncological and palliative rehabilitation at the BSc in physiotherapy at the University of Milano Bicocca (Milan, Italy). Once VC identified the eligible participants, she recruited them by email. The email read the purpose of the study, how the research would be conducted (e.g., through focus groups), and the confidentiality and anonymity of the data. Informed consent was sent as an attachment. Each focus group consisted of 6–8 participants, equally divided by gender and professional role: clinicians, academics, and course leaders. Each focus group lasted between 1 and 2 h.

2.3 | Data collection

An open-question-based focus group guide (Table 1) was constructed, based on existing literature on cancer rehabilitation (Mayer & Engle, 2022; Schieroni M.P, 2017), by physiotherapists experienced in oncology rehabilitation (GB and VC) and a physiotherapist and a psychologist experienced in education and qualitative research (SB and IC). GB is a physiotherapist and a PhD student at the University of Genova (Genova, Italy). GB has more than 10 years of clinical experience in oncological rehabilitation, and he is a temporary lecturer in oncological and palliative rehabilitation at the BSc in Physiotherapy at the University of Brescia (Brescia, Italy). SB is a physiotherapist, PhD in Neurosciences and PhD in Medical Science, Research Fellow at the University of Genova (Genova, Italy) and temporary lecturer in 'Teaching Methodology for Healthcare Professionals' at the University of Verona (Verona, Italy). IC is a psychologist with a PhD in social psychology and a post-doc research fellow at the University of Genova (Genova, Italy). IC identifies as a woman; SB and GB identify as men. SB and IC are trained in qualitative methodologies with proficiency in conducting qualitative

TABLE 1 Focus group guide.

	Questions
1.	Could you describe in three words/adjectives the role of physiotherapy in oncology?
2.	What are the strengths and weaknesses of including an oncology rehabilitation course in BSc in 'physiotherapy'?
3.	In your experience, what knowledge do physiotherapists obtain in oncology rehabilitation after finishing the BSc programme? What do they not receive? What, instead, should be the basic knowledge needed to perform this role?
4.	In your experience, what competencies do physiotherapists obtain in oncology rehabilitation after finishing the BSc degree programme? What do they not receive? What basic skills should be needed to perform this role?
5.	If a student wanted to specialise in oncology rehabilitation to become a clinically skilled professional, what knowledge do you think they should have in oncology rehabilitation? Which ones do they not obtain? What, instead, should be the advanced knowledge needed to fulfil this role?
6.	In your experience, what competencies do physiotherapists obtain in oncology rehabilitation in an advanced education degrees? What do they not receive? What, instead, should be the advanced competencies needed to perform this role?
7.	In light of your considerations, what are the main differences in the competencies required in entry-level education versus those required in advanced education degrees?
8.	What suggestion(s) would you give to a student and/or professional approaching the world of oncology rehabilitation?
9.	Does anyone want to add other aspects that have not been mentioned?

studies. They provided the other authors with all the necessary training to perform this study.

We used a semi-structured protocol to conduct the focus groups. For each thematic area to be explored, we formulated stimulus questions to encourage dialog and discussion among participants, ultimately aiming to answer our research question. The guide was also reviewed by two patients who underwent oncology rehabilitation to grant patients' perspective in our research (Battista et al., 2022; Rolfe et al., 2018). Finally, a pilot interview was conducted with a lecturer in oncology rehabilitation to test the guide's relevance and understandability. The individual involved in the pilot interview was a male physiotherapist who has been working in oncological and palliative rehabilitation for 15 years. Additionally, he has taught 'Rehabilitation in Oncological and Palliative Care' for the past five academic years in a BSc in Physiotherapy at the University of Brescia. The focus groups were conducted online with only the moderators and participants. The software used for the focus groups was Microsoft Teams. Three moderators (SB, GB and VC) were present during the focus groups. No close relationships were established before the study between the focus group moderators and the participants. No follow-up focus groups were performed. The focus groups were recorded and transcribed verbatim. The transcription was obtained through the software's automatic transcription feature and checked for precision and accuracy by GB and VC by comparing the transcription to the audio recording. The recordings were preserved in a secure database and deleted after data transcription. While conducting the interview, GB anonymised the participants as 'Participant 1′, 'Participant 2′, etc., according to the chronological order of the interviews. This label is the only information shared with the rest of the group. Analysis of the collected data was carried out after focus group transcription.

2.4 | Data analysis

We collected information related to participants' gender, age, geographic origin, and professional role. Data analysis was performed according to the principles of Braun's and Clark's 'Reflexive Thematic Analysis' (RTA) (Braun & Clarke, 2021b). This choice was made because the research aims to identify patterns of meaning - and consequently themes - relating to the role of physiotherapists in oncology, focusing on knowledge and competencies expected from entry-level education to advanced education degrees (Ayre & McCaffery, 2022). Reflexive Thematic Analysis' is an interpretive approach to qualitative data analysis "that facilitates the identification and analysis of patterns or themes in a given data set" (Braun & Clarke, 2021a, 2021b). Reflexive Thematic Analysis' is situated in a 'Big Q' qualitative paradigm characterised by adhering to a non-(post)positivist paradigm (Braun & Clarke, 2023). Thus, some practices do not apply to RTA (e.g., consensus coding, inter-coder reliability, data saturation, member checking etc.) as they are infused "with assumptions about the nature of reality and meaningful knowledge" that follow a 'small q' (postpositivist) paradigm (Braun, V., & Clarke, 2021; Braun & Clarke, 2019). Besides, RTA is characterised by researchers' active and creative role in interpreting codes and themes, becoming a resource to tap into rather than a bias (Braun, V., & Clarke, 2021). In our study, RTA was primarily conducted with an inductive approach: codes for focus group analysis were produced based on the content of the data (Byrne, 2022). From the perspective of epistemological conception, our study has adopted a constructionist approach as we appreciated meaning and meaningfulness as the main criteria in the coding process (Byrne, 2022). In the focus group analysis, the reflections on knowledge and competencies needed by the oncology rehabilitation physiotherapist were prioritised to answer our research question. An experiential orientation was used in the analysis of this study. This lens considered participants' thoughts, experiences, and feelings as a reflection of their personal states (Byrne, 2022). The data coding was mainly semantic as we do not think we always went beyond the explicit or surface meanings of the data (Braun & Clarke, 2021b). Thus, the six steps of the RTA were followed for the focus group analysis (see Table 2) (Braun & Clarke, 2021b). No software was used to assist the coding process.

3 | RESULTS

Two focus groups were conducted in July and September 2022 with 14 participants (Age: 43 ± 10; 43% Men $N = 6$; 57% Women $N = 8$, Table 3). Of the participants, three were clinicians, seven were clinicians and lecturers, and four were course leaders. All the contacted participants accepted to participate in the study. From the analysis of the focus groups, six themes were developed (see Table 4 for the coding process and quotations). According to our participants, these themes represent the journey that a student needs to take from entry-level education to advanced education degrees to become a physiotherapist experienced in oncology rehabilitation: 1. 'Entry-Level Education in Oncology Rehabilitation: Let's Have a Taste'; 2. 'Basic Knowledge: Building up the Library'; 3. 'Learning by Experience: The Relevance of the Placement'; 4. 'Clinical Reasoning and Competencies in Oncology Rehabilitation Embedded in Uncertainty'; 5. 'Advanced Education Degree Skills: from Appetiser to the Main Course'; 6. 'A Call to Action for Physiotherapists: Prevention—Diagnosis—Survivorship & End of Life'.

4 | THEME 1: 'ENTRY-LEVEL EDUCATION IN ONCOLOGY REHABILITATION: LET'S HAVE A TASTE'

All participants agreed on the importance of including the 'Oncology Rehabilitation' course in the BSc of 'Physiotherapy' to allow the students to "know in order to choose" whether to master this subject in the future. Oncology rehabilitation is crucial in the BSc as our participants see it as "a road not for everyone". Dealing with people whose disease can have a fatal destiny can be burdensome.

TABLE 2 Six steps of the Reflexive Thematic Analysis' (RTA).

Phases	Process	Authors' involvement	Authors' actions
1) Data familiarisation	All authors read and reread several times the transcriptions of the focus groups. This process is fundamental to getting in contact with the data and taking notes of any insights.	All authors engaged in this phase, and they met to reflect upon their first insights	Document theoretical and reflective thoughts: VC documented field notes ("Memos" and diary) during and after each focus group to promote reflexivity. Keep records of all data field notes, transcripts, and reflexive diary Prolong engagement with data and triangulate different data collection modes to increase the probability that the research findings and interpretations will be found credible: VC e GB read and reread the data (transcripts of the focus groups, memos and reflexive diary)
2) Coding	In this phase, two researchers systematically coded the data through an open, evolving and organic process.	VC and GB systematically coded the data. They adopted semantic data coding.	Peer debriefing: Memos were shared during research meetings for reflexive thoughts. Audit trail of code generation: VC and GB coded data through the entire data set to identify interesting aspects in the data items that may form the basis of themes across the data set. Documentation of all team meetings and peer debriefings to help researchers examine how their thoughts and ideas evolve as they engage more deeply with the data
3) Generating initial themes	The researchers generated initial themes from the codes, clustering similar or related codes.	VC and GB generated initial themes separately, clustering similar codes together.	Diagraming to make sense of theme connections: VC and GB generated initial themes through deductive thematic analysis.
4) Reviewing and refining themes	The researcher reviewed the initial themes, reworking or discarding some until finding a final set of themes fitting the data.	All authors reviewed the coding and initial themes separately and then jointly and generated six themes that fit the data the most. VC and GB reviewed the agreed themes against the codes and the entire dataset.	Themes vetted by team members: The research team frequently met to refine the themes and clearly show how each theme was derived from the data.
5) Defining and naming themes	The 'story' of each theme is developed by finalising theme names and their definition.	All authors finalised the final themes and definitions to set the basis of the written report.	Peer debriefing and team consensus on themes: The research team met until the final themes were reached. Documentation of theme naming.
6) Producing the report	The authors produced the final report and refined them if necessary.	VC and GB selected the illustrative quotations from the interviews, and all authors reviewed and agreed. SB and VC led the writing of the paper, and all authors participated in this phase.	Producing the report using direct quotes from participants. Report on reasons for theoretical, methodological, and analytical choices throughout the entire study.

TABLE 3 Descriptive statistics.

Participant	Age	Gender	Educational level, professional role	Region
1st focus group (Jul 2022)				
P1	54	Woman	BSc, clinical expert	Liguria
P2	34	Man	MSc, clinical expert	Lombardy
P3	38	Man	MSc, clinical expert	Lombardy
P4	29	Woman	MSc, clinical expert and lecturer	Veneto
P5	40	Woman	MSc, clinical expert and lecturer	Lombardy
P6	30	Woman	MSc, clinical expert, lecturer and researcher	Emilia-Romagna
P7	60	Woman	PhD, course leader	Lombardy
P8	51	Woman	MSc, course leader and researcher	Emilia-Romagna
2nd focus group (Sep 2022)				
P9	53	Man	BSc, clinical expert and lecturer	Liguria
P10	35	Man	BSc, clinical expert and lecturer	Trentino Alto Adige
P11	37	Woman	BSc, clinical expert and lecturer	Liguria
P12	53	Man	MSc, clinical expert and lecturer	Lombardy
P13	53	Woman	MSc, course leader	Liguria
P14	40	Man	MSc, course leader and researcher	Lombardy

Legend: P, participant; BSc, Bachelor of Science; MSc, Master of Science; PhD, Doctor of Philosophy.

Therefore, an individual propensity to it is necessary. However, they highlighted that entry-level education in oncology rehabilitation could only be a taste of how to become an oncology physiotherapist. They reported the presence of a university system based on a rigid didactic plan where it is impossible to go into detail on a topic due to organisational problems, as introducing new topics or more hours for one course involves sacrificing something else. However, how to build up this knowledge "library" is explained in Theme 2.

5 | THEME 2: 'BASIC KNOWLEDGE: BUILDING UP THE LIBRARY'

The library involves basic knowledge and understanding of the course. According to our participants, it is necessary to provide students with notions related to major oncological diseases of rehabilitation interest (e.g., breast, lung, and urogenital). Therefore, explaining the side effects and consequences of oncology therapies (e.g., chemotherapy, radiation therapy, and immuno-oncology) and surgery is essential. From the rehabilitation point of view, it is fundamental for students to know the concept, treatments and characteristics of oncologic fatigue and pain. Oncologic pain must be considered from the acute phase to the end of life (palliative therapies).

Moreover, students need to understand how to make a differential diagnosis once assessing the nature of pain in a patient. That is why it is vital to illustrate the main red flags of cancer pathology in entry-level education. Besides, it was highlighted that students must know how to manage people with bone metastasis characterised by bone fragility, increasing the risk of fractures. To do so, it is fundamental to provide students with knowledge of aids such as braces and corsets for patients. According to our participants, proper lymphedema management requires many practical skills that might be difficult to master during a BSc. Finally, they highlighted how students must have direct contact with people with cancer to practice this knowledge ("It's one thing to explain, and another to see."). To do so, a placement in oncology rehabilitation is fundamental, and this topic generated Theme 3.

6 | THEME 3: 'LEARNING BY EXPERIENCE: THE RELEVANCE OF THE PLACEMENT'

The progression from knowledge to competencies is fostered through clinical placement. Participants emphasised the importance of students assisting these patients' treatment. According to the participants, placement is essential to help students to confirm or not the idea they have about oncology rehabilitation. Through the placement, the student should gain the necessary experience to answer the question, "Is this the right road for me?". Moreover, participants outlined the importance of the placement for students to understand their ability to handle the emotional burden resulting from their relationship with people with oncological diseases. However, the management of these patients is characterised by an uncertain future that is difficult to predict. Therefore, learning to deal with uncertainty while reasoning upon patients' treatments is fundamental, as reported in Theme 4.

TABLE 4 Defined codes for the generated themes.

Theme 1: Entry-Level Education in Oncology Rehabilitation: let's have a taste	
Codes defined by the researchers	Example of quotes extracted from the focus groups
Knowing to choose	"Oncology rehabilitation is important to give students a chance to get curious, to find out there's a whole world out there and see if it's something they'd like to dig into in the future". (P12, man, 53, clinical expert and lecturer)
A road not for everyone	"Handling oncology patients is a personal thing". (P5, woman, 40, clinical expert and lecturer) "These patients are constantly facing an uncertain future, always with a figurative sword hanging over their heads". (P4, woman, 29, clinical expert and lecturer)
Necessity to receive a training in oncology rehabilitation	"Today we can't even fathom the idea of graduating a student without these [oncology rehabilitation] skills. Oncological diseases are everywhere". (P7, woman, 60, course leader)
The importance of the clinical lecturer	"When it comes to picking a lecturer for an oncology rehab module, it's key they've got recent clinical experience. They can't just be a book smart lecturer, the clinical side is just as important. The lecturer needs to bring that expertise to the students". (P4, woman, 29, clinical expert and lecturer)
The rigidity of the teaching plan	"In a BSc, if we add something, we got to cut something else. [...] I always say when someone comes up with a good idea in didactic council, it doesn't matter if it's oncology or not, the question is what are we willing to give up?" (P8, woman, 51, course leader and researcher) "The university gives the students the library, it's up to them to stock it up with the reads they crave!" (P7, women, 60, course leader)
Theme 2: Basic knowledge: Building up the library	
Codes defined by the researchers	Example of quotes extracted from the focus groups
Definitions and objectives of oncology rehabilitation	"We discuss two main areas in cancer rehab: Functional and palliative. We cover when and how the PT fits into pre- and post-surgery rehab, and what they do in the palliative stage of disease." (P6, woman, 30, clinical expert, lecturer and researcher)
The main oncological diseases	"We educate students on the types of cancer patients a physiotherapist may work with, like those who had breast, chest, head and neck, prostate, or uterine cancer surgeries." (P10, man, 35, clinical expert and lecturer)
Catheters & vascular accesses	"I tell students about managing "tubes" in the home setting, since they may not encounter them elsewhere. This is especially important for those who haven't had an ICU internship". (P2, man, 34, clinical expert)
Mobilisation and metastases	"I emphasise the importance of explaining joint end-stroke management with bone metastases and setting a treatment threshold for exercise because they have energy that needs to be spent". (P2, man, 34, clinical expert)
Knowing the side effects of oncology therapies	"I aim at educating students on the treatments and outcomes (expected and unexpected) that patients with cancers may experience". (P10, man, 35, clinical expert and lecturer)
Managing fatigue	"We highlight the impact of oncologic fatigue, which is cross-cutting and affects all cancers. There's a lot that physiotherapists can do, based on what's in the literature". (P6, woman, 30, clinical expert, lecturer and researcher)
The importance of differential diagnosis	"I would highlight the importance of knowing oncological pain". (P7, woman, 60, course leader) "It's crucial for students to know the warning signs, like unclear pain in a patient with a history of cancer. A back pain could be a metastasis". (P6, woman, 30, clinical expert, lecturer and researcher)
Proposal and management of aids	"The role of the physiotherapist in treating patients with bone metastases is crucial, including prescribing the necessary aids". (P9, man, 53, clinical expert and lecturer)

(Continues)

TABLE 4 (Continued)

Hints of lymphology	“Lymphology is an important aspect too. We cover the anatomy of the lymphatic system, how it operates in non-cancer patients, the surgical removal of lymph nodes that can obstruct the pathway, and the need for physiotherapy intervention to redirect lymph flow”. (P10, man, 35, clinical expert and lecturer) “Lymphology comes to my mind. No one should treat a woman with upper extremity lymphedema as soon as they finish their BSc”. (P4, woman, 29, clinical expert and lecturer)
Theme 3: Learning by experience: The relevance of internship	
Codes defined by the researchers	Example of quotes extracted from the focus groups
Experience as a test bench - the internship	“It's one thing to explain, and another to see”. (P11, woman, 37, clinical expert and lecturer) “Placement is key if you're curious. It's a chance for students to get hands-on experience and see what it's really like working with patients. You can't grasp the reality of treating patients with cancers in a classroom setting.” (P8, woman, 51, course leader and researcher)
Personal predisposition	“The most crucial part of the placement is not just learning techniques, but understanding if you can emotionally detach yourself and handle the weight of treating patients, especially younger ones who are seriously ill. It's a personal journey as well.” (P3, man, 38, clinical expert)
Psychological load of the experience	“Some students just aren't cut out for the emotional demands of working in an oncology ward and you can't tell that from a lecture alone.” (P5, woman, 40, clinical expert and lecturer) “[In oncology rehabilitation] it is necessary for the physiotherapists to know how to deal with their and patient's emotions […] when I'm with the students during their placement in palliative care, I allow them to talk with patients, build relationships, and open up to their emotions and experiences. But those who don't come to placement to palliative care, I don't know how they will experience their first patient with cancer if they ever happen to treat them.” (P12, man, 53, clinical expert and lecturer)
Relational test bench	“In oncology rehabilitation, physiotherapists need to be able to handle their own and their patients' emotions. During placement in palliative care, I encourage students to form relationships with patients and open up emotionally. But for those who don't experience palliative care placement, I don't know how they'll react when they come across their first oncology patient.” (P12, man, 53, clinical expert and lecturer)
Is this the right path for me?	“Having even a brief, but meaningful, experience in this field is crucial so students can make informed choices for themselves.” (P8, woman, 51, course leader and researcher)
Theme 4: Clinical reasoning and competencies in oncology rehabilitation embedded in uncertainty	
Codes defined by the researchers	Example of quotes extracted from the focus groups
Learning how to work in multifaceted team	“The oncology rehabilitation course must train future physiotherapists to get acquainted with oncologists, oncology surgeons and nurses, and others (e.g., caregivers) we might have a language barrier”. (P4, woman, 29, clinical expert and lecturer) “When it comes to rehab, the relationship with the patient's family is key. And don't forget about the caregiver's involvement - it's essential for their support”. (P9, man, 53, clinical expert and lecturer)
Knowing how to conduct an assessment	“Evaluating the patient is crucial for a student. It's the foundation of what we do and can save you in the long run”. (P6, woman, 30, clinical expert, lecturer and researcher)
Knowing how to set flexible goals	“I challenge my students to define patient assessment tools, set goals, and determine the best treatment plan”. (P6, woman, 30, clinical expert, lecturer and researcher)

TABLE 4 (Continued)

	"What is required of students is to recognise the dynamic of these patients and not to be adamant with their goals because physiotherapists have to be able to change [the rehabilitation programme] as soon as the patient's condition changes". (P7, woman, 60, course leader)
Having effective communication skills	"One important thing to note is communication skills. Patients tend to have more conversations with physiotherapists and ask a lot of questions". (P11, woman, 37, clinical expert and lecturer)
	"I think one of the main communication skills is using our hands properly, thinking about how much we communicate through our hands". (P12, man, 53, clinical expert and lecturer)
Theme 5: Advanced education degrees skills: From appetiser to main course	
Codes defined by the researchers	Example of quotes extracted from the focus groups
Need for advanced training	"In my opinion, offering a master's degree specifically dedicated to oncology rehabilitation would be an excellent alternative. That's what happens in other countries, and it would be amazing to have the same here". (P4, woman, 29, clinical expert and lecturer)
Advanced interdisciplinary skills	"I'd be interested in a master's programme that brings together other healthcare professionals who work with patients with cancer. That would be a great opportunity for networking and enriching experience". (P6, woman, 30, clinical expert, lecturer, and researcher)
Exercise medicine	"It's crucial that these patients receive tailored care, especially when it comes to exercise and physiotherapy. Physiotherapists need to know the proper dosage, intensity, frequency, and impact of their therapy. I think this should be covered in a higher education programme". (P8, woman, 51, course leader and researcher)
Healthcare management	"A master's programme could focus on breast units as a role model and teach physiotherapists how to apply the same model to other areas of oncology. This way, they will have a deeper understanding of how to provide effective care to these patients". (P10, man, 35, clinical expert and lecturer)
Theme 6: A call to action for physiotherapist: Prevention—diagnosis—survivorship & end of life	
Codes defined by the researchers	Example of quotes extracted from the focus groups
The role of the physiotherapists in the preventive phase of diseases	"Exercise has a preventive role in several oncologic diseases and there's strong evidence for it. As physiotherapists, we don't always get to be part of the primary prevention phase, but we should establish ourselves more in this area. Exercise is one of our tools, after all". (P8, woman, 51, course leader and researcher)
	"I wrote 'prevention' [during the wooclap wordcloud] because we are trying to implement pre-rehabilitation in the pre-surgical phase of the patient undergoing pancreatic or oesophageal surgery. We are trying to identify the most at-risk groups that need to perform this pre-rehabilitation". (P14, man, 40, course leader and researcher)
The role of the physiotherapists from diagnosis to post-surgery	"I think it is necessary to start talking about a cultural change related to the fact that the patient who has been diagnosed with cancer can come to us [to physiotherapists] earlier". (P7, woman, 60, course leader)
	"There is a group of patients that we must not forget. Those who are at the beginning of the oncology pathway and who are relatively well. This population doesn't know they need physiotherapists and don't come looking for us, the physician doesn't suggest us to them, and we, physiotherapists, have yet to understand what we could do for them". (P8, woman, 51, course leader and researcher)
	"Recent studies show us that exercise medicine can be performed during chemotherapy, which is pretty innovative". (P7, woman, 60, course leader)
	"Evidence shows that exercise helps patients to reduce the negative impact of oncology therapies as well as to increase patients' tolerance of their side effects". (P9, man, 53, clinical expert and lecturer)

(Continues)

TABLE 4 (Continued)

The role of the physiotherapists in survivorship	"Survivorship is a big chapter, and not just because of the high risk of cancer recurrence and late side effects of therapies, but also the psychosocial burden that patients face. Physiotherapists and healthcare professionals have a key role here. It's a fascinating but difficult role, but still fascinating." (P8, woman, 51, course leader and researcher)
The role of the physiotherapists in palliative care	"To students who are sceptical about the approach to terminally-ill patients, I try to get them to see the whole picture of the patient. I emphasise the topic related to the patient's quality of life because students often look little at this aspect". (P12, man, 53, clinical expert and lecturer)
	"When I talk to the students about their role as physiotherapists in palliative care, I tell them, 'just like a democracy or a state is judged by how it treats the underrepresented, the poorest or the incarcerated, the quality of a healthcare system is judged by how it treats people at the end of their life.'" (P10, man, 35, clinical expert and lecturer)

7 | THEME 4: 'CLINICAL REASONING AND COMPETENCIES IN ONCOLOGY REHABILITATION EMBEDDED IN UNCERTAINTY'

According to our participants, students must acquire different oncology rehabilitation competencies. Participants highlighted the importance of making students competent in assessment, goal setting and personalised treatment choices developing clinical reasoning competencies. Moreover, there is a need for empathy and effective communication skills, both verbal and not verbal. Participants emphasised the incredible power of words and 'touch' of physiotherapists in the therapeutic relationship with people with cancers. The oncology physiotherapist must acquire interpersonal skills to work in a multifaceted team in which patients' family members and caregivers are also part. According to the participants, developing all these skills must be embedded in the uncertainty of the rehabilitation pathway of the person with cancer. This is possible by training students to use flexible clinical reasoning, considering that patients' statuses can change quickly and unexpectedly. In listing the core competencies, participants reiterated the impossibility of their complete acquisition in entry-level education, outlining the importance of an advanced education degree pathway to deepening the knowledge and skills only "tasted" in BSc as described in Theme 5.

8 | THEME 5: 'ADVANCED EDUCATION DEGREE SKILLS: FROM APPETISER TO THE MAIN COURSE'

All participants agreed on the need for advanced education degrees to qualify expert physiotherapists in oncology rehabilitation. A structured advanced education degree would make it possible to go "from the appetiser served by the entry-level education to the main course" (P8). According to participants, advanced education degrees should allow for learning specialised skills related to managing cancers and bone metastases, advanced manual (e.g., lymphology), and exercise skills. They reported that physiotherapists should be able to handle the intensity, dosage, and frequency of exercise. Our participants proposed a master's degree with other healthcare professionals to foster knowledge exchange among professionals working in the oncology field. In addition, they hypothesised that a master's degree should provide students with soft skills such as communication and organisational management skills. The participants highlighted that physiotherapists should learn about the different contexts of the health service organisation to design improvement projects for managing people with cancer. Therefore, advanced education degrees should offer a wide range of skills that allow oncology physiotherapists to understand the importance of their role. A role that is becoming paramount thanks to scientific studies but needs concrete action by physiotherapists to become relevant. This reflection led to the creation of Theme 6.

9 | THEME 6: 'A CALL TO ACTION FOR PHYSIOTHERAPISTS: PREVENTION—DIAGNOSIS—SURVIVORSHIP & END OF LIFE'

Participants in focus groups discussed the journey to becoming an experienced oncology physiotherapist, emphasising the importance of spreading awareness about the role of physiotherapy in all stages of cancer care, from prevention to end of life. Participants often addressed the topic of 'prevention'. Some participants emphasised the importance of the physiotherapist's role in primary prevention by promoting a healthy lifestyle based on exercise. Others highlighted the importance of physiotherapy assessment in secondary prevention to suspect possible oncological diseases to other professionals. Then, participants emphasised that rehabilitation care should be early, even from diagnosis.

Moreover, rehabilitation care is gaining a pivotal role in the oncology pathway during adjuvant pharmacological therapies. Therefore, the role of physiotherapists cannot be limited to the post-surgical management of oncological disease but becomes crucial throughout the care. The need for ongoing rehabilitation care continues throughout the survivorship phase of people with cancer. Participants emphasised the role of physiotherapists in providing patients with physical, informational, and emotional support. Finally, participants reflected upon the delicate part of the physiotherapist in palliative care. Some examples were strategies to sensitise students to recognise the rehabilitative significance of caring for patients at the end of life. The common thread in this sixth and final theme is the need for action to debunk taboos and myths related to people with oncological diseases. Participants deemed fundamental a clear call to change the cultural paradigm of oncology rehabilitation from 'if there is an oncological disease, I can't do anything to 'if there is an oncological disease, I can do a lot'.

10 | DISCUSSIONS

The present study explored the skills and competencies of physiotherapists in 'Oncology Rehabilitation', from entry-level education to advanced education degrees. The results showed that entry-level education should include oncological rehabilitation to help students discover their professional inclinations towards this field. Perceiving that something is helpful in the present moment will allow students to make informed decisions and pursue their goals within this field (Priniski et al., 2018). By fostering a sense of personal usefulness and identification with the topic, students can gain a deeper understanding of their professional identity within the realm of oncology rehabilitation (Priniski et al., 2018).

Our participants highlighted that the hours assigned to the oncology rehabilitation course are insufficient to cover all the necessary topics to become an expert, as reported elsewhere (Stuiver et al., 2019). Lecturers should structure the oncology rehabilitation courses to give students a taste of oncology rehabilitation, fostering their curiosity. The learning path in oncology rehabilitation can be seen - as in other fields - as a library that students fill with what they are interested in the most (Theme 2). The main topics that should be part of this library regard the significant oncological diseases of rehabilitation interest, such as breast cancer, lung cancer, urogenital cancers, and head and neck cancers. In addition, knowledge about oncology therapies' side effects, such as surgery, chemotherapy, radiation therapy, hormone therapy, and immuno-oncology, must be provided. Among the many side effects of oncology therapies described in the literature (Magasi et al., 2022), students must have some basic knowledge about fatigue, oncology pain (and related red flags), lymphedema and bone metastases management (Bausewein et al., 2008; Board & Harlow, 2013; Bunting, 1995; Larun et al., 2017; Mayer & Engle, 2022).

In addition, our participants reported a clear need for students to practice the acquired knowledge. As Dewey pointed out, 'learning by doing is essential for students (Dewey John, 1938). In the rehabilitation, the best expression of learning by doing is through placement (Theme 3). Students must attend placements to see first-hand the management of people with oncological diseases. However, upon analysing participants' feedback, we have discovered that placements in the specific field of oncological rehabilitation are often unfeasible due to the limited number of facilities offering such services. As a result, there are only a few available positions for students. One possible solution was to address or at least mitigate this issue reported by our participants. They said we should prioritise students genuinely interested in pursuing this path (as discussed in "A Road Not for Everyone" from theme 1). Another option reported in the literature could be to provide educational tools and tutorials based on simulation, allowing students to experience the complexity of oncological rehabilitation (Bizama et al., 2022; Paulus et al., 2022; Tuttle & Horan, 2019). Moreover, different online training strategies have been recognised as effective in enhancing education and competence in this field (Dennett et al., 2022). Examples include the 'Cancer Exercise Toolkit' and the 'iPOEG Toolkit' for paediatric specialisation (Wurz et al., 2021). These resources provide comprehensive online training modules and resources that can support physiotherapists in acquiring the necessary knowledge and skills in oncological rehabilitation. By leveraging these online tools, aspiring practitioners can enhance their expertise and contribute to improving patient care in oncology. However, our interviewees reported the placements as pivotal to answering the question, "Is this the right road for me?".

Then, the university must provide students with competencies to perform excellent clinical reasoning. Specific to oncology rehabilitation, physiotherapists need to know how to deal with uncertainty (Theme 4). People with oncological diseases are often characterised by a quick and unexpected clinical status change (Schieroni M. P, 2017). Hence, physiotherapists must be able to modify the rehabilitation programme quickly based on these changes. The importance of communication and interpersonal skills in oncology was also emphasised. Communication skills are paramount in oncology because physiotherapists may have to deal with complex topics such as death. Some students are more inclined to be effective communicators than others, but "communication has to do with key skills that must be learned" (Silverman et al., 2016).

Moreover, verbal and non-verbal communication has a nonspecific effect per se that is added to the specific one of the delivered interventions (Rossettini et al., 2018). Therefore, students should be equipped with the knowledge and ability to integrate effectively the physical communication conveyed through their hands ("the power of hands") with effective verbal communication ("the power of words") (Geri et al., 2019; Testa & Rossettini, 2016). However, they also need to possess the ability to effectively collaborate and communicate with other healthcare professionals and caregivers (D'Alimonte, McLaney, & di Prospero, 2019). The oncology rehabilitation curriculum should facilitate the development of a shared language among various healthcare practitioners to promote comprehensive patient care (Knoop et al., 2017). Furthermore, oncology rehabilitation is often a prolonged process that may involve home-based care, and physiotherapists must be able to train caregivers to provide adequate care (van Roij, Brom, Sommeijer, van de Poll-Franse, & Raijmakers, 2021).

All the skills needed to become physiotherapists experienced in oncology rehabilitation cannot be acquired in depth in entry-level education. Thus, the need for advanced education degrees was outlined by our participants. Therefore, we asked them to identify which skills should be included in an advanced education degree programme (Theme 5). Analysis of the results revealed the need to implement soft skills in multi-professional environments, manual skills, particularly in the management of lymphedema, and the physiology of exercise. Oncology therapies and related side effects benefit from a collaborative, interprofessional approach to people with oncological disease care (Knoop et al., 2017). Thus, our participants pictured a master's degree with healthcare professionals other than physiotherapists to foster knowledge exchange among those working in the oncology field. Collaboration with other healthcare professionals in a master's degree could also allow for implementing different soft skills (e.g., communication, relationship, organisational and managerial) (D'Alimonte et al., 2019). Several international healthcare professional organisations promoted interprofessional education as part of redesigned healthcare systems (van Diggele, Roberts, Burgess, & Mellis, 2020) and educational accreditation standards (Chartered Society of Physiotherapy, 2023; Commission on Accreditation in Physical Therapy Education, 2023; Grymonpre et al., 2021). This promotion stemmed from interprofessional education to improve interprofessional teamwork, patient care quality, and health-related outcomes (van Diggele et al., 2020). Altogether, the competencies and skills mentioned by our interviewees in this study for advanced education degree courses are in line with those reported in the American Board of Physical Therapy Specialties in oncology (American Physical Therapy Association (APTA), 2016).

Then, exercise assumes a vital role in managing, preventing and treating oncological diseases. Physical activity might prevent many types of cancer and improve longevity among survivors of cancer or those facing these diseases (Patel et al., 2019). Different guidelines have been implemented on this matter but only for survivors of cancer (K. L. Campbell et al., 2019). Exercise in people with cancer can be seen as a real medicine ("Exercise Medicine") that needs a clear and defined prescription (Hayes et al., 2019). Therefore, oncology physiotherapists must understand their crucial role from prevention to end of life (Theme 6). According to our participants, the courses in oncology rehabilitation might further foster physiotherapists' awareness of their pivotal role in promoting active lifestyle habits in society. Once the diagnosis is established, a cultural paradigm shift is necessary from "I have cancer, I must rest" to "I have cancer, I must exercise". Additionally, physiotherapists play a delicate and vital role in the end-of-life phase. They provide simultaneous palliative care that supports patients, their families, and their social networks in accepting prognosis and coping with incurability (SICP, 2013). The critical role of physiotherapists has been studied by Vira et al. They showed that physiotherapy helps alleviate the symptoms experienced by people with advanced cancer, improving their HRQoL (Vira et al., 2021).

The limitations of this study must be acknowledged. First, the focus groups only included physiotherapists, neglecting the perspectives of other healthcare professionals involved in oncology rehabilitation. The focus groups did not delve into the ethical considerations in this field, particularly about end-of-life and therapeutic persistence, which should be explored in future studies. An additional limitation of our study is its single-country focus, specifically on Italy, which may not account for potential variations in the organisation of physiotherapy education across different countries. Nevertheless, various European countries share a similar education and healthcare system, which might facilitate the transferability of our results. Finally, all participants included were white men/women carrying out their professional activities in northern Italy. This trend is particularly important to highlight since meanings attached to education might be influenced by gender, ethnicity, living area, and working background (Bailey & Graves, 2016; Battista et al., 2023; Seeleman et al., 2009).

The results of our study describe the physiotherapists' training in oncology rehabilitation as a journey. As travellers, the students begin their journey during entry-level education to discover whether oncology rehabilitation may interest them. After building up a library of essential knowledge and competencies through lectures and placements, the students' journey must continue with advanced education degrees and acquiring advanced skills. Finally, their journey ends with a call to action: physiotherapists need to be aware that they play a crucial role in caring for people with oncological diseases from prevention to end of life. Our results can be a practical aid tool for lecturers and course leaders in planning and defining the educational objectives of any-level oncology rehabilitation courses. Finally, our study might represent a first step in determining the core curriculum of physiotherapists in oncology rehabilitation. Future research should create a shared physiotherapist's core curriculum in oncology rehabilitation.

11 | IMPLICATION FOR PHYSIOTHERAPY PRACTICE

This study has significant implications for improving physiotherapy curricula in oncology rehabilitation, positively impacting the skills and competencies of practitioners in this paramount field.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest regarding the publication of this article.

DATA AVAILABILITY STATEMENT

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

ETHICS STATEMENT

The study was performed in respect of the Declaration of Helsinki and reported following the COREQ. Ethical approval was obtained from the Ethics Committee for University Research (CERA: Comitato Etico per la Ricerca di Ateneo), University of Genova (Approval date: 19/05/2022; CERA 2022.32).

CONSENT TO PARTICIPATE

Informed consent was obtained from all the individual participants included in the study.

CONSENT TO PUBLISH

The authors affirm that human research participants provided informed consent for publication.

STUDY REGISTRATION

Not applicable.

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Study 2

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Review

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Ethical and bioethical issues in physical therapy: A systematic scoping review

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Abstract

Importance: **Ethical and bioethical issues are central to the identity and practice of physical therapy. A comprehensive overview of how these issues are addressed in the literature is essential for advancing education, clinical practice, and professional reflection.**

Objective: **The objective was to systematically map ethical and bioethical issues in the physical therapy literature, describe the methodologies employed, and identify key gaps to inform education, practice, and policy.**

Data Sources: **Medline (via PubMed), Embase, Cochrane Central, CINAHL, PsycINFO, PEDro, grey literature sources, and academic library resources were searched from inception to October 2024. The review protocol was prospectively published on medRxiv.**

Study Selection: **Studies addressing ethical or bioethical issues in physical therapy were included, encompassing both normative and descriptive (empirical) approaches. After screening titles, abstracts, and full texts, 108 studies met the inclusion criteria.**

Data Extraction and Synthesis: **Data were extracted using a modified Joanna Briggs Institute standardized form. A narrative synthesis was conducted to map ethical themes and characterize methodological approaches across studies.**

Main Outcomes and Measures: **Identification and mapping of ethical and bioethical themes and characterization of research methodologies applied.**

Results: **A total of 15,464 records were identified; 3223 duplicates were removed. Of 12,241 titles and abstracts screened, 385 full texts were assessed, and 108 studies were included. Major themes included ethical reasoning ($n = 33$), ethical reasoning and education ($n = 19$), ethical theories ($n = 12$), care relationships ($n = 15$), justice and equity ($n = 8$), perception of ethical issues ($n = 13$), and codes of ethics ($n = 8$). Key challenges involved physical touch, informed consent, professional boundaries, and moral distress. Structural barriers, cultural contexts, and disparities in ethics education were recurring concerns. Ethical reasoning was often situational and intuitive, whereas formal codes were frequently perceived as disconnected from clinical practice.**

Conclusions and Relevance: **Ethical complexities in physical therapy arise from its embodied, relational, and context-sensitive nature. The literature reveals variability in how ethics is taught and applied across settings and highlights underexplored areas, including oncology, end-of-life care, digital health and artificial intelligence, and equity, diversity, and inclusion. Findings emphasize the need to strengthen ethics education, reinforce the application of existing codes of ethics, and provide organizational support for ethical deliberation. This synthesis provides a foundation for future research and can inform curricular development, clinical practice, and policy initiatives in physical therapy ethics.**

Keywords Ethical, Ethics, Literature, Physical therapy, Profession, Reasoning

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Introduction

In the medical and health care context, the responsibilities of professionals extend across several dimensions: moral (guided by one's personal moral principles), ethical (based on principles shared by the professional community), deontological (defined by professional codes and duties, where actions are evaluated by rule-following), and legal (in accordance with civil and criminal law).[1] This study aims to highlight the ethical dimension of clinical physical therapy practice, as explored by medical ethics and bioethics disciplines.

Medical ethics, through a logical and analytical approach, identifies the principles that guide the clinical practice of health care professionals.[2] The 4 biomedical principles—beneficence (the good clinician identifies clinically appropriate interventions to protect the patient's health and life), non-maleficence (the good clinician does not harm the patient's health or life), autonomy (the good clinician respects the patient's will to accept or refuse a proposed clinical intervention after evaluating its ethical proportionality), and justice and equity (the good clinician does not discriminate among patients and guarantees fair access to care)—were articulated by Beauchamp and Childress and have since become a foundational framework for clinical decision-making.[3,4] Bioethics, as a broader interdisciplinary field, encompasses not only these principles but also the ethical challenges that arise in clinical practice in light of biomedical and biotechnological progress, employing methods of rational argumentation to address them.[5]

In their professional practice, physical therapists may encounter various ethical problems.[6] These may be shared with other health care professionals or may be specific to physical therapy—particularly those that emerge in a care relationship where physical interaction is a central element.[7] Physical therapy is characterized by a rehabilitative process that develops over time, requiring a continuous relationship between the professional and the patient.[8,9] Within this relationship, physical therapists are called upon to build trust, responsibly manage informed consent, and balance the obligation to provide effective treatment with the need to respect patient preferences.[10,11] The element of physical contact, central to physical therapy practice, also raises ethical concerns regarding proxemics and touch.[12,13] Physical therapists must be able to modulate physical interaction, ensuring that contact is always appropriate, necessary, and accepted, considering individual and cultural sensitivities.[14]

Prior syntheses of ethics in physical therapy—most notably Swisher's retrospective analysis of the literature from 1970 to 2000—described how scholarship evolved across decades, characterized dominant ethical approaches, with a strong emphasis on principles-based philosophical work and a later rise of social scientific studies. It identified recurring themes and gaps, such as limited empirical evidence and unaddressed cultural dimensions.[15] This work provided an essential foundation for the profession. The present scoping review expanded on the literature examined by Swisher, incorporating a broader range of sources (peer-reviewed journals, grey literature, and academic library resources), and extends the historical period considered and the aims.

Hence, the aim of this scoping review was to systematically map ethical and bioethical issues addressed in the physical therapy literature, identify the research methodologies employed, and highlight existing knowledge gaps to inform education, practice, and policy.

Methods

This systematic scoping review followed the methodological guidance provided by the Joanna Briggs Institute (JBI) and is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).[16,17] The protocol for this systematic scoping review was published on medRxiv.[18] This review is not a direct update of prior retrospective analyses (eg, Swisher 1970-2000)[15]; rather, it applies a scoping-review methodology to broaden coverage, triangulate data sources, and introduce a complementary analytical lens focused on mapping ethical and bioethical issues through triangulation of sources.

Research team

The research team comprised 4 physical therapists and 1 philosopher, all of whom have expertise in qualitative and quantitative research, as well as evidence synthesis. One physical therapist (F.P.) holds a master's degree in philosophy, while another (G.B.) is pursuing a PhD in neuroscience, with a specific focus on bioethics applied to rehabilitation. One physical therapist (S.B.), PhD, is a research fellow and acted as methodologist to ensure methodological rigor. Another team member (M.T.), PhD, is an associate professor of physical therapy with extensive experience in clinical and academic research. The philosopher (S.P.M.) holds a PhD in bioethics. This interdisciplinary composition ensures a comprehensive and context-sensitive approach to the ethical aspects of physical therapy practice.

Eligibility criteria

Eligibility for study inclusion was determined using the Population, Concept, and Context (PCC) framework outlined by JBI.[16]

Population

Studies focusing on physical therapists as professionals and physical therapy as a discipline were included. Research investigating ethical challenges and bioethical issues in physical therapy clinical practice was considered.

Studies examining other health care professionals were excluded unless they explicitly discussed ethical issues concerning physical therapists. Likewise, studies from the patient's perspective were only included if they directly assessed physical therapists' ethical concerns.

Concept

The primary focus of this review was ethics and bioethics within physical therapy practice. Studies had to address ethical problems, principles, or challenges in the field. Research focusing exclusively on technical or procedural aspects of physical therapy, without an ethical dimension, was excluded.

Context

No restrictions were applied concerning geographical location, demographic, social, or cultural factors. Studies from diverse health care systems and settings were included.

Types of studies

The disciplinary foundation of medical ethics and bioethics is moral philosophy. Therefore, these fields—though applied to scientific domains such as medicine and health care—remain fundamentally humanistic and theoretical in nature. The main research methods in ethics are descriptive and normative. Depending on the method applied, different types of studies are identified in the literature.

In line with the objectives of this systematic scoping review and the inherently philosophical nature of ethics and bioethics, we included a wide range of study types. Specifically, we considered both descriptive and normative studies, reflecting the 2 main methodological approaches to ethical inquiry.

Descriptive (or empirical) ethics employs what we can call qualitative or social science-based studies—such as interviews, focus groups, observational research, or surveys—to investigate the ethical perceptions of physical therapists, that is, what these professionals perceive or believe to be good or bad (ethical principles) in their daily practice.[19]

Normative ethics proposes a thesis of good or bad (ethical thesis)—which can be entirely independent of the results of descriptive ethics—that the author argues dialectically through a logical-rational analysis. These studies may be presented in the form of reviews, philosophical analyses, or editorials. By examining the literature on ethics and bioethics applied to the field of physical therapy, several studies of this kind were identified, which represent central works of the ethical discourse.

Studies were excluded if they (1) did not explicitly address ethics or bioethics, (2) were not aligned with the scope of physical therapy, (3) were published in non-scholarly formats (eg, commentaries, letters, or duplicates), or (4) were unavailable in full text despite repeated attempts to obtain them. In relation to criterion (2), “not aligned with the scope of physical therapy” referred, for example, to articles addressing ethical issues exclusively in other health professions without relevance to physical therapy, or to legal/administrative discussions without clinical or educational implications for physical therapy.

All included studies—regardless of type—were classified into 1 of the 2 broad categories: descriptive (empirical) or normative ethics, based on their methodological approach.

Search strategy and information sources

The International Prospective Register of Systematic Reviews (PROSPERO) was consulted to ensure no existing systematic reviews covered this topic. Then, a literature search was conducted employing a data triangulation strategy by combining searches across bibliographic databases, grey literature, and specialized library resources. This approach was intended to enhance comprehensiveness and reduce the risk of missing relevant sources.

The following databases were consulted: PubMed, Embase, Cochrane Central, CINAHL, PsycINFO, and PEDro up to October 2024. These databases were selected based on their comprehensive coverage of health-related research, following established Cochrane recommendations.[20] The search strategy was developed for PubMed and adapted for each database. The complete list of search terms is provided in Supplementary Material 1 (Research String). No date or language restrictions were applied. The grey literature search followed the guidelines of the Canadian Agency for Drugs and Technologies in Health (CADTH).[21] Finally, to ensure a comprehensive analysis of bioethics literature related to physical therapy, an extended search was conducted on non-bibliographic sources, including both scientific databases and library resources. To this end, we collaborated with the University of Verona (Verona, Italy) librarians to access the Universe portal, which includes non-bibliographic sources. This allowed us to search for books, book chapters, conference proceedings, and websites related to the topic. If necessary, study authors were contacted for missing data.

Study selection

All identified records were uploaded to Covidence, where duplicates were automatically removed (Covidence systematic review software, Veritas Health Innovation, Melbourne, Australia. Available at www.covidence.org). Two independent reviewers (G.B., F.P.) screened titles and abstracts in a blinded manner. A calibration exercise was performed on a random 10% of records to ensure interrater reliability. As the agreement was above 90%, no refinement of the inclusion and exclusion criteria was needed, and the second pilot test was not required. Conflicts were resolved through consultation with a third reviewer (S.B.). A PRISMA flow diagram was used to document the selection process.

Data extraction

Data were extracted using a modified version of the JBI Standardized Data Extraction Form. Consistent with the iterative nature of scoping reviews, the list of extracted variables was refined during the process to include those most consistently reported across studies and most relevant for addressing the review questions:

- Authors
- Year of publication
- Country of origin
- Title
- Ethical inquiry type
- Study design
- Main ethical topics
- Domains of physical therapy practice

This adjustment ensured a more reliable and coherent dataset while maintaining fidelity to the overarching goals of the review. Two independent reviewers (G.B., F.P.) conducted the data extraction.

Data synthesis

A narrative synthesis was conducted to classify ethical issues in physical therapy. The grouping was based on the predominant topic addressed in each study, as identified through careful reading and analysis of the content.

Articles were grouped into the following key thematic categories:

- Ethical theories: foundational ethical principles and logical-analytical arguments guiding physical therapy.
- Ethical reasoning: how physical therapists identify, interpret, and address ethical issues in clinical practice (including true dilemmas, value conflicts, and experiences of moral distress).
- Ethical reasoning and education: works that address the development of ethical competence through education, training, and reflective learning.
- Ethical perception: what physical therapists perceive to be good or bad in their professional practice.
- Ethics of care relationship: ethical dimensions of the therapeutic relationship, including trust, communication, and boundaries.
- Justice and equity in clinical ethics: fairness, access to care, and systemic inequalities in physical therapy.
- Codes of ethics: content, use, and impact of formal professional codes within the field.

Findings were summarized to highlight how ethical considerations are manifested across different aspects of physical therapy practice. Gaps in the literature were identified, and potential areas for future research were suggested. The results were presented using tables to provide a representation of ethical topics and methodological trends.

In the data synthesis and discussion, we used the term *ethical dilemma* narrowly to indicate situations in which core ethical principles conflict, such that any available option violates an important value. We use *ethical problem* or *ethical issue* as umbrella terms for value-laden situations that may include—but are not limited to—true dilemmas, value conflicts, and experiences of *moral distress* (ie, when clinicians judge the right action but are constrained from acting on it). This policy ensures consistent and accurate usage throughout the manuscript.

Deviations from the protocol

While this systematic scoping review was conducted in accordance with the methodological framework established in the published protocol, some deviations occurred during the review process.[18] First, to ensure a more comprehensive exploration of ethical discourse, we decided to include editorials and narrative reviews, provided they offered substantial normative analysis or critical reflection. This decision was not explicitly outlined in the original protocol but was deemed methodologically coherent given the philosophical nature of the research topic. Finally, although the protocol stated a broad search strategy, the review extended its scope to include non-bibliographic sources by accessing academic library systems through the Universe portal. These deviations were consistent with the iterative nature of scoping reviews and contributed to a more robust mapping of the ethical literature in physical therapy.

Table 1 Summary of study characteristics

Study characteristic	Studies (*n*)
Ethical inquiry type	Normative (*n* = 50)
	Descriptive (empirical) (*n* = 58)
Main ethical topics	Code of ethics (*n* = 8)
	Ethical reasoning (*n* = 33)
	Ethical reasoning and education (*n* = 19)
	Ethical theory (*n* = 12)
	Ethics of the care relationship (*n* = 15)
	Justice and equity in clinical ethics (*n* = 8)
	Perception of ethical issues in physical therapy (*n* = 13)
Study design	Ethical analysis (*n* = 25)
	Case study (*n* = 6)
	Cross-sectional (*n* = 7)
	Delphi (*n* = 3)
	Editorial (*n* = 11)
	Longitudinal study (*n* = 5)
	Mixed-methods (*n* = 5)
	Observational studies (*n* = 4)
	Qualitative study (*n* = 22)
	Review (*n* = 7)
	Survey (*n* = 13)
Domain of physical therapy	Generic (*n* = 84)
	Geriatric (*n* = 3)
	Infectious diseases (*n* = 4)
	Intensive care (*n* = 1)
	Musculoskeletal (*n* = 1)
	Neurologic (*n* = 2)
	Palliative care (*n* = 1)
	Pediatric (*n* = 2)
	Professional ethics (*n* = 8)
	Sport (*n* = 2)

Results

A total of 15,464 records were identified through database searching. After removing 3223 duplicates, 12,241 records were screened by title and abstract. Of these, 11,856 were excluded as irrelevant, leaving 385 studies for full-text assessment. Among these, 219 records were excluded for the following reasons: a lack of explicit focus on ethics or bioethics, misalignment with the scope of physical therapy, or publication in non-scholarly formats (eg, commentaries, letters, or duplicates). In addition, 58 full texts could not be retrieved despite repeated attempts through institutional access and direct author contact (via email or ResearchGate). The grey literature search, conducted according to the guidelines of the CADTH, did not yield any additional sources for inclusion. Similarly, the search in bibliographic and library systems dedicated to the humanities resulted in 72 records, all of which were deemed irrelevant and thus excluded from the review. Hence, 108 studies met the inclusion criteria and were included in this review (Figure 1; PRISMA flow diagram). The list of full texts excluded from the review, with reasons, is available in the Supplementary Materials 2—excluded studies.

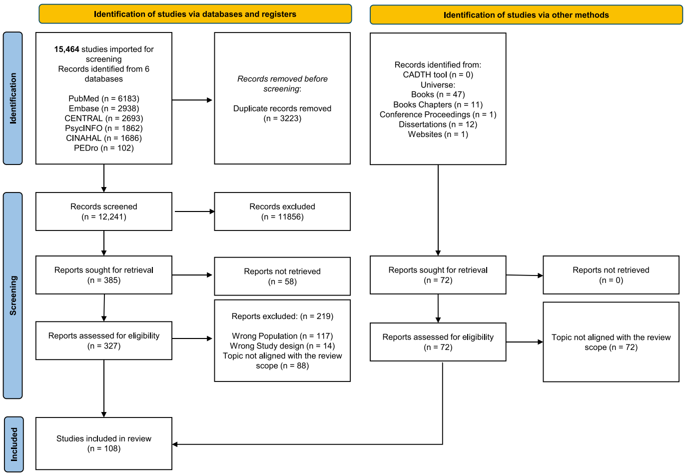

Figure 1 PRISMA Flow Diagram of Study Selection. The diagram illustrates the number of records identified, screened, excluded, and included, along with reasons for exclusion (eg, lack of explicit focus on ethics/bioethics, misalignment with physical therapy, non-scholarly formats, or full-text unavailable). Abbreviation: CADTH = Canadian Agency for Drugs and Technologies in Health.

Of the 108 studies, 50 employed a normative approach (25 ethical analysis, 6 case studies, 11 editorials, 7 reviews, and 1 Delphi study), while 58 were descriptive (22 qualitative studies, 13 surveys, 7 cross-sectional studies, 5 longitudinal studies, 4 observational studies, 5 mixed methods, and 2 Delphi studies). The studies covered various physical therapy domains, with the majority addressing general physical therapy (84), followed by professional ethics (8), geriatric care (3), infectious diseases (4), and other specialized areas. The key ethical topics explored included ethical reasoning (33), ethical reasoning and education (19), ethical theories (12), codes of ethics (8), justice and equity in clinical ethics (8), ethics of care relationships (15), and the perception of ethical issues in physical therapy (13).

A summary of the study characteristics is presented in the Table 1, while a detailed list of the included studies is provided in Supplementary Material 3—detailed list of included studies.

Ethical theory

The studies grouped under this category examine the theoretical foundations of ethical reasoning in physical therapy. Several authors critique the limitations of principle-based or deontological ethics when applied to complex clinical situations.[22] Instead, they propose a contextual ethics in rehabilitation settings.[23] For instance, some studies suggest that ethical reflection should consider patients' evolving identities and social contexts, particularly in cases of chronic disability.[22,23] Other authors incorporate elements of situational ethics to highlight the moral claims implicit in the care relationship.[24]

To operationalize ethical reasoning in clinical practice, several contributions propose applied frameworks.[25] One notable example is the "active engagement model," which combines ethical reflection with clinical decision-making by fostering active listening, critical thinking, and dialogical reasoning within multidisciplinary teams.[25]

Further contributions explored the ethical tensions arising from professional roles, such as the "double agent" dilemma, where physical therapists must navigate obligations to patients and employers.[26] These tensions are analyzed through classical ethical theories—such as utilitarianism (which focuses on maximizing overall benefit), deontology (which emphasizes duties and prohibitions in professional conduct), and ethical egoism (which considers the interests of the individual decision-maker).[26] Several studies also integrate utilitarian perspectives into rehabilitation goal planning, especially in resource-limited contexts, arguing for a balance between individual-centered care and broader considerations of distributive justice.[27]

Additionally, some authors critically engage with utilitarian bioethics—particularly the views of Peter Singer—arguing for an ethics of rehabilitation that affirms the intrinsic value of persons with disabilities, independent of their perceived productivity or "quality of life".[28]

Finally, a few theoretical models are proposed to guide ethical analysis in specific contexts, such as private physical therapy practice.[29] These models emphasize the need for ethical tools that are sensitive to the relational and communicative aspects of care, advocating for a dialogical approach that moves beyond formal consent to promote mutual understanding and trust.[29]

Ethical reasoning

The studies included in this category focus on how physical therapists engage with ethical challenges in everyday clinical practice, emphasizing reasoning processes. Rather than applying fixed principles, physical therapists often draw upon implicit moral intuitions, practical experience, and case-specific judgments to resolve ethical issues and conflicts among principles.[30] Ethical reasoning is portrayed as a dynamic, context-dependent process, shaped by clinical environment, resource constraints, and interprofessional relationships.[31]

However, several contributions highlight the importance of integrating ethical reflection into broader clinical decision-making frameworks.[32] These studies suggest that ethical reasoning in physical therapy is most effective when embedded in relational modes of thinking, allowing for attention to patient goals.[33]

To support such reasoning, several authors propose structured tools and models. The Realm-Individual Process-Situation (RIPS) model, for example, facilitates ethical analysis by distinguishing between individual, organizational, and societal dimensions of a dilemma.[34] Other studies emphasize the utility of structured ethical consultations to help clinicians identify value conflicts and clarify justifiable actions.[35]

Importantly, ethical reasoning in physical therapy also reflects tensions between ethical principles and external pressures. Studies in sports medicine, occupational health, and private practice reveal that financial incentives, institutional policies, and performance expectations can challenge physical therapists' ability to act according to their ethical commitments within a sort of "moral compromise."[36]

Finally, several contributions argue for enhancing ethical reasoning through continuous ethics education, interprofessional dialog, and reflective practice.[37]

Ethical reasoning and education

This category encompasses studies that investigate the development, effectiveness, and pedagogical strategies of ethics education in physical therapy. A central concern is how educational interventions influence students' ethical reasoning across academic and clinical settings. Several contributions employ longitudinal or pre-post designs using standardized instruments such as the Defining Issues Test (DIT).[38–40] While some studies demonstrate significant improvement in postconventional ethical reasoning following intensive ethics courses grounded in transformative learning theory, others find little to no measurable change over time, suggesting limitations in conventional curricula.[38–40]

Case-based learning (CBL) emerges as a widely used strategy, promoting ethical reflection through discussion of real-life scenarios.[41] When introduced early in training, this method fosters critical thinking and enhances moral sensitivity.[41,42] Where there is active student participation in identifying and analyzing ethical problems, the results are promising.[42]

Formal instruction in bioethics appears to have the effect of enhancing students' confidence in addressing ethical issues and improving interprofessional relational competence.[40]

Comparative studies between students and professionals indicate that practicing clinicians tend to employ more mature moral reasoning patterns than students, likely due to accumulated clinical experience and the demands of real-world decision-making.[43] These findings underscore the importance of mentorship, reflective practice, and situated learning in the workplace as key components of ethics education.[44,45]

Clinical placements and clinical education experiences are repeatedly identified as contexts in which ethical awareness is tested and refined. Students frequently encounter ethical tensions, and they often feel ill-equipped to resolve them.[44,46,47] Reflective journaling and narrative analysis reveal gaps in the application of ethical principles and highlight the need for better integration of academic instruction with clinical practice.[46]

Finally, cultural and contextual variables play a role in shaping ethical priorities and reasoning. Some studies identify shifts in value hierarchies across academic years—such as an increasing emphasis on equity and professional responsibility—while others note disciplinary differences in ethical preferences, with physical therapist students tending to favor collaborative and relational approaches to ethical challenges.[41]

Collectively, these studies suggest that ethics education in physical therapy requires more than formal instruction: it demands pedagogical approaches that are experiential, reflective, and context sensitive.

Perception of ethical issues

Studies in this category explore how physical therapists perceive ethical issues in their daily practice.

Qualitative research conducted internationally reveals considerable variability in how ethical problems are perceived, shaped by local health care structures, regulatory frameworks, and sociopolitical environments.[48–50] In particular, practitioners report feeling constrained by insufficient ethical guidance in relation to ethical codes.[48,51]

Perceptions of ethical problems also differ across professional settings and domains. In hospital environments, physical therapists commonly identify issues related to justice, resource allocation, and professional autonomy.[49,52] These concerns were especially pronounced during the COVID-19 pandemic, and in low-resource countries.[49,51]

Sociocultural variables play a significant role in shaping ethical sensitivity and principles. Cross-sectional studies identify gender-related differences in empathic engagement and interpersonal sensitivity, with female physical therapists often demonstrating higher ethical awareness in relational domains.[53] In certain contexts, private sector professionals report greater alignment with patient autonomy, whereas public sector practitioners prioritize collective needs.[54] Additionally, differences can be observed across national boundaries and educational backgrounds.[54]

Ethical problems are not limited to patient care but extend to interprofessional relations and organizational dynamics. Physical therapists frequently perceive tensions arising from medical hierarchies, unclear role definitions, and power imbalances, particularly when clinical judgment is overridden by institutional directives.[55]

Several studies emphasize the perceived gap between academic ethics education and real-world ethical challenges. While physical therapist educators recognize the importance of ethics and advocate for greater curricular integration, practicing clinicians often report unmet needs in ethical training.[50]

Ethics of the care relationship

This category explores the ethical dimensions embedded in the care relationship between physical therapists and patients. Studies emphasized that ethical physical therapy practice extends beyond technical competence to include relational sensitivity and a commitment to fostering patient self-determination.

A central theme across the literature is the ethical complexity of touch, corporeality, and intimacy, particularly in the treatment of elderly or vulnerable patients. These interactions require physical therapists to manage professional boundaries while cultivating a sense of safety and respect, often in the absence of explicit ethical training.[7,13]

Another key focus concerns the models of the therapeutic relationship, contrasting hierarchical or paternalistic models with a patient-centered care relationship.[56]

The concept of informed consent emerges as a pivotal ethical practice. Some physical therapists view it primarily as a formal requirement or a means to ensure legal safeguard or therapeutic adherence, while others advocate for a dialogic process that supports patient agency and autonomy.[57]

Several studies also examine moral distress experienced by physical therapists when constraints such as limited time, inadequate staffing, or institutional protocols, hinder their ability to provide ethical care aligned with their professional principles.[58]

The asymmetry of knowledge and power in the physical therapist-patient relationship is identified as a persistent challenge. To address this, the literature calls for greater attention to communication and patient empowerment.[57,59,60]

Justice and equity in clinical ethics

This category focuses on ethical issues related to justice, fairness, and equity in physical therapy practice, particularly in relation to access to care and resource allocation.

Several studies explore the tensions between clinical responsibilities and systemic constraints—such as institutional productivity targets, staffing shortages—that may prioritize efficiency or financial metrics over quality and equity of care.[61,62]

Ethical problems surrounding resource allocation are particularly pronounced in public or resource-limited settings, where physical therapists must make difficult decisions about treatment prioritization and duration.[62]

From a theoretical perspective, scholars have proposed moving beyond traditional distributive models of justice toward approaches that consider the real opportunities individuals must achieve health and well-being.[63]

Relatedly, some studies advocate for a needs-based approach to justice in health care, particularly in systems like Sweden's, where universal coverage supports more consistent ethical reasoning around equitable care.[64]

The literature also highlights the concept of social responsibility in physical therapy, urging professionals to engage with communities and contribute to health equity beyond the clinical setting.[63] This includes addressing structural barriers such as provider shortages, limited access to rehabilitation in rural or underserved areas, and sociocultural stigmas.

Educational interventions are seen as essential to preparing future professionals for justice-oriented practice. Experiential learning models—such as critical reflection—are proposed to foster ethical awareness and empower students to address inequities within and beyond clinical environments.[65]

Codes of ethics

This category explores the development, application, and interpretation of codes of ethics in physical therapy, examining their role in guiding professional behavior, shaping identity, and addressing ethical challenges. Codes of ethics—distinct from clinical guidelines or legal regulations—articulate ethical duties and prohibitions in professional behavior within clinical practice.

Research assessing physical therapists' awareness and application of ethical codes revealed generally good levels of familiarity, particularly among older and more experienced professionals.[66]

Other studies pointed to a gap between formal codes and everyday practice, with physical therapists often relying on intuitive reasoning or personal principles in ethically complex situations.[67,68] These findings highlight the limited use of codified ethical principles in daily decision-making, prompting calls for structured training programs.[67,69]

Several contributions examine how ethical codes are developed and revised, often through participatory methods.[68] Some studies emphasized that codes of ethics should be actively internalized during professional formation.[69] Indeed, rather than serving as static rulebooks, ethical codes are dynamic tools that evolve with changing societal expectations and professional contexts, demanding ongoing reflection, critique, and education to remain relevant and impactful.[70]

From a historical perspective, the early evolution of ethical codes in physical therapy reveals their strategic use in legitimizing the profession. One study traced how the first code of the American Physical Therapy Association (APTA) (1918-1935) prioritized alignment with the male-dominated medical profession and omitted reference to patient-centered principles, reflecting the profession's struggles with gendered power dynamics and institutional recognition.[71]

Discussion

The findings of this systematic scoping review underscore the complexity of ethical and bioethical issues in physical therapy. This review identifies the types and foci of studies, maps the principles, theories, and perspectives most frequently discussed, and synthesizes recurring topics and gaps across decades of scholarship. Drawing on prior work, our analysis corroborates patterns noted by Swisher—such as the earlier dominance of principles-based approaches and the later rise of social scientific studies.[15] By triangulating diverse sources, this review extends earlier retrospective analyses and provides a comprehensive, descriptive overview of the field's evolving ethical discourse.

Ethical problems permeate various aspects of clinical practice, including professional conduct, patient care, justice and equity, and decision-making frameworks.[44,72] The review confirms that ethical reasoning plays a pivotal role in guiding physical therapists through these challenges, yet also highlights significant gaps in training, inconsistencies in ethical application, and structural barriers that complicate clinical judgment. [45] These inconsistencies in ethical application include variations in how physical therapists interpret and prioritize core ethical principles, often influenced by contextual factors like workplace norms, cultural expectations, and differing levels of ethical preparedness. Furthermore, structural barriers complicating clinical judgment encompass organizational constraints such as time pressure, productivity demands, lack of interdisciplinary collaboration, and institutional policies, thereby limiting the physical therapists' ability to make ethically sound decisions.

A key issue emerging from the review concerns the development and integration of ethical reasoning in physical therapy.[39] While physical therapists frequently encounter ethically ambiguous situations, their ability to manage them effectively is closely tied to their formal ethics education and exposure to structured frameworks.[42] Without these supports, clinicians often rely on intuitive or ad hoc approaches that lack consistency. The literature supports the adoption of pedagogical strategies such as CBL and interdisciplinary training, yet highlights the limited standardization of ethics education within physical therapist curricula.[41] Addressing this gap could strengthen clinicians' confidence, promote reflective practice, and enhance their capacity to navigate ethically challenging situations with consistency and integrity, thereby fostering a workforce that is better equipped to sustain ethical decision-making under pressure.[32]

Another relevant dimension relates to the function and status of codes of ethics in physical therapy. While these codes offer a foundational reference for professional conduct, their application in daily practice differs significantly between national contexts—such as differences in legal enforceability across countries—and institutional contexts, which refer to the specific organizational settings where physical therapists work (eg, hospitals, private practices, academic institutions).[68,70] In countries like Canada and Australia, codes of ethics are embedded within regulatory frameworks and hold binding authority, whereas in other contexts, such as parts of Europe and Asia, they function more as aspirational or advisory documents without formal enforcement mechanisms.[69] There are also cases like Italy, where the Code of Ethics for physical therapists is not a state law; however, it is binding for professionals under penalty of disciplinary sanctions imposed by the professional association. Ongoing professional development—meaning continuous learning opportunities that include ethics training and reflection on real-world dilemmas—plays a crucial role in helping clinicians understand, apply, and internalize these codes. [70] In the United States, the APTA Code of Ethics similarly serves as a central professional reference. Although not enacted as federal law, it is widely integrated into state-level regulatory frameworks—often through alignment with the Federation of State Boards of Physical Therapy's Model Practice Act—and thus functions as a binding standard within many jurisdictions. This alignment reflects the Model Practice Act's recommendation that state statutes incorporate ethical standards directly into regulatory language, a process already adopted or underway across multiple states in the United States.[70]

Justice and equity emerged as particularly salient ethical concerns, especially in contexts of limited resources, systemic inequities, and institutional constraints.[73] Many physical therapists report ethical distress when unable to deliver equitable care due to bureaucratic or economic pressures.[61,62] Addressing these challenges requires expanding the ethical lens beyond individual patient care to include social determinants of health, health policy, and institutional priorities.[74] Mechanisms such as clinical ethics committees, reflective practice groups, and interprofessional collaboration could support physical therapists in navigating these complex dynamics.[63]

The ethics of the care relationship also warrant close attention.[7] The embodied and interpersonal nature of physical therapy raises unique ethical challenges, particularly in relation to physical touch and the maintenance of professional boundaries—that is, the ability to establish respectful and appropriate therapeutic relationships without overstepping into the patient's personal or emotional space.[75] These dynamics are especially relevant in situations involving vulnerable populations or intimate treatment settings. Moreover, physical therapists, like other health care professionals, have an ethical duty to inform and communicate with patients to ensure the exercise of their self-determination.[60,76] Achieving this requires ethical training that prioritizes relational competence, sensitivity to context, and a dialogical approach to care.

Sociocultural factors significantly shape how ethical issues are perceived and managed in physical therapy.[48] For instance, concepts such as patient autonomy, confidentiality, or professional boundaries may be interpreted differently across cultural settings. International studies reveal notable differences in ethical priorities (such as a stronger emphasis on individual rights in Western countries versus collective responsibility in certain Asian contexts) and interprofessional relationships (in hierarchical health care systems—such as those in Italy, India, or Japan—physical therapists may experience constraints on their clinical judgment, for example when decisions are predominantly physician-driven or when institutional protocols override their ethical concerns; by contrast, more collaborative or decentralized systems, such as those in the Netherlands or Scandinavia, may allow for greater professional autonomy).[54] Several ethical domains appear underexplored in the literature and warrant further attention. For example, ethical issues in oncological and end-of-life care remain insufficiently investigated, despite their high ethical salience for physical therapists.[77] These settings often involve complex decisions around quality of life, non-maleficence, informed consent, and therapeutic goals that may shift from curative to palliative.[76]

The integration of emerging technologies in physical therapy also introduces novel ethical concerns.[78] Developments in artificial intelligence, tele-rehabilitation, and assistive technologies raise questions about privacy, data protection, and the evolving nature of the therapist-patient relationship. These technological shifts necessitate careful ethical scrutiny to ensure that innovation supports, rather than undermines, therapeutic integrity and patient engagement.

Equity, diversity, and inclusion (EDI) in physical therapy practice remain insufficiently studied from an ethical perspective. There is a need to explore how linguistic, cultural, and socioeconomic barriers affect access to rehabilitation services, particularly for underserved populations.[57] Additionally, ethical concerns related to care for lesbian, gay, bisexual, transgender, queer, and other diverse identities (LGBTQIA+), including respect for gender identity and sexual orientation, remain underrepresented.[51,74,77] Recent scholarship has begun to address these gaps by calling for affirming and inclusive practice guidelines for people who identify as LGBTQIA+, strengthening cultural competence in clinical encounters, and advocating for curricular reforms grounded in justice, EDI principles.[79–81] Structured education and training on cultural competence, inclusivity, and anti-discrimination should be prioritized to foster equitable and respectful care. In conceptual terms, it is important to note that within this review, justice is treated as a broader bioethical principle that cuts across multiple domains, whereas EDI reflects more specific, practice-oriented expressions of justice in contemporary clinical, educational, and organizational contexts. Recognizing this relationship helps clarify why the 2 areas appear in different sections of the analysis while remaining conceptually interconnected.

Altogether, this review carries significant practical implications. The synthesis of ethical and bioethical issues underscores the need to enhance the integration of ethical reasoning in entry-level physical therapist curricula, ensuring that students are equipped to address complex ethical dilemmas in clinical practice. This effort can entail the inclusion of structured ethics modules, the use of CBL, and the adoption of assessment tools that explicitly evaluate ethical reasoning skills.[82] At the clinical and organizational level, the findings underscore the importance of providing structural supports—such as ethics consultation services, reflective practice groups, and interprofessional dialog—that enable physical therapists to manage ethically challenging situations without isolation. Such mechanisms can help translate ethical reflection into consistent practice and support a culture of ethical accountability within health care institutions.[83–85] In addition to these practical considerations, the review highlights how the existing literature on ethics in physical therapy reflects recurring themes—such as the therapeutic relationship, the embodied nature of care, and the profession's intermediary role between patients and health systems—that are particularly relevant in rehabilitation contexts. These contributions can be interpreted as contextual applications of medical and bioethical principles, adapted to the specific features of physical therapy practice.

At the same time, this synthesis reveals a lack of awareness in the literature regarding several ethically relevant areas. Ethical issues in oncological and end-of-life care, in digital health and artificial intelligence, and in the domains of EDI remain underexplored in the literature despite their growing salience for physical therapy practice. Emerging research on LGBTQIA+ health, structural determinants of inequity, and antiracism in physical therapy underscores the urgency of addressing these gaps through more systematic empirical and educational scholarship.[86,87] Making sense of this body of work, therefore, requires not only cataloging existing contributions but also spotting these gaps in the literature to inform future studies. Taken together, the most substantial gaps concern: (1) the limited ethical analysis of inequities affecting underserved communities—including LGBTQIA+ individuals and communities facing linguistic, cultural, or socioeconomic barriers; (2) the scarcity of empirical studies addressing justice-related issues in rehabilitation access and outcomes; and (3) the underdeveloped ethical scholarship on emerging areas such as oncological and end-of-life care, digital health, and artificial intelligence.

In addition, several priorities for future scholarship can be identified. First, there is a need to establish clear and shared definitions of ethical concepts as they apply specifically to physical therapy—for example, what constitutes an "ethical dilemma" in hands-on therapeutic encounters, how "moral distress" is experienced when organizational constraints prevent equitable care, or how the notion of a "care relationship" should be framed in a profession where bodily contact and continuity of interaction are central. Establishing such definitions would enable consistent communication across studies, improve the design of ethics education within physical therapist curricula, and strengthen the comparability of research findings. Second, descriptive research—that is, studies investigating how physical therapists experience, interpret, and address ethical challenges in practice—should be expanded to include diverse cultural and geographical settings, particularly non-Western health care systems, in order to capture the global nature of ethical challenges in physical therapy. Ultimately, future research should address emerging issues such as the use of artificial intelligence and concerns related to EDI. Progress in these areas could provide a more comprehensive and globally relevant understanding of ethical and bioethical issues in physical therapy. Attention to features specific to physical therapy—such as the embodied and hands-on nature of care, the frequency and continuity of encounters, the dual role between prescriptions and patients' goals, and the educational dimension of adherence and empowerment—can help future descriptive research better capture how ethical challenges are experienced and managed in practice.

Limitations and future directions

While this systematic scoping review provides a comprehensive overview of ethics in physical therapy, certain limitations must be acknowledged. Including both descriptive (empirical) and normative bioethics studies introduces heterogeneity in the analyzed literature, which may impact comparability. Another limitation is the potential underrepresentation of ethical issues specific to non-Western health care contexts. While this review aimed to include diverse perspectives, the predominance of studies from high-income countries is evident, with approximately 75% of the data coming from North America and Europe. This geographic imbalance is a well-documented structural limitation across many professional fields; however, it holds particular significance in ethics, where cultural, social, and institutional norms deeply influence how ethical issues are defined, prioritized, and addressed. In addition, our search strategy followed the predefined string reported in the published protocol. As a consequence, broader constructs such as professionalism, professional formation, or professional development were not included as search terms. While this choice ensured methodological consistency with the protocol, it may have limited the retrieval of studies primarily indexed under those categories. Future reviews should examine these constructs in dedicated analyses, allowing focused exploration of their ethical dimensions. Finally, although we systematically searched grey literature sources using a structured checklist, it is not feasible to capture all possible grey literature materials. Widely used educational textbooks in physical therapy may not have been included, despite their acknowledged influence on ethics education within the profession. These include key texts such as Patient–Practitioner Interaction,[88] Professional Issues and Ethics in Physical Therapy,[89] and Ethical Dimensions in the Health Professions.[90]

Conclusion

This systematic scoping review presents a descriptive synthesis of ethical and bioethical issues in physical therapy across various domains, including ethical reasoning, justice and equity, codes of ethics, the care relationship, and the perception of ethical problems in practice. These themes reflect how the 4 foundational biomedical principles—autonomy, beneficence, non-maleficence, and justice—are interpreted and operationalized within contemporary rehabilitation contexts. Although ethical challenges are pervasive, targeted strategies—such as structured ethics education and organizational support mechanisms (eg, ethics consultation services, reflective practice groups, and policies that enable deliberation)—can strengthen clinical decision-making and promote patient-centered, equitable care. The review identifies several underexplored areas—including oncology and end-of-life rehabilitation, digital health and artificial intelligence, and EDI—as well as cross-cultural gaps that warrant further descriptive research. These gaps carry distinct implications for education, practice, and policy. In education, they highlight the need to reinforce ethics teaching, cultural competence, and structured opportunities for ethical reflection within physical therapist curricula. In clinical practice, they underscore the value of accessible ethical resources and institutional supports to assist clinicians in navigating complex dilemmas. At the policy level, the findings point to opportunities to refine ethical standards, strengthen regulatory guidance, and promote more equitable access to rehabilitation services.

Overall, these contributions are intended to inform curricula, professional development and research, and service organizations.

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CRediT – Contributor Role

Gianluca Bertoni (Data curation [equal], Formal analysis [equal], Investigation [equal], Resources [equal], Validation [equal], Writing—original draft [equal]), Sara Patuzzo Manzati (Data curation [equal], Formal analysis [equal], Investigation [equal], Methodology [equal], Validation [equal], Writing—review & editing [equal]), Federica Pagani (Formal analysis [equal], Investigation [equal], Writing—review & editing [equal]), Marco Testa (Methodology [equal], Project administration [equal], Supervision [equal], Writing—review & editing [equal]), and Simone Battista (Conceptualization [equal], Data curation [Equal], Methodology [equal], Project administration [equal], Supervision [equal], Writing—review & editing [equal]).

Supplementary Material

Supplementary material is available online.

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The authors completed the ICMJE Form for Disclosure of Potential Conflicts of Interest and reported no conflicts of interest.

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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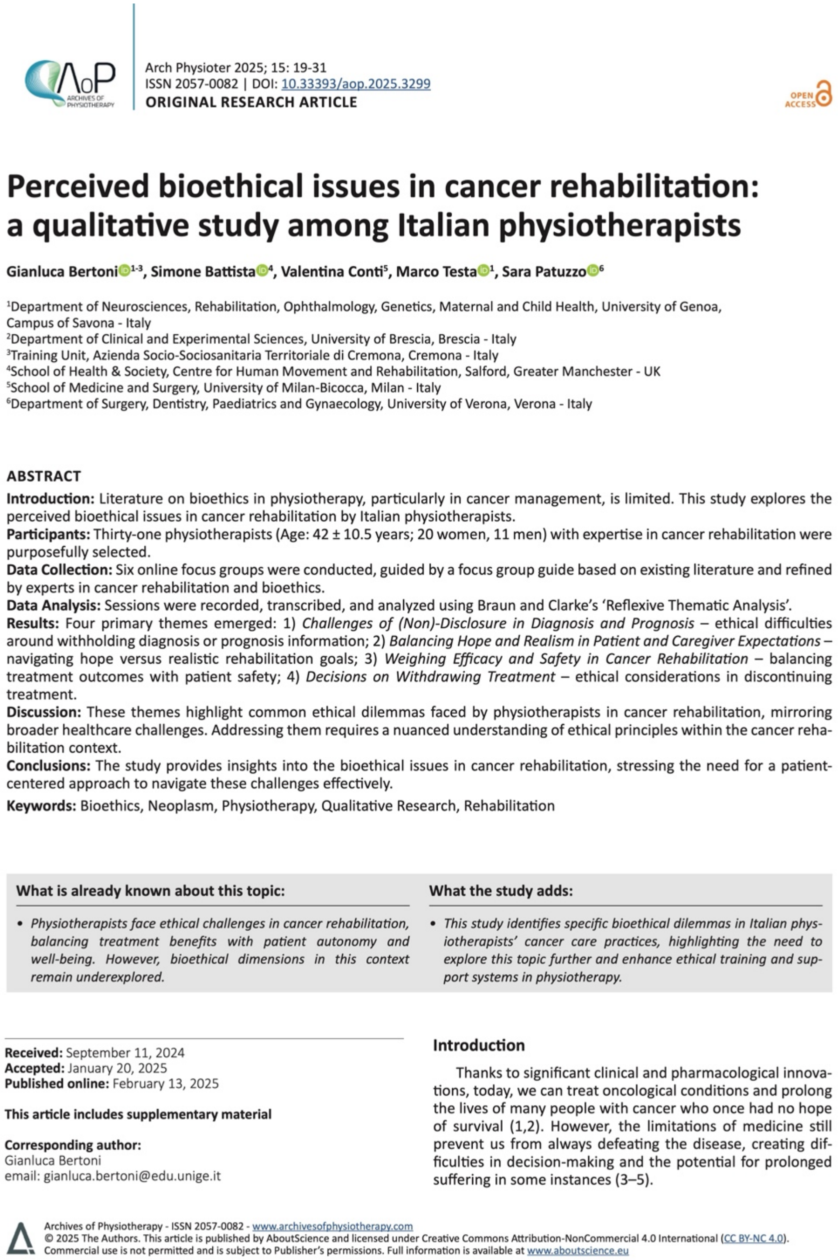
Review

Study 3



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ORIGINAL RESEARCH ARTICLE

Perceived bioethical issues in cancer rehabilitation: a qualitative study among Italian physiotherapists

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ABSTRACT

Introduction: Literature on bioethics in physiotherapy, particularly in cancer management, is limited. This study explores the perceived bioethical issues in cancer rehabilitation by Italian physiotherapists.
Participants: Thirty-one physiotherapists (Age: 42 ± 10.5 years; 20 women, 11 men) with expertise in cancer rehabilitation were purposefully selected.
Data Collection: Six online focus groups were conducted, guided by a focus group guide based on existing literature and refined by experts in cancer rehabilitation and bioethics.
Data Analysis: Sessions were recorded, transcribed, and analyzed using Braun and Clarke's 'Reflexive Thematic Analysis'.
Results: Four primary themes emerged: 1) *Challenges of (Non)-Disclosure in Diagnosis and Prognosis* – ethical difficulties around withholding diagnosis or prognosis information; 2) *Balancing Hope and Realism in Patient and Caregiver Expectations* – navigating hope versus realistic rehabilitation goals; 3) *Weighing Efficacy and Safety in Cancer Rehabilitation* – balancing treatment outcomes with patient safety; 4) *Decisions on Withdrawing Treatment* – ethical considerations in discontinuing treatment.
Discussion: These themes highlight common ethical dilemmas faced by physiotherapists in cancer rehabilitation, mirroring broader healthcare challenges. Addressing them requires a nuanced understanding of ethical principles within the cancer rehabilitation context.
Conclusions: The study provides insights into the bioethical issues in cancer rehabilitation, stressing the need for a patient-centered approach to navigate these challenges effectively.

Keywords: Bioethics, Neoplasm, Physiotherapy, Qualitative Research, Rehabilitation

What is already known about this topic:	What the study adds:
- *Physiotherapists face ethical challenges in cancer rehabilitation, balancing treatment benefits with patient autonomy and well-being. However, bioethical dimensions in this context remain underexplored.*	- *This study identifies specific bioethical dilemmas in Italian physiotherapists' cancer care practices, highlighting the need to explore this topic further and enhance ethical training and support systems in physiotherapy.*

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Introduction

Thanks to significant clinical and pharmacological innovations, today, we can treat oncological conditions and prolong the lives of many people with cancer who once had no hope of survival (1,2). However, the limitations of medicine still prevent us from always defeating the disease, creating difficulties in decision-making and the potential for prolonged suffering in some instances (3–5).

This context raises the interest of the bioethical discipline, which questions the moral implications of biomedical and biotechnological progress (6). Are the new medical opportunities to address oncological conditions always beneficial for the patient? When can intervention be classified as therapeutic obstinacy, as futile care that causes harm rather than benefit the patient? Should we support the duration of biological life even if it is at the expense of biographical life? (7). These and other similar questions fuel the bioethical debate on end-of-life issues, involving other fields of study, such as medical ethics (8) and medical deontology (9), which respectively identify ethical principles and their translation into rules of conduct aimed at guiding physicians and healthcare professionals in their profession. Does the duty to intervene to cure (ethical principle of beneficence) have boundaries (10)? How does it relate to the prohibition of harming the patient (ethical principle of non-maleficence) given that every treatment entails serious side effects (10,11)? How does it intersect with subjective concepts such as well-being and quality of life, and when is it appropriate to shift the focus from therapy to palliation (12,13)? How should communication with the patient be managed to ensure that their consent or dissent is fully informed (ethical principle of autonomy) (10,14)?

The literature has extensively investigated these questions, considering the physicians' perspectives (15–17). However, cancer management is multidisciplinary, and different health professionals work with patients. In particular, the physiotherapist's role has become an integral part of the medical team in oncology, as rehabilitation is fundamental to increasing the patient's quality of life while reducing disability levels (18,19). Consequently, ethical perspectives on this context should include physiotherapists. Nevertheless, the literature has so far focused on investigating the link between ethics and physiotherapy in general (20–33) or more partially on end-of-life issues (34–37), with little to no studies in oncology (38,39).

Hence, this qualitative focus group study aimed to identify and explore the bioethical issues in oncological rehabilitation as perceived by a group of Italian physiotherapists experts in this field. Specifically, it seeks to serve as a tool for descriptive ethics, helpful in capturing an existing reality about what physiotherapists perceive or interpret as ethical dilemmas in their professional practice in oncology.

Conducting this study in Italy represents a unique opportunity due to the country's socio-cultural context that can significantly shape bioethical considerations in cancer rehabilitation. Italian society, with its predominantly conservative values, deep-rooted Catholic traditions, and family-centered decision-making processes, creates a distinctive environment in which these ethical themes unfold (40,41). The Vatican further reinforces moral considerations aligned closely with religious teachings, which can influence healthcare providers' approaches to ethical challenges (42,43). For instance, decisions regarding the disclosure of diagnoses often involve requests from family members to shield patients from distressing information, reflecting a paternalistic view of care (40,41). Moreover, this cultural backdrop shapes the balancing act between fostering hope and maintaining realistic expectations (31,44). Due to their frequent and close contact with patients, physiotherapists often become confidants, sometimes feeling obliged to support patient optimism even when transparency might be compromised (45). Finally, these socio-cultural factors influence decisions on treatment continuation or withdrawal, particularly in terminal cases. In such instances, the wishes of family members can take precedence over other considerations. This culturally embedded context highlights the importance of considering Italy's distinctive social and ethical influences when examining bioethical practices in cancer rehabilitation.

Methods

Study Design

The authors conducted a qualitative focus group study. Qualitative research is the most effective method for gathering experts' opinions (46). A focus group is the ideal methodological tool to foster the development of peer support, as the group can help explore and clarify the views of a group of individuals (47). The study was performed per the Declaration of Helsinki and reported following the Consolidated Criteria for Reporting Qualitative Research (COREQ (48)). The COREQ summary sheet can be found in Supplementary File 1. Ethical approval was obtained from the Ethics Committee for University Research, University of Genova (Approval date: 27/06/2023; Genova), and informed consent was collected.

Participants

Study participants were recruited through purposive sampling (49). Specifically, participants in this study were carefully selected to include a range of perspectives on cancer rehabilitation. We had Italian physiotherapists with clinical and academic expertise in the field. To be considered experts and participate in the focus groups, the participants must have had at least five years of continuous experience in cancer rehabilitation or possess advanced education degrees and training in cancer rehabilitation. Participants were contacted via email and sourced through universities, oncology facilities, personal networks, and snowball sampling, with eligibility determined by analyzing their professional backgrounds. Then, participants were selected primarily through the analysis of their curricula vitae. GB conducted the curricula vitae analysis. Once GB identified the eligible participants, he recruited them by email. The email reported the purpose of the study, how the research would be conducted (e.g., through focus groups), and the confidentiality and anonymity of the data. The informed consent form was sent as an attachment, which participants were required to complete, sign, and return via email. Each focus group consisted of three to seven participants. The disparity in participant numbers across different focus groups can be attributed to the participants' practical constraints related to work and family commitments, affecting their ability to attend the scheduled online meetings. Each focus group lasted between one to two hours.

Data Collection

An open-question-based focus group guide (Table 1) was constructed, based on existing literature on cancer rehabilitation (2,50), by a physiotherapist experienced in cancer rehabilitation (GB), a physiotherapist experienced in qualitative research (SB) and a bioethicist (SP). Relevant information about Focus group facilitators and researchers' profiles can be found in Supplementary File 2 (Focus group facilitators and researchers' profiles).

TABLE 1 - Steps of the focus group and questions

	Introduction
1.	Introduction to the project and presentation of the moderators
2.	Presentation of the participants in the focus group
3.	The researchers provided a definition of ethical dilemma to the participants to have a shared language. Specifically, we reported that an ethical dilemma is a complex situation that raises moral questions and prompts reflections on what is right and what is wrong. It often involves conflicts between values, duties, or interests, challenging the morality of the actions or decisions involved. It can stem from specific circumstances, such as difficult medical decisions or ethical issues in healthcare, and requires a weighted assessment of the various factors involved to find the best possible solution.
	Questions
1.	Cancer is still a widespread condition that limits patients' quality of life. Physiotherapy is certainly useful and important for individuals with cancer. Does bioethics play a role in cancer rehabilitation?
2.	Could you tell us about the ethical dilemmas you have faced during your clinical practice in cancer rehabilitation?
3.	Are there any ethical dilemmas that we have not mentioned that are nonetheless relevant or important to you?
4.	How have you addressed these ethical dilemmas? (with a colleague/coordinator/ethics committee)
5.	Where does your sensitivity related to these bioethical issues come from? (e.g., from a course? From religion? From university training?)
6.	Is there any topic we have not touched on that you feel is important to highlight or elaborate on?

For each explored thematic area, we formulated stimulus questions to encourage dialogue and discussion among participants to answer our research question. The guide was also reviewed by two patients who underwent cancer rehabilitation to grant patients perspective in our research (51,52). Finally, a pilot interview was conducted with a lecturer in cancer rehabilitation to test the guide's relevance and understandability. The individual involved in the pilot interview is a male physiotherapist who has been working in oncological and palliative rehabilitation for 15 years. Additionally, he has taught 'Rehabilitation in Oncological and Palliative Care' for the past five academic years in a BSc in Physiotherapy at the University of Brescia. The focus groups were conducted online with only the moderators and participants. The software used for the focus groups was Microsoft Teams. Three moderators (GB, SB, and SP) were present during the focus groups. No close relationships were established before the study between the focus group moderators and the participants. No follow-up focus groups were performed. The focus groups were recorded and transcribed *verbatim*. The transcription was obtained through the software's automatic transcription feature and checked for precision and accuracy by GB and VC by comparing the transcription to the audio recording.

The recordings were preserved in a secure database and deleted after data transcription. While conducting the interview, GB anonymized the participants as 'Participant 1', 'Participant 2', etc., according to the chronological order of the interviews. This label is the only information shared with the rest of the group. The analysis of the collected data was carried out after focus group transcription.

Data Analysis

We collected descriptive data related to participants' gender, age, geographic origin, and professional role. Data analysis was performed according to the principles of Braun's and Clark's 'Reflexive Thematic Analysis' (RTA) (53). This choice was made because the research aims to identify patterns of meaning – and consequently themes – relating to the role of physiotherapists in oncology, focusing on bioethical issues in cancer rehabilitation as perceived by physiotherapists (54). More details on the characteristics of the authors to understand their standpoint in the reflective process can be found in Supplementary File 2 (Focus group facilitators and researchers' profiles). More details on the analysis process through Reflexive Thematic Analysis can be found in Table 2 (six steps of RTA) & in Supplementary File 3 (Theoretical standpoint).

Results

Six focus groups were conducted in July and September 2022 with thirty-one participants (Age: 42 ± 10,5; 32% Men N = 10; 68% Women N = 21, Table 3). Of the participants, all were expert clinicians, six were clinicians and lecturers, and one was a researcher in cancer rehabilitation who also possesses several years of clinical experience in this field. All the contacted participants accepted to partake in the study.

TABLE 2 - Six steps of the RTA

Phases	Process	Authors' Involvement	Authors' Actions
1) Data familiarization	All authors read and reread several times the transcriptions of the focus groups. This process is fundamental to getting in contact with the data and taking notes of any insights.	All authors engaged in this phase, and they met to reflect upon their first insights	- Document theoretical and reflective thoughts: GB documented field notes ("Memos" and diary) during and after each focus group to promote reflexivity. - Keep records of all data field notes, transcripts, and reflexive diary - Prolong engagement with data and triangulate different data collection modes to increase the probability that the research findings and interpretations will be found credible: GB e VC read and reread the data (transcripts of the focus groups, memos, and reflexive diary)
2) Coding	In this phase, two researchers systematically coded the data through an open, evolving, and organic process.	GB and VC systematically coded the data. They adopted semantic data coding.	- Peer debriefing: memos were shared during research meetings for reflexive thoughts. - Audit trail of code generation: GB and VC coded data through the entire data set to identify interesting aspects in the data items that may form the basis of themes across the data set. - Documentation of all team meetings and peer debriefings to help researchers examine how their thoughts and ideas evolve as they engage more deeply with the data
3) Generating initial themes	The researchers generated initial themes from the codes, clustering similar or related codes.	GB and VC generated initial themes separately, clustering similar codes together.	- Diagramming to make sense of theme connections: GB and VC generated initial themes through deductive thematic analysis.
4) Reviewing and refining themes	The researcher reviewed the initial themes, reworking or discarding some until finding a final set of themes fitting the data.	All authors reviewed the coding and initial themes separately and then jointly and generated four themes that fit the data the most. GB and VC reviewed the agreed themes against the codes and the entire dataset.	- Themes vetted by team members: the research team frequently met to refine the themes and clearly show how each theme was derived from the data.
5) Defining and naming themes	The 'story' of each theme is developed by finalizing theme names and their definition.	All authors finalized the final themes and definitions to set the basis of the written report.	- Peer debriefing and team consensus on themes: the research team met until the final themes were reached. - Documentation of theme naming.
6) Producing the report	The authors produced the final report and refined them if necessary.	GB and VC selected the illustrative quotations from the interviews, and all authors reviewed and agreed. GB, SB, and SP led the writing of the paper, and all authors participated in this phase.	- Producing the report using direct quotes from participants. - Report on reasons for theoretical, methodological, and analytical choices throughout the entire study.

TABLE 3 - Descriptive statistics

Participant	Age	Gender	Educational level, Professional role	Y. of Expertise	Region
1st Focus Group (November 2023)					
P1	53	Woman	BSc, Clinical expert	13	North
P2	54	Man	BSc, Clinical expert, and lecturer	30	North
P3	38	Woman	MSc, Clinical expert	40	North
2nd Focus Group (November 2023)					
P4	55	Woman	MSc, Clinical expert	29	North
P5	39	Woman	MSc, Clinical expert, and lecturer	13	South & Islands

Participant	Age	Gender	Educational level, Professional role	Y. of Expertise	Region
P6	28	Woman	BSc, Clinical expert	6	North
P7	41	Woman	BSc, Clinical expert	19	North
P8	43	Woman	BSc, Clinical expert	21	North
3rd Focus Group (November 2023)					
P9	35	Man	MSc, Clinical expert	11	North
P10	39	Man	MSc, Clinical expert	16	North
P11	26	Woman	MSc, Clinical expert	5	North
P12	45	Man	MSc, Clinical expert	22	North
P13	45	Woman	MSc, Clinical expert	10	South & Islands
4th Focus Group (November 2023)					
P14	60	Man	MSc, Clinical expert, and lecturer	30	North
P15	26	Man	BSc, Clinical expert	5	North
P16	37	Man	BSc, Clinical expert	8	South & Islands
P17	28	Woman	MSc, Clinical expert and lecturer	7	North
5th Focus Group (November 2023)					
P18	42	Woman	BSc, Clinical expert	19	North
P19	27	Man	MSc, Clinical expert	5	North
P20	34	Woman	MSc, Clinical expert	13	North
P21	49	Woman	BSc, Clinical expert	25	North
P22	41	Woman	MSc, Clinical expert	19	North
P23	61	Woman	MSc, Clinical expert, and lecturer	39	North
P24	54	Man	MSc, Clinical expert	28	North
6th Focus Group (November 2023)					
P25	36	Man	MSc, Clinical expert	13	North
P26	52	Woman	PhD, Clinical expert, and Researcher	27	North
P27	59	Woman	MSc, Clinical expert	35	North
P28	51	Man	MSc, Clinical expert	24	North
P29	48	Woman	MSc, Clinical expert, and lecturer	26	North
P30	30	Woman	MSc, Clinical expert	8	North
P31	42	Woman	MSc, Clinical expert	18	North

Legend: P, participant
Y, Years
BSc, Bachelor of Science
MSc, Master of Science
PhD, Doctor of Philosophy

From the analysis of the focus groups, four themes were generated (see Table 4 for an example of the coding process and relevant quotations and Supplementary File 4 for further quotations). According to our participants, these issues encapsulated the primary bioethical challenges encountered by physiotherapists in the clinical care of people with cancer: 1. 'Challenges of (Non)-Disclosure in Diagnosis and Prognosis'; 2. 'Balancing Hope and Realism in Patient and Caregiver Expectations'; 3. 'Weighing Efficacy and Safety in Cancer Rehabilitation'; 4. 'Decisions on Withdrawing Treatment'.

Theme 1: 'Challenges of (Non)-Disclosure in Diagnosis and Prognosis'

The main bioethical issue perceived by physiotherapists in cancer rehabilitation centers on the ethical dilemma of (non)-disclosure, particularly when this leads to communication challenges regarding patients' diagnoses and prognoses. This dilemma prompted the authors to generate Theme 1, which addresses the complexities physiotherapists encounter when managing situations where essential information is withheld, impacting patient understanding and informed consent. Participants reported that

TABLE 4 - Defined codes for the generated themes with example of quotes

Theme 1: Challenges of (Non)-Disclosure in Diagnosis and Prognosis	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Navigating Diagnosis/ Prognosis Disclosure: Implications on Informed Consent/Disagreement	'Very often we find ourselves in a situation where the patient is sent for rehabilitation without being informed about the prognosis, maintaining ignorance about the severity of their condition. This puts us face to face with the main dilemma: should we still communicate with a patient who is unaware of their situation? In the field of oncology, patients are constantly misled with experimental therapies and special protocols, thus they continue on their path without knowing the real severity of the situation. However, the deterioration of their health becomes inevitable, their body speaks to them, and we as healthcare professionals find ourselves having to confront this reality' (P1 – Woman – 53)
Bridging the Gap: Ethical and Legal Communication with Caregivers	'There are multiple motivations that drive family members or even the patient themselves to take certain positions within a family or caregiving context. We often focus on the patient's perspective, but it's important to address the ethical issue when the patient expresses a desire not to inform their family, such as their spouse or child. On the other hand, there are situations where there are constant requests for information from family members eager to be close to the sick person. This raises further ethical questions and could open new chapters of reflection on this complex topic' (P14 – Man – 60)
Addressing Uncomfortable Questions: Managing Patient Discomfort	'Questions about death are often directed at us physiotherapists, mainly for a quantitative reason - we are the profession that spends the most time directly in close contact with the patient. We are the ones who, in terms of minutes per week, spend the most time with them, and you find yourself being asked questions like: What is life? What is death? Why illness? Why me specifically? How should I face it? And well, it's not easy at all' (P9 – Man – 35)
	Theme 2: Balancing Hope and Realism in Patient and Caregiver Expectations
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Aligning Patient Expectations with Physiotherapist Goals	'For us too, often the lack of awareness of the diagnosis, when patients come to us, translates into the fact that they are referred to you. They are told, "go there, get rehabilitated, then come back to oncology and you'll do the next cycle of specific therapy." So, there's also, pardon the term, I'm being a bit blunt, but somewhat misleading communication, right? Toward the patient, in the sense that one thing is not explaining well what condition you have? And still fostering rehabilitative expectations that, unfortunately, we find ourselves in the position of having to somewhat downplay. Downplay, however, in a way, being very careful because if we go in too harshly, clearly, we devastate a person, I mean, our, maybe not taking care of the patient indirectly becomes communication, right? I mean, we don't say things, but if we don't then do them, we're saying things, I won't treat you. So, if you don't treat me, it means there's nothing to be done for me, so it becomes a very slippery slope on which we must work with the entire team' (P4 – Woman – 55)
Harmonizing Caregiver/ Family Expectations with Physiotherapist/Team Objectives	'The matter of rehabilitative treatment extending to the very end, even now of passing, is a complex and sensitive one. Typically, I assess each situation individually to determine whether to continue rehabilitation, but the decision isn't always mine alone. Sometimes, we may opt to continue passive mobilization even if the patient is in a coma, simply because the family wishes it, based on the patient's past enjoyment. The family's request to continue passive mobilization may stem from a desire to provide comfort, prevent pain, avoid stiffness, and alleviate discomfort from prolonged pressure on the anti-decubitus mattress. Even if clinical conditions suggest that rehabilitative treatment no longer offers direct rehabilitative benefits, as a physiotherapist, it can be challenging to refuse, considering the potential improvement in the patient's comfort and perceived quality of life. In such situations, our practice extends beyond traditional rehabilitation goals, addressing the emotional and relational needs of both the patient and their family. Thus, deciding whether to continue or stop rehabilitative treatment becomes a thoughtful consideration of how to compassionately meet these needs, even when direct rehabilitative benefits may be limited' (P2 – Man – 54)
	Theme 3: Weighing Efficacy and Safety in Cancer Rehabilitation
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Rehabilitation: Handling Clinical Outcomes and Risk Management	'For me, one issue is the presence of lytic bone metastases in oncology patients, because often the approach is not consistent for everyone. Let's consider a patient with a vertebral metastasis. In some cases, they'll tell you they can move and walk, while in others, they'll say no, they need a brace before they can walk. So, the approach is always a bit inconsistent, and I find the same thing among my physiotherapist colleagues. Some keep the patient in bed or barely seated, while others, like me, try until the very end. Some are more cautious, while others take some risks. My focus is on recovery, whether it's going to the bathroom or taking a few steps in the room. But at least personally, I always try to accommodate the patient's needs, compatibly with the pathology, of course. Others choose to never take risk' (P20 – Woman – 34)

Advancing Research in Cancer Rehabilitation	'I'm unsure whether my research will truly help the patient or, conversely, just wear them out even more. Quite often, we ask the patient for additional appointments and to fill out long questionnaires. It leaves me grappling with the dilemma of how much the patient is truly engaging, consciously, in a research project. I always question whether, deep down, I'm really doing them any good. Then, there's already plenty of evidence on the effectiveness of physical exercise in all stages of oncological disease, from diagnosis to the terminal phase. But this evidence often doesn't translate into clinical practice. It's a dilemma that nags at me because I keep on with my research, yet there's a lack of resources to actually apply these findings. Many times, it feels like I'm researching just to advance my career, rather than genuinely for the patients' well-being' (P26 – Woman – 2)
	Theme 4: Decisions on Withdrawing Treatment
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Identifying Therapeutic Futility: Determining When Treatment Becomes Ineffective	'Often, we find ourselves facing numerous oncology patients, and the oncologist, perhaps out of a lack of courage or to avoid admitting failure, continues to propose extreme and unrealistic treatments. We wonder why they persist in offering such unrealistic proposals, especially when the patient is exhausted and can no longer bear further treatments, radiotherapies, or oncological therapies. This amounts to a case of therapeutic obstinacy, which becomes even more apparent in the pediatric context. In these cases, children are encouraged to play every possible card to win their battle, without realizing that they are sometimes overwhelmed with numerous treatments, including physiotherapy and often orthoses like braces or similar devices. We wonder: what is a child supposed to do when, in the end, they find themselves saying "enough, I can't take it anymore" after being subjected to so many treatments?' (P1 – Woman – 53)
Emotional Management in Treatment Withdrawal	'In this process, we often do well with some patients, while with others it's a bit more challenging. This might happen because they're young or they have high expectations, especially regarding physiotherapy itself. Maybe they've had positive past experiences and they're trying to hold onto those. When a strong bond is formed with the patient, it becomes difficult to halt the treatment, even if it might be necessary for the patient's benefit and in consultation with the entire team. There are sometimes obstacles in stopping the treatment, perhaps because I also need to gain more experience, so I find it hard to stop at the exact moment it would be right' (P19 – Man – 27)

non-transparent communication on these issues creates significant problems regarding patients' informed consent/disagreement and the legitimacy of therapies administered by professionals. Additionally, the interviewees noted that these issues became even more significant when family members or caregivers were involved, especially if diagnoses/prognoses were disclosed to them instead of the patient. In such instances, relatives might request to keep the patient unaware of this information to "protect them". However, this process adds complexity and difficulty to the physiotherapist's work, as they must continuously interact with an uninformed patient who might also inquire about their health condition. The interviewees reported that negotiating this delicate balance of what is said and left unsaid complicated the professional's relationship with the patient. As outlined in the subsequent theme, unclear and ineffective communication could also lead to issues and misunderstandings concerning patient and family expectations.

Theme 2: 'Balancing Hope and Realism in Patient and Caregiver Expectations'

The second theme addressed in this study revolves around managing patient expectations and navigating between hope and realism. Participants in the focus groups highlighted two critical issues: collaboratively shaping rehabilitation goals with patients to align with their expectations and supporting family members and caregivers in understanding achievable rehabilitation objectives. Throughout the focus groups, it became apparent that managing patients' expectations poses a complex challenge for physiotherapists. Participants emphasized that establishing clear and realistic communication with patients is necessary to ensure that their expectations align with the predefined therapeutic goals. The failure to create realistic expectations was perceived to lead to dissatisfaction, disappointment, and disillusionment. Nevertheless, it is equally crucial to synchronize caregiver and family expectations with the objectives of the physiotherapy team, fostering meaningful involvement and a shared comprehension of the patient's rehabilitation trajectory. The absence of such mutual understanding seemed to foster unrealistic expectations, potentially escalating into conflicts and challenges. This dual responsibility mandates meticulous management and a delicate equilibrium between hope and realism to optimize treatment efficacy and enhance overall patient welfare. This parallels the imperative to balance clinical efficacy and safety, a concept to be further elucidated in the subsequent theme.

Theme 3: 'Weighing Efficacy and Safety in Cancer Rehabilitation'

The third theme was created based on focus group participants' opinions concerning the challenge of balancing clinical effectiveness and safety in oncological rehabilitation. According to the participants, this issue significantly impacts rehabilitation practice and rehabilitative outcomes based on the chosen approach. Some participants noted that opting for a more cautious approach may be viewed as reducing risks for the patient, albeit potentially leading to reduced outcomes. Conversely, others stressed the importance of a more aggressive approach to achieve better results, even at the expense of increased risks for the patient. The risks the participants referred to included fractures in the presence of bone metastases or falls in patients with balance issues. Additionally, participants observed that these considerations extend to cancer rehabilitation research, where practitioners carefully assess the extent of risk-taking with patients and the degree to which a cautious approach should be adopted. The discussion on balancing clinical efficacy and safety in oncological rehabilitation naturally transitions to the complex issue of therapeutic relentlessness and treatment discontinuation. As professionals strive to maximize treatment outcomes for oncology patients, they are confronted with crucial ethical decisions regarding the continuation of therapies. The balance between seeking optimal results and ensuring patient safety thus becomes central in the context of the decision to continue or discontinue treatments. This sets the stage for the generation of the next fourth theme.

Theme 4: 'Decisions on Withdrawing Treatment'

The fourth theme generated in this study revolves around therapeutic futility and the emotional management of treatment withdrawal. This theme brings to the forefront critical considerations regarding treatment persistence and the challenging decisions associated with withdrawing care. During the focus groups, participants highlighted the hurdles related to therapeutic futility, stressing the importance of identifying signs indicating ineffective treatment and addressing the emotional repercussions linked to treatment withdrawal. Reflections on therapeutic futility and the perceived inefficacy of treatments underscore the need to balance pursuing therapeutic objectives and upholding the patient's dignity and quality of life. This consideration entailed addressing the ethical and emotional complexities that may arise during this process. Specifically, participants discussed physiotherapists' concerns regarding the management of pain, suffering, and disappointment in patients and their caregivers when the decision to withdraw treatments becomes necessary. This theme sheds light on the intricacies of clinical decision-making and underscores the importance of adopting an empathetic, patient-centered approach in navigating the conclusion of rehabilitative treatment.

Discussion

This study, situated within the framework of empirical or descriptive bioethics, investigates the bioethical dilemmas perceived by a group of Italian physiotherapists in the context of oncological rehabilitation. Through focus groups, we aimed to capture the bioethical issues recognized by these healthcare professionals. Our findings generated four themes: 'Challenges of (Non)-Disclosure in Diagnosis and Prognosis'; 'Balancing Hope and Realism in Patient and Caregiver Expectations'; 'Weighing Efficacy and Safety in Cancer Rehabilitation'; and 'Decisions on Withdrawing Treatment'. These themes reflect the nuanced ethical considerations that physiotherapists encounter, many of which are influenced by the unique socio-cultural context in Italy.

These themes align closely with the essential phases of the care relationship as outlined by Italian Law 219/2017: *treatment selection* (clinical appropriateness), *therapeutic proposal* (information-communication and consent or dissent), and *implementation of the intervention* (withholding or withdrawing) (see Table 5) (55,56). The care process in cancer rehabilitation, encompassing these phases, functions as a continuum where each stage intertwines with the next, presenting healthcare professionals with distinct bioethical challenges.

TABLE 5 - Tracing back the themes identified in the research to the fundamental components of the care relationship

Care Relationship	**1**	**2**			**3**	
	Treatment Selection	**Therapeutic Proposal (Information-Communication *and Consent or Dissent*)**			**Implementation of the Intervention (Withholding or Withdrawing)**	
Generated Themes	*Theme 3*	*Theme 1*		*Theme 2*	*Theme 3*	*Theme 4*
	Weighing Efficacy and Safety in Cancer Rehabilitation	Challenges of (Non)-Disclosure in Diagnosis and Prognosis		Balancing Hope and Realism in Patient and Caregiver Expectations	Weighing Efficacy and Safety in Cancer Rehabilitation	Decisions on Withdrawing Treatment
		Communicating the truth to the patient	The patient's questions of meaning			

In the Italian context, this regulation protects patient self-determination and the duty of healthcare professionals to provide clear information (55,56).

Healthcare professionals are required to inform patients about proposed treatments and obtain informed consent before proceeding. This legislation is particularly relevant in end-of-life or critical treatment contexts, guiding ethical practices aligned with patient self-determination. While the socio-cultural environment in Italy, with its conservative values, family-centered ethos, and Catholic influence, may shape the ethical challenges faced by physiotherapists, our study does not explore these specific influences (40,41). While this analysis suggests potential religious and cultural influences on bioethical decisions in cancer rehabilitation, we do not examine these specific influences, which could be explored in future studies. However, these cultural factors seem to particularly impact the second stage of the care relationship (Therapeutic Proposal), as detailed below, while having less influence on the first and third phases (Treatment Selection and Implementation of the Intervention).

Treatment Selection (Clinical Appropriateness)

Theme 3, 'Weighing Efficacy and Safety in Cancer Rehabilitation'

According to the ethical principle of beneficence, a good healthcare professional pursues the patient's well-being, which is understood as clinical good and encompasses the traditional goals of medicine and related professions: safeguarding health and preserving individuals' biological lives. The evaluation of the clinical case by the healthcare professional is historically based on a conscience that guides technical-professional skills toward the most effective treatment to counteract the pathology (20). Since every medical intervention entails risks and potential adverse effects, aspects of prudence also contribute to this assessment, aiming not to violate the ethical principle of non-maleficence, understood as the prohibition of causing harm to the patient. At the moment of decision-making, when selecting the treatments to propose to the patient, the healthcare professional must, therefore, identify the effective treatment within a framework where the clinical benefits outweigh the risks, recognizing the uncertainty of medicine and the individual response to the proposed intervention. This decision-making process becomes more complex when the patient is affected by oncological pathology since the balance between beneficence and non-maleficence can be dichotomous: on the one hand, the appropriate intervention may be the most prudent, given the vulnerability of the oncological patient; on the other hand, precisely because of the presence of cancer, it may be necessary to push as much as possible, considering that there is nothing worse than the progression of the disease and its outcome. What is interesting to note is that in this hermeneutical dilemma about clinically appropriate care, the examination of its ethical proportionality is fully relevant, demonstrating how clinical decisions are never devoid of moral significance: clinical reasoning and ethical reasoning are intertwined (28). Physiotherapists, by expressing this dilemma in the present study, demonstrated that the selection of treatments, especially in the oncological field, is not a matter solely reserved for physicians, involving rehabilitation professionals as well concerning their specific competencies.

Therapeutic Proposal (Information-Communication and Consent or Dissent)

Theme 1, 'Challenges of (Non)-Disclosure in Diagnosis and Prognosis' (Communicating the truth to the patient)

The transition from paternalism to informed consent is widely recognized and legally endorsed, yet often does not effectively reflect in clinical practice, where behaviors persist that, for the "patient's good", circumvent the principle of information disclosure. It is possible that a patient, in the healthcare professional's perspective, appears to waive this right, when this might not be the case, or the patient might be shielded by the healthcare professional, often in agreement with family members, to spare them unnecessary distress and the awareness of a condition that no one would ever want to confront.

For instance, the theme of (non)-disclosure in diagnosis and prognosis underscores the tendency among family members to request that healthcare providers withhold distressing information from patients (40). While intended to "protect" patients, this paternalistic approach can place physiotherapists in ethically complex situations where they must navigate between respecting patient autonomy and complying with family wishes—a practice deeply rooted in Italian tradition (40). These instances highlight the importance of culturally sensitive communication strategies that honor individual rights and collective family ethical principles.

If physiotherapists raised this issue in this theme, it is to highlight its prevalence and impact in clinical routine, especially within oncological healthcare settings. The ethical dilemma is real, as it raises the question of whether or not to inform the person in whose care (the healthcare provider, the family members) they are placed. However, professionals also expressed concern about proceeding without the assurance that the patient is fully aware of their health condition, fearing they might create a distorted representation of reality, thereby invalidating treatment consent (29). The ethical problem intensifies in the consideration that someone might actually be substituting for the patient and their will, as well as in the fear of violating legal principles and norms requiring valid informed consent before any intervention (57). From this latter perspective, healthcare professionals' defensive stance is understandable, caught between the duty to recognize the ethical principle (and related legal norms) of patient autonomy and the relationship with the strong presence of family members.

Theme 2, 'Balancing Hope and Realism in Patient and Caregiver Expectations'

When a physiotherapist communicates with a patient regarding an oncological diagnosis and its prognosis, this communication should occur within a context of full understanding and transparency, in alignment with the information already provided by the physician. However, the physiotherapist cannot avoid confronting complex moral issues even in this scenario, as highlighted in this theme. The truth may sometimes be at odds with the patient's expectations, potentially leading to disappointment. This discrepancy can arise from an uncertain prognosis or a desire to offer moral support (30). Similarly, the challenge of balancing hope and realism (Theme 2) also reveals cultural nuances within the Italian healthcare setting. Physiotherapists frequently take on a dual role, supporting patient optimism while managing expectations around treatment outcomes (31). In Italy, preserving patient's optimism is paramount, often requiring physiotherapists to carefully balance transparent communication with a compassionate approach that aligns with ethical principles (45). This dual responsibility reflects a broader societal preference to maintain hope and protect patient morale, which may sometimes contrast with more transparent healthcare models in other contexts (31,45). By addressing these ethical dilemmas, our study underscores the need for a patient-centered approach that integrates ethical sensitivity into clinical decision-making and fosters collaboration between patients, families, and healthcare professionals. Physiotherapists are guided to make ethically sound decisions that integrate professional standards and the socio-cultural context in which they operate (22,24,25,28). Such considerations highlight the importance of ethics training that includes ethics, especially in cancer rehabilitation settings where patients and families face challenging choices (21).

Like other healthcare professionals, physiotherapists found themselves balancing the conveyance of hope with a realistic view of the situation. However, a critical question emerges among physiotherapists: where does the boundary lie between authentic hope and illusion?

Implementation of the Intervention (Withholding or Withdrawing)

Theme 3, 'Weighing Efficacy and Safety in Cancer Rehabilitation'

In cancer rehabilitation, balancing efficacy and safety requires careful assessment of the patient's clinical condition and potential complications (58). Rehabilitation approaches range from more cautious strategies, which minimize risks but may limit benefits, to more aggressive interventions that, while potentially improving functional outcomes, expose patients to greater dangers, such as fractures or falls in cases of bone metastases or balance deficits (58). This dynamic between clinical benefit and potential harm (principle of beneficence vs. non-maleficence) confronts physiotherapists with complex ethical decisions.

A critical element is the oncological context, where safety is paramount but must be considered in light of quality of life and patient expectations (59–61). In particular, physiotherapists find themselves managing the delicate balance of providing treatments that are not only physically safe but also psychologically beneficial, respecting patient preferences. Consequently, the role of the physiotherapist extends beyond rehabilitation to incorporate broader considerations of what efficacy and safety mean for both the patient and their family, who may often desire intensive treatment even when the benefits are uncertain (58).

Furthermore, this discussion extends to research in the field of cancer rehabilitation, where physiotherapists and researchers must grapple with the dilemma of risk in clinical experimentation (62). On the one hand, research aims to optimize rehabilitation approaches, but on the other, it may be challenging to balance this objective with respect for patients' conditions and vulnerabilities (62). The lack of resources or specific protocols for cancer rehabilitation can further limit achieving optimal clinical outcomes without compromising safety (58,62).

Finally, in deciding whether to continue or withdraw a rehabilitative intervention, the continuous evaluation of efficacy and safety is essential (60). Physiotherapists may be reluctant to withdraw from treatment, especially with patients who respond positively or express high expectations for improvement. However, persisting in treatment without concrete benefits can turn intervention into therapeutic obstinacy, moving away from a patient-centered approach (37). In this context, open dialogue with the patient and family is essential to share an understanding of the treatment's risks and limitations, thereby ensuring an informed choice that respects the patient's dignity.

Theme 4, 'Decisions on Withdrawing Treatment'

Physiotherapy stands out from many other areas of medicine for the lack of a clear endpoint (21). It is a territory where the line between the necessary continuation of treatment and its conclusion becomes blurred. Patients might perceive further therapeutic sessions as beneficial, and the physiotherapist might share this belief (21). Although discontinuing rehabilitative intervention does not equate, in terms of fatal consequences, to the decision of Withdrawing Life-Sustaining Treatment, physiotherapists still consider it ethically problematic. The central issue concerns the actual utility of rehabilitation: how can we determine whether it is providing significant benefits to the patient or, conversely, if it is futile, unnecessary, and potentially harmful? In some cases, there are older or terminal patients who might not be fully aware and upon whom physiotherapists perform rehabilitative interventions, even though they know such interventions will not lead to the recovery of their motor functions and might even be perceived as bothersome by the individual. However, the general belief persists that rehabilitation cannot harm, primarily if its intent extends beyond restoring physical functions and encompasses a moral aspect (37). This concept raises questions for physiotherapists about ensuring that their practice is always genuinely beneficial to themselves and society. They are also concerned with the fear of abandoning the patient, especially if their training does not include palliative approaches or a broader view of rehabilitation that considers care's psychological, social, philosophical, and spiritual aspects (30,32,63).

Strengths and Limitations

This study offers valuable insights into the unique bioethical challenges faced by physiotherapists in cancer rehabilitation, an area that has received limited attention in the bioethics literature. By focusing on this specific professional group, our study contributes to a better understanding of the ethical landscape within multidisciplinary cancer care, highlighting complex issues related to the ethical principles of self-determination, beneficence, non-maleficence, and justice and equity in the rehabilitation context.

However, several limitations should be acknowledged. Firstly, the study is limited to a single country, Italy, where the specific socio-cultural and religious context—characterized by predominantly conservative values, a strong family-centered decision-making ethos, and Catholic influences—may shape the ethical perspectives encountered. This cultural specificity could limit the transferability of our findings to other settings; however, given similar social and cultural norms in various European countries, the results may still offer relevant insights for comparable contexts.

Additionally, despite efforts to recruit a diverse participant pool, the study includes only white physiotherapists from northern Italy, potentially overlooking the perspectives of professionals from different ethnic backgrounds, regions, or underrepresented communities within Italy. This demographic limitation points to a need for future studies that encompass a broader range of backgrounds to capture the full spectrum of ethical concerns within cancer rehabilitation.

Furthermore, our study exclusively reflects the perspectives of physiotherapists, and we recognize that these may not fully align with those of patients, caregivers, or other healthcare professionals. Given that patient views on ethical issues could provide a more rounded understanding of these challenges, future research incorporating patient perspectives would be valuable.

Methodologically, the use of online focus groups enabled wider geographic participation and the inclusion of diverse viewpoints; however, this approach has inherent limitations. Online discussions may restrict the depth of non-verbal communication and subtly impact group dynamics, as participants might feel more reserved in discussing sensitive topics. Future studies might consider combining online and in-person methods to enhance the richness of participant interaction. In summary, while these limitations suggest caution in transferring our findings, this study started to fill a notable gap in existing research. By centering on physiotherapists' experiences, it sheds some light on bioethical issues specific to rehabilitation in oncology, which could inform both practice and ethical training in the profession.

Conclusion

This study explored the perceived bioethical concerns in cancer rehabilitation as expressed by Italian physiotherapists, highlighting key issues such as the selection of treatment approaches, patient self-determination, and informed consent or dissent, the balance between providing hope and maintaining realistic expectations, and the complexities around discontinuing care. These bioethical considerations echo the broader literature on ethical challenges in healthcare, suggesting that physiotherapists, like other health professionals, face nuanced ethical dilemmas in their practice (27,33). These findings underscore the need for ethical sensitivity in clinical reasoning, affirming that decision-making in physiotherapy extends beyond technical considerations to involve moral and ethical reflection.

Given the ethical complexities identified in this study, there are clear implications for education and training within the field. Integrating bioethical principles, effective communication techniques, and shared decision-making into physiotherapy training could enhance practitioners' preparedness for the ethical challenges of oncological rehabilitation. Moreover, adopting an interdisciplinary approach within training programs would promote collaborative, ethically sound decision-making in practice. This enhanced focus on ethics within education would support physiotherapists in balancing empathy with clinical transparency and safety, ultimately strengthening their ability to engage patients and families in a respectful, patient-centered manner. Although the cultural context of Italy could shape our findings, they offer valuable insights that may inform bioethical practices in similar healthcare settings. Future research should consider patient and caregiver perspectives to further illuminate these issues, as well as cross-cultural studies to assess the transferability of our findings. Expanding this research could contribute to ethically informed, patient-centered approaches to cancer rehabilitation worldwide.

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Study 4

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Research

Physiotherapists prioritise compassionate and patient-centred care while navigating systemic constraints and ethical dilemmas in cancer rehabilitation: a mixed-methods study

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KEY WORDS

Bioethic
Cancer rehabilitation
Physical therapy
Patient autonomy
Ethical decision-making

ABSTRACT

Question: How do physiotherapists address bioethical issues in cancer rehabilitation? What drives physiotherapists' clinical actions regarding non-disclosure, patient autonomy, risk-benefit balance and treatment withdrawal? **Design**: A mixed-methods study with an explanatory sequential design. **Participants**: 681 Italian registered physiotherapists recruited via the National Federation of Physiotherapists' Registers. **Intervention**: An online survey assessed physiotherapists' ethical responses, followed by focus groups with participants whose survey responses aligned with key bioethical principles: beneficence/non-maleficence, self-determination, justice/equity, defensive prudence and compassionate care. **Outcome measures**: Quantitative data identified bioethical principles adherence patterns, while qualitative analysis explored the reasoning behind these ethical stances. **Results**: Quantitative findings highlighted compassionate care as the most emphasised principle (29%), followed by self-determination (26%) and defensive prudence (23%). Beneficence/non-maleficence (16%) and justice and equity (6%) were less prioritised. Qualitative analysis identified five themes: functional recovery as dignity ('clinical good is the patient good'), patient autonomy ('patient knows better'), equity concerns ('everyone deserves care'), risk aversion ('it's better not to take risks') and the relational nature of care ('relationships can heal'). The mixed-methods integration showed how physiotherapists balance ethical ideals with systemic constraints, highlighting the importance of care equity, not underscored by the sole quantitative data. **Conclusion**: Physiotherapists working in cancer rehabilitation prioritise compassionate and patient-centred care while facing systemic constraints, risks and professional responsibilities. This study offers a framework for future research internationally and on other healthcare professionals. **[Bertoni G, Patuzzo Manzati S, Conti V, Testa M, Battista S (2025) Physiotherapists prioritise compassionate and patient-centred care while navigating systemic constraints and ethical dilemmas in cancer rehabilitation: a mixed-methods study. *Journal of Physiotherapy* 71:192–199]**

Introduction

Cancer is a leading cause of death globally, with 20 million new cases and 9.7 million deaths in 2022.[1] Advances in early detection and treatment have improved survival rates, shifting focus to enhancing quality of life and addressing long-term physical, cognitive and psychological effects.[2,3] Rehabilitation, including physiotherapy, is now recognised as essential in reducing cancer-related fatigue, improving functional outcomes and ensuring long-term well-being.[4–7]

Physiotherapy in cancer management introduces specific challenges, particularly when addressing the needs of patients nearing the end of life.[8] These patients often require specialised care due to the complex interplay of emotional, psychological and existential concerns that require an examination of the ethical challenges of this multifaceted care.[9] The specific bioethical dimensions of physiotherapy in cancer care remain underexplored in the literature compared with other healthcare professionals.[10,11]

Italy is particularly relevant for investigating these issues due to its distinctive socio-cultural and healthcare context.[12] With approximately 3.7 million people living after a cancer diagnosis—equivalent to 6.2% of the population—and an annual increase in prevalence of 1.5%, Italy faces a growing demand for long-term cancer care.[13] Coupled with a well-established national public healthcare system that ensures widespread access to oncological treatments and rehabilitation services, these factors make Italy a relevant framework for exploring the ethical dimensions of cancer rehabilitation. Given the increasing incidence of cancer and the presence of similar healthcare models in many countries, the insights from this study may be

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valuable for an international audience beyond Italy.[14] Moreover, its predominantly conservative values, strong Catholic traditions and family-centred decision-making dynamics create a unique environment in which ethical challenges in cancer rehabilitation unfold.[15]

Given the complex interplay of emotional, psychological and existential concerns in cancer rehabilitation, particularly for patients nearing the end of life, this study aimed to explore how physiotherapists navigate these ethical dilemmas.

Therefore, the research questions for this mixed-methods study were:

1. How do physiotherapists address bioethical issues in cancer rehabilitation?
2. What drives physiotherapists' clinical actions regarding non-disclosure, patient autonomy, risk-benefit balance and treatment withdrawal?

Method

Design

This study employed a mixed-methods approach to comprehensively examine the ethical dimensions of physiotherapy in oncology.[16] The research design followed an explanatory sequential design, which involved two phases. In the quantitative phase, an online survey was conducted to collect data on physiotherapists' responses to bioethical dilemmas in cancer rehabilitation. In the subsequent qualitative phase, focus groups were conducted to explore the reasoning behind the ethical choices identified in the quantitative phase.

The quantitative findings guided the strategic selection of participants for the qualitative phase, enabling a focused exploration of the reasoning processes and contextual factors underlying ethical decision-making. This approach allowed for a complementary analysis of both numerical trends and in-depth contextual insights, ensuring a thorough understanding of the ethical challenges faced by physiotherapists in cancer rehabilitation. The study adhered to the Declaration of Helsinki and was reported following the Good Reporting of a Mixed Methods Study (GRAMMS) checklist and the Checklist for Reporting Results of Internet E-Surveys (CHERRIES).[16,17]

Participants

Participants were Italian registered physiotherapists recruited through an online survey distributed via the mailing lists of the National Federation of Physiotherapists' Registers (FNOFI). In Italy, FNOFI is the national regulatory body for physiotherapists, and registration is mandatory to practice. To be included in the study, participants had to be included in the FNOFI and have treated at least one cancer patient in the past 3 years.

Intervention

Quantitative data were collected through an online, self-administered e-survey created using a secure web application[a] compliant with the European General Data Protection Regulations (Regulation (EU) 2016/679). The questionnaire, developed and administered in Italian for linguistic and contextual appropriateness, included clinical vignettes addressing bioethical dilemmas such as patient autonomy, risk-benefit balance, and the emotional and ethical complexities of discontinuing care when treatment is no longer beneficial. These vignettes–––validated tools for assessing healthcare professionals' clinical reasoning and behaviour–––presented realistic ethical scenarios that physiotherapists may encounter in cancer rehabilitation.[18,19] Respondents selected their preferred course of action from multiple-choice responses structured around five fundamental bioethical principles (beneficence/non-maleficence, self-determination, justice/equity, defensive prudence and compassionate care), developed in collaboration with a bioethicist (SPM). These principles, extensively discussed in bioethics literature, are presented in Table 1 and served as a framework for analysis, acknowledging that other groupings may be equally valid.[20,21] To ensure transparency, an English-translated version is provided as Appendix 1 on the eAddenda, which explicitly outlines the bioethical profiles associated with the responses. However, to prevent bias and ensure an authentic assessment of their ethical inclinations, this information was unavailable to participants during the survey. The survey was distributed exclusively via the FNOFI mailing lists, ensuring controlled access. Before dissemination, the questionnaire was pre-tested by 10 physiotherapists, leading to minor revisions for clarity and relevance. Participants could review and modify responses before submission, but no changes were allowed after completion. The survey did not randomise question order or use adaptive questioning, and no measures were implemented to prevent multiple responses.

For the qualitative phase, participants from the survey who consented to follow-up were selected based on their alignment with specific bioethical principles outlined in Table 1 (consistent responses in $> 50\%$ of scenarios). This purposive selection ensured that each focus group included individuals with well-defined ethical perspectives, allowing for an in-depth exploration of the reasoning behind their ethical decision-making. Respondents who agreed to participate provided their email addresses for further contact.

Focus group guides were developed using open-ended questions based on existing literature on cancer rehabilitation and reflecting the ethical principles that guided the survey design (Appendix 2 on the eAddenda).[22] Details regarding the background and expertise of the researchers involved in the qualitative phase are also provided in Appendix 2. The focus groups were conducted online using commercial videoconferencing software[b], with only the moderators (GB and SPM) and participants present. No prior relationships existed between the moderators and participants, ensuring impartiality.

Each session was recorded, transcribed verbatim using the software's automatic transcription feature and manually checked for accuracy. Recordings were stored in a secure commercial cloud storage service[c] folder provided by the University of Genoa, accessible only to the research team, and were permanently deleted after transcription. To ensure confidentiality, participants were anonymised as 'Participant 1', 'Participant 2', etc, based on the chronological order of the focus groups. This anonymisation was the only information shared among participants during the sessions. Data analysis was conducted after transcription, ensuring a thorough examination of the qualitative insights.

Outcome measures

The study employed both quantitative and qualitative outcome measures to explore how physiotherapists address bioethical issues in cancer rehabilitation. The primary outcome was the prevalence of bioethical principles guiding physiotherapists' decision-making; it was assessed through the online survey, where participants responded to clinical vignettes structured around the principles outlined in Table 1. The secondary outcome was the underlying reasoning and contextual factors influencing ethical decision-making, which were explored through focus groups with participants whose survey responses strongly aligned with specific bioethical principles. This qualitative phase provided deeper insights into how physiotherapists navigate ethical dilemmas, balancing patient autonomy, risk-benefit considerations and systemic constraints.

The integration of quantitative and qualitative data allowed for a comprehensive analysis, ensuring both the identification of prevalent ethical principles and a nuanced understanding of the reasoning behind clinical decisions in cancer rehabilitation.

Data analysis

The analysis of data followed the explanatory sequential mixed-methods design, with distinct approaches for the quantitative and qualitative phases, followed by their integration.

Table 1
Bioethical principles and their application in healthcare.

Principle	Application in healthcare
Beneficence/non-maleficence	Healthcare providers have a duty of care, while patients have a duty of self-care. This paternalistic approach assumes that the concept of good, understood as clinical outcome, is uniform for both parties; thus, consultation with the patient may be deemed unnecessary. However, involving vulnerable patients in decision-making processes might complicate achieving the ethical aim of care, namely: preserving biological life.
Self-determination	Recognising that perceptions of good are subjective, patients have the right to be informed and make decisions regarding their treatment based on their individual quality of life preferences.
Justice/equity	Emphasising fair access to care and responsible allocation of healthcare resources to avoid patient discrimination and disparities.
Defensive prudence	Balancing patient safety with the need to protect oneself from potential accusations or criticisms, healthcare providers adopt a prudent approach that may involve minimal intervention or, conversely, unnecessary intervention depending on the circumstances.
Compassionate medicine	Fostering a caring relationship through empathy, compassion and emotional support, healthcare providers prioritise patient well-being and advocacy.

Quantitative data analysis

Descriptive statistics were calculated using frequencies, percentages, means and standard deviations for closed survey questions. Respondents were categorised based on the rehabilitation setting where they practised: orthopaedics/traumatology, neurology, oncology/palliative care, cardiopulmonary, sports, geriatrics and paediatrics. This classification was adopted to examine response patterns based on clinical environments and patient populations. Results were summarised using tables and figures to illustrate key trends.

Qualitative data analysis

Focus group data were analysed using Braun and Clarke's reflexive thematic analysis, an approach suited to exploring patterns of meaning in participants' motivations and reasoning.[23] The analysis was conducted inductively within a constructionist epistemology with semantic coding to reflect participants' explicit perspectives. The six steps of reflexive thematic analysis were followed, and no software was used for coding. Further methodological details are provided in Appendix 3.

Integration of data

The integration process followed a structured approach. The quantitative phase identified prevalent bioethical principles among physiotherapists, informing the selection of participants for the qualitative phase. Qualitative data provided in-depth insights into the reasoning behind these ethical positions, enriching the interpretation of quantitative findings. This methodological integration ensured a comprehensive understanding of ethical decision-making, balancing numerical trends with experiential perspectives. Further details on the integration process are available in Appendix 4.

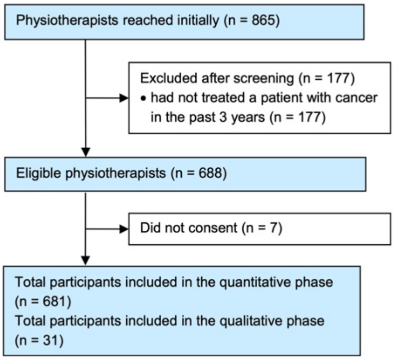

Figure 1. Flow of participants through the quantitative and qualitative phases of the study.

Results

Flow of participants through the study

A total of 865 physiotherapists received the invitation link and decided to complete the survey between March and June 2024. Of these, 177 were ineligible and 7 declined to enter the study (Figure 1). The demographic characteristics of the remaining 681 participants are presented in Table 2.

Compliance with trial method

All participants who met the inclusion criteria completed the online survey, ensuring a high level of compliance with the quantitative phase. The survey was designed to prevent changes to responses after submission, and no measures were implemented to prevent multiple responses from the same participant. For the qualitative phase, all 31 participants who were contacted based on their alignment with specific bioethical principles agreed to participate in the focus groups, demonstrating full compliance with the qualitative phase. The focus groups were conducted as planned, with no drop-outs or deviations from the protocol.

Bioethical issues management

Compassionate care (29%) was the most emphasised principle, followed by self-determination (26%), defensive prudence (23%), beneficence/non-maleficence (16%), and justice and equity (6%) (Table 3). Similar patterns were observed across clinical settings (Table 3).

Table 2
Demographic characteristics of the participants in the quantitative phase of the study.

Characteristic	(n = 681)
Age (*y*), mean (SD)	44 (12)
Female, n (%)	492 (72)
Geographical area, n (%)	
northern Italy	486 (71)
central Italy	108 (16)
southern Italy and islands	87 (13)
Subdiscipline, n (%)	
orthopaedics/traumatology	420 (62)
neurology	329 (48)
oncology/palliative care	194 (29)
cardiopulmonary	93 (14)
sports	64 (9)
geriatrics	297 (44)
paediatrics	65 (24)

Table 3
Prevalence of bioethical principles prioritised by physiotherapists in cancer rehabilitation.

Physiotherapy subdiscipline	Percentage of physiotherapists emphasising each ethical principle (%)				
	Beneficence/non-maleficence	Self - determination	Justice/equity	Defensive prudence	Compassionate medicine
Orthopaedics/traumatology	17	24	6	24	30
Neurology	17	25	6	24	29
Oncology/palliative care	15	27	5	23	30
Cardiopulmonary	18	24	5	22	31
Sports	15	21	8	24	32
Geriatrics	16	27	5	23	29
Paediatrics	16	24	7	25	28
All respondents	16	26	6	23	29

Qualitative data results

Five focus groups were conducted between October and November 2024 with 31 participants, including 16 women and 15 men, with a mean age of 44 years (SD 12) (Table 4). All participants were physiotherapists, with all but one originating from northern Italy. All of the contacted participants agreed to participate in the study.

The focus group analysis identified five main themes, each shedding light on the underlying motivations guiding physiotherapists' actions in cancer rehabilitation. These themes are further exemplified by participant quotes, as presented in Table 5, which provides illustrative excerpts for each category.

The first theme was 'clinical good is the patient's good: expertise to restore functionality', which highlights physiotherapists' focus on beneficence and non-maleficence. Functional recovery was seen as key to dignity and social participation, enhancing quality of life. Participants emphasised avoiding harm (*primum non nocere*) and relied on professional knowledge to guide decisions. By relying on their expertise, physiotherapists sought to bridge the gap between clinical objectives and patient expectations, ensuring effective and safe care.

The second theme was 'patient knows better: respecting autonomy to personalise care', which underscores the principle of self-determination as central to ethical practice. Physiotherapists viewed patients as active participants in their care, emphasising respecting their values and preferences. Collaboration and therapeutic negotiation were described as essential strategies for constructing treatment pathways that aligned with individual needs while maintaining professional responsibility. Even in cases where patients refused treatment, participants demonstrated a commitment to respecting these decisions.

Table 4
Demographic characteristics of the focus group participants.

Focus group topic	Participant	Age	Gender	Region
Beneficence/non-maleficence	P01	30	man	north
	P02	36	man	north
	P03	62	woman	north
	P04	54	woman	north
	P05	42	woman	north
	P06	42	woman	north
	P07	40	man	north
	P08	42	woman	north
Self-determination	P09	61	man	north
	P10	46	man	north
	P11	29	woman	north
	P12	54	man	north
	P13	61	woman	north
	P14	39	man	north
Justice/equity	P15	37	woman	north
	P16	27	man	north
	P17	57	woman	north
	P18	35	woman	north
	P19	36	man	north
Defensive prudence	P20	44	woman	north
	P21	44	woman	north
	P22	35	man	north
	P23	52	woman	north
	P24	24	man	north
	P25	35	man	north
Compassionate medicine	P26	29	man	north
	P27	71	man	central
	P28	57	woman	north
	P29	52	woman	north
	P30	42	woman	north
	P31	58	man	north

The third theme was 'everyone deserves care: equity in access and treatment quality', which reflects a strong commitment to justice and equity. Physiotherapists expressed the importance of equitable distribution of resources, particularly in ensuring continuity of care across different settings and patient demographics. They recognised their social responsibility as advocates for fairness, working to address systemic barriers and reduce inequalities in treatment delivery. Participants emphasised that every patient deserved access to high-quality rehabilitation services regardless of socioeconomic or geographical circumstances. This perspective framed their efforts to prevent disparities and ensure that care was distributed in a manner that upheld the principles of fairness and inclusion.

The fourth theme was 'it's better not to take risks: protecting the patient and the professional', which highlights physiotherapists' cautious approach in their practice. Defensive prudence guided their actions, with clinical guidelines serving as a foundation for safe and effective decision-making. Participants relied on evidence-based practices to minimise errors and protect patient outcomes and professional integrity. Avoiding high-risk decisions was a recurring concern, particularly when interventions lacked robust evidence. Managing patient expectations also emerged as a critical element, with physiotherapists striving to foster realistic understandings of treatment potential to prevent misunderstandings and build trust. This theme illustrates the intricate balance between adhering to standardised protocols and addressing each patient's unique needs.

The fifth theme was 'relationships can heal: compassion as a therapeutic driver', which brings to light the relational dimension of physiotherapy in oncology. Compassion was described as a therapeutic driver, with empathy forming the foundation of meaningful connections between physiotherapists and their patients. Participants emphasised the importance of adapting care to individual needs, particularly in end-of-life contexts where the focus shifted toward comfort and overall well-being. Even when curative treatments were no longer an option, physiotherapists prioritised interventions that preserved dignity and alleviated suffering, underscoring their commitment to holistic care. This theme illustrates how compassion supports patients emotionally and enhances the therapeutic alliance, fostering a sense of trust and shared purpose.

Integration of findings

The integration of quantitative and qualitative findings represents the core analytical phase in mixed-methods research, ensuring that numerical trends align with and are enriched by in-depth participant narratives. This study employed an explanatory sequential mixed-methods design, where the qualitative phase provided interpretative depth to the quantitative results. The integration process followed a structured approach, examining points of convergence, divergence and elaboration between datasets.

Convergence between quantitative and qualitative data

The survey results indicated that compassionate care was the most emphasised bioethical principle (29%), followed by self-determination

Table 5
Defined codes for the generated themes with examples of quotes.

Beneficence/non-maleficence	Theme 1: Clinical good is the patient's good: expertise to restore functionality	
	Centrality of functional recovery	'Rehabilitation must enable a person to achieve the best possible autonomy because this allows them to be part of society, build relationships, and live a dignified life. (P07 - Man, 40 y) 'I think function is the core of our work. Improving physical function enables the patient to still feel like a person, not just defined by their illness.' (P06 - Woman, 42 y) 'Autonomy is dignity. If we can help a patient regain even a small part of their autonomy, we are doing something significant for their quality of life.' (P08 - Woman, 42 y) 'Functional recovery is not just a clinical goal; it's the way we can give patients the opportunity to be active members of their community and family.' (P05 - Woman, 42 y)
	Prioritising the principle of *primum non nocere*	'My goal is not to do harm. At worst, I may not be able to help, but I will not harm. For me, this is non-negotiable: causing harm is never acceptable.' (P08 - Woman, 42 y) 'It wouldn't feel natural for me to do something that could cause harm. It's as if it's written in our code of ethics: I can't do it, I shouldn't do it, and it's not an option for me.' (P05 - Woman, 42 y) 'Causing long-term harm results in negative consequences for the patient in terms of pain and function. That's why I'm unwilling to implement something that I know could cause harm.' (P08 - Woman, 42 y) Even if a patient asks me to treat a specific area, if I know that treatment could be harmful, I won't do it. My job is to determine the best way to provide care without compromising the patient.' (P07 - Man, 40 y)'
	Confidence in professional knowledge	'Physical physiotherapists know what is good for the patient, by virtue of their educational and scientific background. We have a responsibility to guide clinical decisions, based on our experience.' (P08 - Woman, 42 y) 'I cannot let clinical decisions be completely delegated to the patient. My role is to use professional knowledge to direct toward the clinical good, even when it is not intuitive to the patient himself.' (P05 - Woman, 42 y) 'The knowledge we have acquired is critical to making choices that are truly beneficial. Our job is to translate that knowledge into clinical practice that brings measurable results.' (P07 - Man, 40 y) 'Our professional training makes us responsible in making decisions for the good of the patient. It is our knowledge that must guide care, even when the patient may not fully understand the implications of the choices.' (P01 - Man, 30 y) 'I believe that confidence in our professional knowledge is essential, especially when we have to explain to the patient why a certain treatment is the best choice. Science guides us in what we do.' (P01 - Man, 30 y)
Self-determination	Theme 2: Patient knows better: respecting autonomy to personalise care	
	Recognising the patient as an active subject	'The principle of self-determination is fundamental in clinical practice, because I realise that what I think as a physical therapist is not always in line with what the patient wants. My role is to listen to him and adapt the treatment accordingly.' (P12 - Man, 54 y) 'My job as a physical therapist is to propose my vision, but it is up to the patient to decide if that proposal is acceptable to him. He has to make the final decision.' (P10 - Man, 46 y) 'If the patient is informed, clear about what he or she wants, and actively participates in the decision-making process, this allows his or her autonomy to be respected. Any decision must be the result of sharing between the patient and me.' (P13 - Woman, 61 y) 'The patient's quality of life is central, and only the patient can say what living well means to him. My responsibility is to listen to him, to understand what is important to him, and to adapt treatment to these needs.' (P14 - Man, 39 y)
	Collaboration and therapeutic negotiation	'My task is to suspend my judgment and listen to the patient's goals, because only in this way can I build with him a rehabilitation path that truly respects his needs.' (P12 - Man, 54 y) Participant 14: 'Self-determination always meets with the responsibility and skills of the practitioner. My responsibility is to explain to the patient and then agree together on the treatment path.' 'I always try to tailor the treatment according to the patient's needs, making sure that he or she feels like a protagonist of his or her path, not just a passive recipient.' (P10 - Man, 46 y)
	Respect for the refusal of treatment	'I respect the patient's wishes, but at the same time I ask the patient why he refuses, why he refuses today. If he has strong reasons, absolutely yes, I respect. If it's no and I don't feel like it anymore, you probably need to reason with him to understand the reasons.' (P13 - Woman, 61 y) 'If the patient expresses his refusal, we need to respect that. But it is also important that he understands the consequences of this choice, because sometimes he does not realise what he is rejecting.' (P14 - Man, 39 y) 'Even if a patient refuses, it is still my job to respect his decision. If his choice is strong and justified, I respect it without trying to force it. If the refusal is not justified, I try to clarify the reasons, but in the end the decision is always up to the patient.' (P10 - Man, 46 y)
Justice/equity	Theme 3: Everyone deserves care: equity in access and treatment quality	
	Equitable distribution of resources	'My work on the ground makes me realise how often there are difficulties in accessing care. The goal is to make the treatment pathway as accessible as possible, trying to ensure continuity, even when patients have to move from the hospital setting to the home setting.' (P16 - Man, 26 y) 'A terminal patient's quality of life must be respected, even if it means doing what is possible with limited resources. Every patient deserves continuity of care, regardless of their stage of illness.' (P15 - Woman, 37 y) 'For me, equity lies in devoting my best efforts to each patient, making no distinction of time or importance, and always doing the best I can, based on each person's needs.' (P19 - Man, 36 y)
	The social responsibility of physiotherapists	'My work must ensure that no one is left behind. This principle of justice and fairness must be carried forward in every treatment, trying never to discriminate.' (P16 - Man, 26 y) 'When I work with a patient, I feel responsible not only for him, but also for the benefit my intervention can bring to society. Each rehabilitated person contributes to collective improvement.' (P19 - Man, 36 y) 'My role, it is not just individual work, but it has a social impact. My commitment goes beyond the individual patient, trying to ensure that everyone, regardless of economic conditions, has fair access to care.' (P15 - Woman, 37 y)
	Prevention of inequalities in treatment	'In my work I try to avoid making treatment dependent on the patient's social or economic status. Every person, regardless of status, deserves to receive the best we can offer.' (P15 - Woman, 37 y) 'We cannot allow differences between patients. Every person has the right to access care, and we must ensure that no one is excluded or forgotten.' (P18 - Woman, 35 y) 'In time management it is crucial to be fair, treating every patient with equal dedication, regardless of when they arrive or what they require. The important thing is not to leave anyone behind.' (P19 - Man, 36 y)

Table 5. Continued

Defensive prudence	Theme 4: It's better not to take risks: protecting the patient and the professional	
	The importance of compliance with guidelines	'When I work, I never do without guidelines. They give me a solid foundation and allow me to operate safely, without taking unnecessary risks. It is a protection for me and for the patient.' (P23 - Woman, 52 y) 'Guidelines are crucial because they minimise the risk of errors. When I am unsure about a treatment, I always refer to the evidence and guidelines to proceed more safely.' (P24 - Man, 24 y) 'It makes me feel safer to know that I am following a well-established protocol. This allows me to reduce the risk of making mistakes and protect the patient from unintended harm.' (P23 - Woman, 52 y) 'Simply, by following the guidelines I can minimise the risk of making mistakes. It is not a matter of rigidity, but of protecting the patient and myself from possible complications.' (P24 - Man, 24 y)
	Avoiding high-risk decisions	'Rather than taking a chance on things that I risk not knowing duly, I prefer to avoid mistakes that perhaps could be avoided with a little more caution' (P24 - Man, 24 y) 'I prefer not to risk proposing treatments without being 100% sure that they are appropriate, to avoid harming the patient or worsening his condition' (P20 - Woman, 44 y) 'I don't feel like doing actions that are not supported by evidence or shared reasoning with the team.' (P23 - Woman, 52 y) 'Why should I risk harming the patient and consequently risk harming myself?' (P23 - Woman, 52 y)
	Management of patient expectations	'Managing patient expectations is crucial. They need to be informed realistically about what they can expect from the treatments, to avoid misunderstandings that can lead to conflict.' (P24 - Man, 24 y) 'I always try to be clear with the patient, explaining what we can realistically get out of the treatment. This helps to avoid unrealistic expectations and build a trusting relationship.' (P23 - Woman, 52 y) 'Often patients have expectations that are not compatible with the reality of treatment. I try to educate them about what is possible to achieve, to avoid frustration later.' (P22 - Man, 35 y) 'Explaining to the patient what they can expect from treatment is crucial. If we don't, we risk unrealistic expectations, which inevitably leads to disappointment and conflict.' (P24 - Man, 24 y)
Compassionate medicine	Theme 5: Relationships can heal: compassion as a therapeutic driver	
	Empathy as a therapeutic driver	'In oncology, I often feel powerless from the standpoint of treating the disease, but the empathic aspect is key to supporting patients, making them feel understood and helped, despite the difficulties.' (P26 - Man, 29 y) 'Empathy is the way to create a true therapeutic alliance with the patient. When he understands that we are doing this together, even the simplest treatment can become much more effective' (P29 - Woman, 52 y) 'When I work with cancer patients, I feel that empathy is the key to being able to connect with them. It's not just physical treatment, but emotional support to help them cope with the disease.' (P28 - Woman, 57 y) 'In all stages of treatment, but especially in the most difficult ones, my empathy toward the patient becomes the starting point to be able to do something more, which is not only physical, but also emotional.' (P30 - Woman, 42 y)
	Adaptation to the patient's needs	'Every patient has different needs, and my job is to figure out how I can adapt to help him live better, even when I can't cure the disease.' (P26 - Man, 29 y) 'The physical therapist cannot be rigid, he must always be adapted to what the patient expresses, what he really needs, both physically and emotionally.' (P29 - Woman, 52 y) 'Not everyone reacts the same way. When I work with them, I focus on what they themselves feel is the best path to deal with the disease.' (P28 - Woman, 57 y) 'We cannot apply equal treatment to everyone, especially in end-of-life cases. Each patient requires a different approach, based on his or her history, wishes and needs.' (P30 - Woman, 42 y)
	Priority to comfort and overall well-being	'Even if I cannot cure the disease, my goal is to improve the patient's quality of life, ensuring the greatest possible comfort.' (P26 - Man, 29 y) 'Even in the most severe cases, where recuperation is not possible, my main goal is to make sure the patient is comfortable, minimising pain and improving their quality of life.' (P29 - Woman, 52 y) 'Patient comfort is at the centre of my intervention: the reduction of physical pain is important, but often it is also psychological support that can make a difference.' (P28 - Woman, 57 y) 'The patient's quality of life, especially in treatment, must be at the centre of my intervention. If I cannot cure the disease, my goal is to ensure comfort and overall well-being.' (P30 - Woman, 42 y)

(26%), defensive prudence (24%) and beneficence/non-maleficence (16%). Justice and equity received the lowest emphasis (6%). These findings provided a broad perspective on how physiotherapists prioritise ethical principles in cancer rehabilitation. The qualitative data largely confirmed these patterns, reinforcing the significance of compassionate care and self-determination. Focus group participants consistently emphasised the relational nature of physiotherapy, highlighting the importance of empathetic engagement and the necessity of adapting care strategies to individual patient needs. Additionally, participants elaborated on the nuances of self-determination, explaining that patient autonomy was often challenged by practical constraints such as institutional policies, family expectations and clinical guidelines.

Explanation of quantitative clusters through qualitative insights

The quantitative analysis categorised participants into groups based on their predominant ethical orientation. The qualitative phase sought to understand why individuals aligned with specific principles and whether these classifications reflected their lived experiences. These categories are presented in Box 1.

Areas of divergence and unexpected findings

Despite general alignment between quantitative and qualitative findings, some discrepancies emerged. Notably, the survey data suggested minimal emphasis on justice and equity (6%). However, qualitative discussions revealed a deeper concern about disparities in access to rehabilitation services. While justice and equity were not explicitly prioritised in the quantitative responses, participants' narratives implicitly recognised systemic barriers and resource limitations. This suggests that ethical justice-related concerns may be underreported in structured survey formats but become more apparent in open-ended discussions. Additionally, while quantitative findings positioned defensive prudence as a distinct principle, qualitative analysis revealed that caution was often interwoven with other ethical motivations, particularly beneficence. Many participants framed their cautious decisions not as purely defensive but as efforts to balance risk with patient well-being.

Coherence between quantitative clustering and qualitative explanations

The integration of findings confirmed that the grouping of participants based on survey responses was broadly consistent with their

Box 1. Categories of participants based on their predominant ethics orientation.

- Compassionate care advocates: Participants in this group described a deep commitment to humanising care. Their survey responses corresponded with focus group narratives that emphasised patient-centred approaches, particularly in palliative settings where emotional support was as critical as physical rehabilitation.
- Self-determination supporters: Participants who prioritised self-determination in the survey elaborated on the complexities of implementing this principle. They acknowledged that while patient choice was central, they often had to navigate tensions between clinical recommendations and patient preferences.
- Defensive prudence practitioners: This group demonstrated a cautious approach, with focus group discussions revealing that institutional constraints, fear of litigation, and clinical uncertainty shaped their conservative decision-making.
- Beneficence/non-maleficence adherents: Participants aligned with this principle often described an internal struggle between their duty to prioritise patient well-being and the ethical dilemmas posed by withholding or withdrawing interventions.

qualitative narratives. The focus groups provided depth and context, helping to explain why participants fell into specific ethical orientations. Moreover, they revealed that ethical decision-making is dynamic rather than rigidly compartmentalised. Many physiotherapists exhibited fluid ethical reasoning, shifting between principles depending on patient needs, clinical contexts and institutional constraints.

Discussion

Using an integrated quantitative and qualitative approach, this study offers a detailed analysis of the ethical challenges faced by physiotherapists in cancer rehabilitation. Compassionate care (29%) and self-determination (26%) were the most emphasised principles, reflecting a focus on empathy and patient autonomy. However, qualitative findings revealed that compassion was often constrained by systemic pressures like time and resource limitations, aligning with international studies on ethical distress.[24]

The quantitative emphasis on compassionate medicine is reflected in the qualitative theme 'relationships can heal', where physiotherapists described empathy as central to their therapeutic approach. However, despite its recognised importance, participants reported that emotional support could become secondary to functional recovery in resource-limited settings. The inherently hands-on nature of physiotherapy fosters a privileged therapeutic connection, as physical touch and close interaction create opportunities for deeper emotional engagement and trust-building.[25] This aspect of physiotherapy may explain why compassionate medicine is so strongly emphasised in ethical decision-making within this field.

Similarly, the high prioritisation of self-determination in the quantitative phase aligns with the theme 'patient knows better'. While physiotherapists value autonomy, qualitative data reveal tensions between respecting patient preferences and adhering to clinical guidelines, highlighting the complexities of implementing this principle in practice. This dual perspective highlights that bioethical principles are not fixed, abstract concepts but rather flexible and must be adapted to the realities of clinical practice, where patient needs, professional responsibilities and institutional constraints often interact. The findings of this study regarding physiotherapists' choices driven by defensive prudence and resource limitations highlight the need for multi-level interventions to bridge the persistent gap between ethical ideals and clinical realities in cancer rehabilitation.[18]

The quantitative results highlighted defensive prudence (23%) as a significant driver of clinical decisions. While this principle reflects a commitment to minimising risks and safeguarding patient safety, it also reveals the influence of medico-legal (professional responsibility) concerns on practice. The qualitative theme 'it's better not to take risks' illustrates how this principle translates into cautious, protocol-driven approaches that may hinder innovative or patient-centred care. This tension between caution and flexibility recurs in healthcare ethics, highlighting the need for decision-making frameworks that balance professional responsibility with legal and institutional constraints. Fear of litigation and liability concerns have been widely documented as key drivers of defensive practices, often prompting clinicians to prioritise risk-avoidance strategies at the expense of patient-centred innovation.[24,26]

The underrepresentation of justice and equity in the quantitative findings is particularly notable, given the ethical imperative to ensure fair access to care. This could suggest that physiotherapists do not always perceive systemic disparities as a primary concern in their daily practice, possibly because they focus primarily on individual patient care. However, the qualitative theme 'everyone deserves care' reveals that, when reflecting on their experiences, many practitioners recognise significant barriers—such as geographical disparities and resource constraints—limiting equitable treatment delivery. This discrepancy suggests that while justice and equity are critical ethical principles, their practical implementation is often hindered by structural obstacles beyond clinicians' direct control. International literature on oncology supports these findings, documenting significant inequalities in rehabilitation access based on socioeconomic status and regional availability.[27,28] Addressing these disparities requires systemic changes, including policy reforms and targeted resource allocation, to support equitable care delivery.[29]

Limitations of this study included the sample's restriction to Italian physiotherapists, potentially limiting generalisability, and a focus on northern Italy, which may have overlooked regional differences. Self-reported data may have introduced social desirability bias, and the explanatory sequential design may have constrained some qualitative themes. Future research should explore these ethical challenges in broader geographical and professional contexts, incorporating observational methods to complement self-reported data.

In conclusion, this study comprehensively explored the ethical complexities faced by physiotherapists in cancer rehabilitation, revealing a persistent tension between ethical ideals and the constraints of real-world clinical practice. The findings highlight that physiotherapists are committed to compassionate and patient-centred care, yet are often constrained by systemic limitations such as defensive prudence, resource shortages and disparities in access to rehabilitation. This study offers a foundation for broader international investigations, adopting a novel methodology co-created by physiotherapists and philosophers to explore the ethical dilemmas in different healthcare systems, comparing how diverse regulatory, cultural and institutional factors shape clinical decision-making.

What was already known on this topic: Physiotherapists play a crucial role in cancer rehabilitation, addressing physical, emotional and psychological challenges. However, the ethical dimensions of their practice, particularly in balancing patient autonomy, risk-benefit considerations and systemic constraints, have been underexplored. Previous studies have highlighted the importance of patient-centred care and compassion, but there has been limited research on how physiotherapists navigate bioethical dilemmas in cancer rehabilitation.
What this study adds: This study provides a comprehensive analysis of how physiotherapists address bioethical issues in cancer rehabilitation, revealing a strong emphasis on compassionate care and patient autonomy. It highlights the tension between ethical ideals and systemic constraints, such as resource limitations and defensive prudence. By employing a mixed-methods approach, the study offers a structured framework for understanding ethical decision-making in cancer rehabilitation, with implications for improving equitable care delivery and informing future research across different healthcare systems.

Footnotes: [a] Microsoft 365 Forms, Microsoft, Redmond, WA, USA.
[b] Microsoft Teams, Microsoft, Redmond, WA, USA.
[c] OneDrive, Microsoft, Redmond, WA, USA.

eAddenda: Appendices 1 to 4 can be found online at https://doi.org/10.1016/j.jphys.2025.03.007

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Study 5

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Title: How people with cancer experience the ethical dimensions of physiotherapy in cancer rehabilitation: a qualitative interview study

Short Title: Ethical Dimensions of Oncological Rehabilitation

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Abstract

Introduction: Cancer rehabilitation is increasingly recognised as a core component of cancer care, yet little is known about how people with cancer perceive its ethical dimensions. This study explored how patients experience autonomy, safety, equity, and relational care within physiotherapy-led cancer rehabilitation.

Methods: We conducted a qualitative interview study using Reflexive Thematic Analysis. Twenty adults with a previous cancer diagnosis who had received physiotherapy related to cancer rehabilitation within the past three years were purposively sampled to maximise variation in age, gender, diagnosis, stage, care setting, and geographical area. Interviews were conducted online, audio-recorded, transcribed verbatim, anonymised, and analysed inductively from a constructionist, experiential perspective.

Results: Five themes captured ethically salient aspects of rehabilitation experiences: (1) struggles for meaningful participation, where involvement in decisions was sometimes limited despite rhetoric of autonomy; (2) balancing safety and control, where professional caution was experienced as both protective and at times over-restrictive; (3) unequal access as systemic injustice, with geography, logistics, and poor information affecting access to services; (4) empathy and emotional presence, which fostered trust, dignity, and motivation; and (5) limits of standardised care, where rigid protocols and time pressure risked depersonalisation unless offset by flexibility. Participants did not view rehabilitation as a merely technical intervention, but as an ethically charged practice shaped by everyday interactions, organisational contexts, and opportunities for agency.

Conclusions: People with cancer experience rehabilitation as an ethical as well as clinical practice. Flexible, dialogic, and equitable models of care may better support dignity, participation, and shared decision-making.

Keywords: Empathy; Ethics; Neoplasms; Patient Participation; Physical Therapy Modalities; Rehabilitation

- **What is already known about this topic:** Patients’ ethical perspectives on cancer rehabilitation are underrepresented. Evidence suggests tensions around autonomy, safety, access, and empathy, but most data come from clinicians rather than from patients’ lived experiences.

- **What does the study add:** For people with cancer, ethical tensions in rehabilitation are experienced through everyday physiotherapy practices such as assessment, goal setting, risk management, and relational engagement. The study highlights physiotherapists' central ethical role in negotiating safety, autonomy, and dignity within resource-constrained systems.

Introduction

Cancer remains a leading cause of mortality and long-term disability worldwide, with approximately 20 million new cases and 9.7 million deaths reported in 2022.[252,267] Advances in early detection and treatment have contributed to improved survival rates, shifting the focus of care towards the management of long-term sequelae, including persistent physical limitations, cognitive impairments, psychological distress, and disruptions in social functioning.[10,254] These multi-domain challenges often compromise people's autonomy, daily activities, and broader participation in society.[254,268,269] In this context, cancer rehabilitation has become integral to comprehensive cancer care, with demonstrated benefits in restoring function, improving symptoms, and supporting psychosocial adjustment.[15,103,256,270] As physiotherapy becomes increasingly integrated into oncological care pathways, attention has shifted towards the ethical complexities that arise in oncological clinical practice.[111,190,271,272] Physiotherapists working with individuals with cancer—especially in advanced or palliative stages—are routinely confronted with ethically charged decisions.[136,264] These include balancing therapeutic benefit against clinical risk, promoting patient autonomy while ensuring safety, and navigating systemic constraints without undermining compassion or fairness.[264]

Previous studies have highlighted recurring ethical tensions in this setting, including the balance between safety and efficacy, the challenge of truth-telling in sensitive situations, the emotional labour of care, and the perceived limitations of rehabilitation itself.[136,264,273] However, the patient perspective remains markedly underrepresented in the international literature, as little is known about how individuals receiving cancer rehabilitation interpret the ethical dimensions of their care. Qualitative research has increasingly explored the experiences of people with cancer in cancer rehabilitation, highlighting its role in restoring physical function, quality of life, and a sense of normalcy after or alongside oncological treatment.[274,275] Previous studies have documented challenges related to symptom burden, fatigue, adherence, and access to services, as well as the emotional and relational dimensions of rehabilitative care.[276–278] However, much of this literature has focused on outcomes, service organisation, or patient satisfaction, rather than on how people themselves interpret rehabilitation encounters in ethical terms.[279,280] In particular, the ethical dimensions of everyday rehabilitation practices—such as participation in decision-making, negotiation of safety and risk, equity of access, and relational care—remain underexplored from the patient's perspective, especially within physiotherapy-led cancer rehabilitation.[257,272] Addressing this gap is relevant not only because rehabilitation is increasingly recognised as a core component of cancer care, but also because physiotherapy involves sustained, embodied, and relational engagement with patients over time, positioning physiotherapists at the intersection of technical expertise and everyday ethical practice.[281]

Building on these findings, this qualitative study investigated how core principles of medical ethics—such as autonomy, beneficence, non-maleficence, and justice—are manifested within rehabilitation encounters from the patient's perspective. These findings may provide preliminary insights relevant to clinicians, policymakers, physiotherapists, and researchers by highlighting the cultural and systemic factors influencing access, equity, and ethical dimensions of cancer rehabilitation.

Methods

Study Design

This qualitative interview study aimed to explore patients' perceptions of ethically relevant aspects encountered during cancer rehabilitation.[282–285] From an ethical perspective, this type of research falls under the domain of *descriptive ethics*, as it investigates individuals' moral views, concerns, and experiences without prescribing normative judgments.[286] The study was conducted in accordance with the principles of the Declaration of Helsinki and approved by the University of Genova Research Ethics Committee (Comitato Etico per la Ricerca di Ateneo – CERA; 2025/53). All participants provided written informed consent and were assured of anonymity and confidentiality throughout the study.

We adopted a qualitative methodology grounded in a Reflexive Thematic Analysis (RTA) as described by Braun and Clarke.[159,287] The study was reported in line with the Consolidated Criteria for Reporting Qualitative Research (COREQ) - Supplementary File 1.[288]

Participants and Recruitment

We recruited adult participants (aged ≥18 years) with a previous diagnosis of cancer who had undergone physiotherapy as part of their cancer rehabilitation within the past three years. This timeframe was chosen to ensure sufficiently vivid recall of ethically salient rehabilitation experiences while capturing a recent period of healthcare delivery and organisational practice. We employed a purposive sampling strategy to ensure variation in terms of gender, age, cancer type and stage, and the type of rehabilitation received (e.g., hospital-based, outpatient). This approach aimed to capture a broad spectrum of experiences relevant to the research question.[289] Participants were identified through the researchers' professional network, rehabilitation services, and patient associations. Patient associations involved in recruitment were non-profit organisations supporting people with cancer and their families at the local level (e.g. Medea – Medicina e Arte). Their role supported facilitating initial contact with potential participants by disseminating information about the study; they were not involved in study design, data collection, analysis, or interpretation. Inclusion criteria were the ability to provide informed consent and experience with physiotherapy explicitly related to cancer care. The sample size was determined using the concept of information power, rather than the commonly used but methodologically inappropriate notion of data saturation for reflexive thematic analysis (RTA).[158] Given the researchers' expertise in qualitative methods and bioethics in cancer rehabilitation, the strong theoretical underpinnings of the study, the specificity of the research question, and the purposeful sampling strategy adopted to ensure diversity in participants' experiences, an estimate of 15-20 participants was considered appropriate to yield conceptually rich and analytically relevant data.[290]

Data Collection

An open-question-based interview guide (Table 1) was developed to explore the perspectives of people with cancer on ethically relevant aspects of physiotherapy within cancer rehabilitation.[264] The guide was designed collaboratively by a physiotherapist experienced in cancer rehabilitation and qualitative research (GB), in consultation with a philosopher with expertise in bioethics (SPM) and with methodological input from SB. Relevant information about interviews facilitators and researchers' profiles can be found in Supplementary File 2 (Interviews facilitator's and researchers profiles). All three authors are trained in qualitative methodologies and have experience in conducting interview-based research in healthcare contexts.

The development and reporting of the interview guide were informed by established methodological recommendations for semi-structured qualitative interviews, including the framework proposed by Kallio et al., which emphasises alignment between research aims, use of prior knowledge, pilot testing, and transparent presentation of the guide.[295] In line with a reflexive and exploratory approach, questions were designed as flexible prompts rather than standardised items, allowing participants' experiential accounts to guide the interview.

The guide was structured around four thematic areas: patient involvement in decision-making, perceptions of clinical prudence and risk management, fairness in access to rehabilitation services, and the relational and emotional dimensions of care.[264] Each area included open-ended stimulus questions designed to elicit detailed, experiential narratives aligned with the research objectives.

To ensure that the questions were comprehensible and meaningful from the patient's point of view, the interview guide was reviewed by two individuals with lived experience of cancer and physiotherapy. Additionally, a pilot interview was conducted with a former oncology patient who had completed a rehabilitation programme.[291] This pilot interview served to test the clarity, acceptability, and emotional appropriateness of the guide and led to minor adjustments in wording to improve accessibility and relevance.

Individual interviews were conducted in June 2025 remotely via Microsoft Teams by GB, who had no prior relationship with any of the participants. Each interview lasted approximately 45 to 60 minutes and was audio-recorded with participants' consent. Transcripts were produced verbatim using the platform's automated transcription function and subsequently verified for accuracy by GB through comparison with the original recordings; salient para-verbal elements (e.g. pauses, sighs, hesitations) were noted when they contributed to the interpretation of meaning, in line with a latent reflexive thematic analysis. Participants were anonymised using sequential identifiers (e.g., 'Participant 1', 'Participant 2'), and no identifying information was shared beyond the interviewer. Audio files were securely stored on an encrypted, password-protected university server, accessible only to the research team, and were deleted after transcription and verification.

Data Analysis

We collected basic demographic information from participants, including age, gender, and geographic area of residence, to describe our sample. Data were analysed using RTA, following the six-phase procedure: familiarisation with the data, generation of initial codes, construction of themes, review of themes, definition and naming of themes, and report production (Table 2).[159] The analysis was conducted primarily inductively. Ethical concepts such as autonomy, safety, equity, and relational care were not used as predefined coding categories. However, we cannot rule out the possibility that perspectives from relational autonomy and the ethics of care were not adopted at the interpretive level. Therefore, ethical theory might have been unconsciously adopted to support sense-making and interpretation, rather than to structure or constrain theme development. This approach was chosen for its flexibility and its capacity to explore experiential and meaning-oriented data, particularly suited to the aims of this study.[292] More details on the analysis process through RTA can be found in Table 2 (six steps of RTA) & in Supplementary File 3 (Theoretical standpoint).

Results

A total of 20 people with cancer participated in the interviews (Mean Age: 53.5 ± 9 years; 12 women, 8 men) (Table 3). Participants were recruited from oncology rehabilitation centres across Italy, and all had undergone physiotherapy as part of their cancer rehabilitation within the past three years.
The sample included patients from the North (n = 10), Centre (n = 6), and South and Islands (n = 4), capturing regional variations in access and service delivery across the Italian healthcare system. A variety of cancer types were represented, including breast, colorectal, lung, prostate, lymphoma, and pancreatic cancers, alongside less frequent cases such as ovarian and head and neck cancers. Both early-stage (n = 9) and advanced-stage (n = 11) participants were included, providing insight into how ethical issues might shift across the illness trajectory. In this study, *early-stage* referred to individuals who had completed primary cancer treatments and were in a stable or remission phase, whereas *advanced-stage* referred to those living with metastatic or recurrent disease, including some who were receiving palliative or end-of-life care at the time of rehabilitation.

Settings of care also varied, with 11 participants receiving outpatient rehabilitation and 9 receiving hospital-based interventions. This diversity allowed the study to explore how structural, relational, and organisational dynamics manifest across different institutional contexts.

We developed five themes that capture how participants experienced and understood ethically salient aspects of cancer rehabilitation.
The five themes are:

6. ***Patients' Struggle for Meaningful Participation***
7. ***The Balance Between Safety and Control in Cancer Rehabilitation***
8. ***Unequal Access as Systemic Injustice***
9. ***Empathy and Emotional Presence***
10. ***Limits of Standardised Care***

The following sections detail each theme; quotations are embedded in the Results; additional excerpts are provided in Table 4.

Theme 1: Patients' Struggle for Meaningful Participation

Participants described rehabilitation decision-making as marked by tension and ambiguity. Although autonomy was frequently invoked within rehabilitation encounters, many participants experienced a gap between being formally informed and being genuinely involved in decisions about their care. Several accounts suggested that treatment plans were often perceived as predetermined, with limited space for patients' perspectives or preferences. As one participant noted, *"Sometimes I had the feeling that decisions were made for me"* (P01), while another stated, *"They told me what to do, they didn't ask me what I thought"* (P08). This sense of exclusion was reinforced when participants felt that decisions had already been finalised before their arrival, as expressed by P13: *"Everything was already decided when I got there."*

A key factor underpinning this experience was informational asymmetry. Participants often described receiving instructions without a clear understanding of the rationale behind them, which constrained their ability to engage meaningfully in shared decision-making. As P10 explained, *"In theory, there's a lot of talk about autonomy… but then you just end up following orders."* Similarly, P07 reflected, *"I didn't really understand what we were doing, I just trusted them."* In these accounts, trust in professional expertise coexisted with limited comprehension, resulting in a form of passive participation rather than active involvement.

At the same time, participants consistently acknowledged and valued physiotherapists' expert knowledge, which shaped how autonomy was enacted. For some, deference to professional authority initially felt appropriate and even reassuring. As P04 recalled, *"It felt like they knew everything, and I knew nothing."* Over time, however, some participants described a gradual shift toward greater confidence and engagement, learning that questioning and dialogue were possible within the therapeutic relationship: *"At first I said yes to everything, then I realised I could ask questions"* (P12).

Importantly, preferences regarding participation were not static. Several participants articulated ambivalence about decision-making, expressing a desire to be heard and involved without bearing full responsibility for choices. This highlights participation as a dynamic and context-dependent process rather than a fixed expectation. As P19 stated, *"I liked being involved... but I didn't want to have to decide everything myself."* Similarly, P06 noted, *"I want to be listened to, but I don't always have the energy to speak up."* These accounts illustrate how meaningful participation requires ongoing calibration, sensitive to patients' emotional resources, health status, and changing needs throughout the rehabilitation trajectory.

Theme 2: The Balance Between Safety and Control in Cancer Rehabilitation

Participants articulated a nuanced and often ambivalent experience of clinical caution within physiotherapy-led cancer rehabilitation. For many, prudence was initially perceived as a source of reassurance and protection during a period marked by physical vulnerability and uncertainty. Careful monitoring and adaptation of exercises fostered trust and a sense of being safely guided through recovery. As one participant noted, *"It gave me confidence to know that every exercise was carefully assessed"* (P01), while another reflected, *"I was scared, but knowing they were cautious really helped me"* (P14).

However, this sense of safety was frequently accompanied by frustration when caution was perceived as excessive or rigid. Several participants described feeling restrained by therapists' reluctance to allow progression, interpreting prudence as an obstacle rather than a support. As P10 observed, *"It felt like they were afraid to let me move too much,"*and P17 similarly stated, *"I would have liked to push myself a bit more, but they seemed held back."* In these accounts, protective intentions risked limiting opportunities for challenge, exploration, and the reclaiming of physical agency.

Beyond external constraints, some participants described internalising a climate of caution, leading to self-imposed limitations even when therapists encouraged advancement. Fear of causing harm persisted despite professional reassurance, shaping how participants engaged with rehabilitation tasks. As P20 explained, *"I was afraid of* *doing damage… even when the physio said I could do more,"* while P03 noted, *"I did the movements slowly, because I was afraid of making mistakes."* These experiences suggest that prolonged exposure to risk-averse messaging may influence patients' self-perception and behaviour, fostering caution that extends beyond clinical recommendations.

In other accounts, caution was interpreted less as individualised care and more as defensive practice, driven by perceived institutional pressures or concerns about liability. Participants sensed that therapists' decisions were sometimes shaped by fear rather than by a tailored assessment of their readiness. As one participant remarked, *"The physiotherapist seemed more concerned about covering themselves"* (P09), and another recalled being repeatedly told, *"Better not to take risks,"*even when feeling prepared to progress (P11). Such interpretations intensified feelings of vulnerability, as professional caution was experienced as distancing rather than supportive.

Overall, clinical caution was not experienced as a neutral or purely technical feature of rehabilitation. Instead, it was interpreted, embodied, and at times contested by participants. While prudence could convey care and respect, excessive or insufficiently explained caution risked constraining agency and reinforcing asymmetries within the therapeutic relationship. These accounts point to the ethical importance of negotiated safety, transparent rationales for clinical decisions, and calibrated challenge that aligns professional judgement with patients' evolving goals, capacities, and perceptions of risk.

Theme 3: Unequal Access as Systemic Injustice

Participants commonly described access to cancer rehabilitation as uneven, fragile, and contingent on factors unrelated to clinical need. Geographic location emerged as a primary determinant, with marked disparities across regions shaping whether and how rehabilitation could be accessed. These differences were not perceived as occasional shortcomings, but as structural inconsistencies within the healthcare system. As one participant stated bluntly, *"Don't call it a right to health if it depends on the postcode* *where you live"* (P09). Another contrasted their experience with that of a peer, noting, *"A friend of mine had a completely different pathway just because she lived in another region"* (P02).

Beyond territorial variation, participants highlighted financial and logistical barriers that further constrained access. Costs associated with transport, time off work, and administrative procedures added strain during an already demanding phase of recovery. For some, these burdens made attendance practically impossible without external support. As P05 explained, *"I couldn't afford the taxi to get to physiotherapy,"* while P14 noted, *"Without my daughter's help, I wouldn't have managed to go."* In these accounts, access to rehabilitation depended not only on service availability, but also on personal resources and social support.

Information gaps were described as a pivotal barrier. Several participants reported discovering oncology rehabilitation services by chance, rather than through structured institutional pathways. This lack of proactive communication reinforced the perception of rehabilitation as an optional extra rather than an integral component of cancer care. As one participant recalled, *"I found out about cancer rehabilitation by accident"* (P02), while another stated, *"No one ever told me about these possibilities in the hospital"* (P13). Such experiences contributed to feelings of abandonment, particularly during the vulnerable post-treatment phase.

In this context, informal personal networks often became the primary gateway to care. Access was frequently facilitated through acquaintances, friends within the healthcare system, or peer support groups, rather than through formal referral mechanisms. As P18 explained, *"A nurse who's a friend of mine told me about it... otherwise, nothing,"* and P15 similarly noted, *"Only thanks to the support group did I understand where to go."* Reliance on such networks further amplified inequities, privileging those with social capital, insider knowledge, or assertiveness.

Taken together, these recurring patterns across settings and diagnoses indicate that access to rehabilitation was perceived as shaped by geography, resources, and chance, rather than by equitable clinical criteria. Participants' attribution of barriers to organisational and policy-level factors supports an interpretation of these experiences not merely as individual hardship, but as manifestations of systemic injustice. In this sense, rehabilitation was often experienced as a privilege rather than a right, sitting uneasily with the rhetoric of equal access underpinning contemporary cancer care.

Theme 4: Empathy and Emotional Presence

For many participants, the presence—or absence—of empathy fundamentally shaped the rehabilitation experience. When physiotherapists were emotionally attuned, respectful, and genuinely present, participants described feeling supported beyond physical recovery, with increased motivation and trust in the therapeutic process. Conversely, when empathy was perceived as lacking or superficial, rehabilitation was experienced as mechanical, distant, or alienating, diminishing engagement and reinforcing a sense of being treated as a case rather than as a person. As one participant remarked, *"They were skilled, yes, but cold. Not even a look in the face"* (P10), while another reflected, *"Sometimes I felt invisible"* (P07).

Empathy was not understood primarily through verbal reassurance, but through subtle yet powerful relational cues. Participants emphasised the moral and emotional significance of non-verbal communication—such as tone of voice, gaze, posture, and touch—which conveyed attentiveness and care. Even within time-constrained settings, brief moments of relational presence were experienced as deeply meaningful. As P12 explained, *"Even just two minutes of talking made me feel human,"* and P06 similarly noted, *"We didn't have much time, but he used it well."* These accounts suggest that the ethical quality of care was not measured by the quantity of time available, but by how presence was enacted within it.

Participants also described empathy as a key driver of motivation and self-efficacy during rehabilitation. Feeling listened to and believed in by the physiotherapist encouraged greater effort and engagement, reinforcing a sense of agency in recovery. As one participant stated, *"When he listened to me, I felt like giving my best"* (P15), while another reflected, *"If I saw that she believed in me, I believed in myself"* (P01). In this sense, empathy functioned not only as an interpersonal quality, but as a therapeutic force shaping patients' confidence and commitment.

Some participants further reflected on perceived patterns in the expression of empathy, occasionally attributing greater emotional attunement to therapists' age or gender. These observations were not framed as universal claims, but as personal perceptions grounded in lived experience. As P04 commented, *"Younger female physiotherapists seemed more sensitive,"* while P19 noted, *"With a young male therapist, I felt more at ease talking about pain."* Such accounts highlight how empathy is experienced as both a relational disposition and a skill enacted within specific interpersonal contexts, suggesting that emotional presence is shaped by individual characteristics as well as by professional training and organisational culture.

Theme 5: Limits of Standardised Care

Participants frequently described rehabilitation as taking place within systems that prioritised standardisation over personalisation. Protocol-driven approaches were often perceived as insufficiently responsive to individual needs, rhythms, and circumstances, contributing to experiences of depersonalisation. As one participant observed, *"It felt like a fixed protocol—it didn't matter who I was"* (P03), while another remarked, *"Every patient has different needs, but there it was all the same"* (P09). In these accounts, standardisation was not criticised as a clinical safeguard per se, but as a practice that risked obscuring personal identity and lived experience.

Importantly, this rigidity was rarely attributed to individual physiotherapists. Instead, participants consistently located its origins in systemic pressures, including workload, staffing shortages, and organisational demands for efficiency. Therapists were often perceived as constrained by time scarcity and high patient turnover, which limited opportunities for relational engagement. As P11 explained, *"They were always rushing... there was never enough time,"* and P18 similarly noted, *"They did their best, but there were too many patients."* These reflections point to a shared awareness of structural strain, tempering blame toward clinicians while highlighting institutional responsibility.

Time and space emerged as ethically salient dimensions of care rather than mere logistical variables. Participants interpreted the availability of time and the quality of presence as moral signals of recognition and worth. Conversely, rushed interactions conveyed a sense of being undervalued. Environmental factors further reinforced this perception: frequent room changes, noise, and lack of privacy symbolised organisational fragmentation and invisibility. As one participant recalled, *"We changed rooms three times… it felt like moving house"* (P13), while another stated, *"There wasn't a space to do things calmly"* (P06). Such conditions shaped how care was experienced, often amplifying feelings of disconnection.

Despite these constraints, participants also recounted moments in which flexibility and collaboration restored a sense of fit and dignity. When physiotherapists adjusted plans in response to patients' energy levels, mood, or goals, care was experienced as personalised and ethically attentive. As P20 noted, *"They listened to me and adapted the programme to me,"* and P14 similarly reflected, *"We had a plan, but we adjusted it every week."* These instances demonstrated that even within standardised and resource-limited systems, small acts of adaptability and presence could counter depersonalisation and re-humanise rehabilitation.

Overall, participants did not seek perfection or unlimited time, but space—space to be heard, respected, and recognised as individuals. Their accounts suggest that the ethical quality of rehabilitation is shaped not only by protocols and resources, but by how clinicians navigate constraints through attentiveness, flexibility, and relational commitment.

Discussion

This study aimed to explore how people with cancer perceive ethical issues during cancer rehabilitation, with a particular focus on the role and approaches of physiotherapists. The findings reveal a complex web of ethical tensions—particularly concerning autonomy, risk, access to care, and relational dynamics—that shape the rehabilitation experience in ways that are deeply meaningful to patients. These insights highlight opportunities to strengthen ethical responsiveness within the therapeutic relationship, ensuring that rehabilitation practices remain grounded in professional standards while being sensitive to patients' values, needs, and lived experiences.

Notably, the sample included both people who underwent rehabilitation in more standardised hospital contexts and those who experienced it within outpatient, often more flexible, services. Overall, this heterogeneity enriched the qualitative dataset and helped surface a wide range of perspectives on ethical tensions in rehabilitation. It supported a nuanced understanding of how themes such as participation, caution, empathy, and access were experienced not as abstract principles, but in relation to real-life variables, including geography, clinical history, and organisational setting.

Before engaging with the specific ethical themes developed through analysis, it is important to highlight the profound meaning participants attributed to physiotherapy. Rather than being perceived as a technical adjunct, physiotherapy was often described as a transformative and essential part of care—a safe space in which individuals could reconnect with their bodies, restore dignity, and regain a sense of control. Participants depicted rehabilitation as central to their quality of life, not only physically but also emotionally and existentially. This symbolic value of physiotherapy shaped how ethical issues—including involvement in decision-making, professional caution, equity, and relational care—were understood and narrated.

Rather than treating ethics as a set of abstract principles applied to practice, our findings suggest that participants experienced rehabilitation as an ethical practice enacted through relationships, dialogue, time, and organisational arrangements. This interpretation aligns with relational accounts of autonomy and with ethics of care, which emphasise attentiveness, responsiveness, and the moral significance of everyday interactions.

While the experiences described here may resemble those reported in previous qualitative studies, our analysis shows that participants consistently interpreted these experiences through an ethical lens, attributing moral significance to everyday rehabilitation practices rather than to isolated clinical decisions.

A central theme was the tension between autonomy and paternalism in clinical decision-making. While patients acknowledged and respected physiotherapists' expertise, many felt sidelined or excluded from key decisions about their care. This pattern suggests that autonomy in physiotherapy is often enacted rhetorically rather than relationally, revealing a gap between formal consent and lived participation. These experiences echo longstanding concerns in the literature about the limited implementation of shared decision-making in physiotherapy, particularly when professional routines and time pressures dominate the care process.[127,296,297] Although some participants experienced more collaborative interactions, most felt their preferences were pre-empted by clinical protocols. This highlights the need to move beyond one-way information sharing toward more collaborative models of care—where clinical expertise and patient perspectives are integrated through transparent dialogue, negotiated flexibility, and mutual respect.[296] Moreover, respecting patient autonomy should not be conflated with abandonment.[119] Several patients expressed ambivalence: while they appreciated being involved in decisions, they also felt overwhelmed or unprepared to take full responsibility. This underscores the importance of calibrating patient participation based on individual capacity, clinical context, and emotional readiness—ensuring that involvement is meaningful without becoming burdensome.[209]

The results also shed light on a core ethical tension in physiotherapy: how to reconcile professional interpretations of beneficence—with their emphasis on caution and safety—with patients' autonomous understandings of what is meaningful and beneficial for their recovery, especially when protective approaches are perceived as excessive, rigid, or disempowering over time. Many expressed a desire to challenge themselves, reclaim agency, and push recovery boundaries—yet felt constrained by overly risk-averse attitudes. This resonates with literature emphasising the importance of "therapeutic challenge" in physiotherapy as a way to support not only physical progress, but psychological empowerment.[298] When patients are assumed to be fragile or incapable, the result may be a therapeutic environment of overprotection, leading to self-restrictive behaviours.[299] Some participants internalised caution even when physiotherapists encouraged progress, revealing how atmospheres of professional fear can influence patient identity and behaviour over time. Ethical rehabilitation requires that safety parameters be dynamically negotiated, considering both clinical rationale and patients' evolving perceptions of risk, effort, and resilience.[264]

From a clinical physiotherapy perspective, these ethical tensions translate into everyday decisions regarding assessment, goal setting, progression, and risk management. Participants' accounts highlight how initial assessment is not only a technical act, but an ethical encounter in which patients gauge whether their vulnerability, preferences, and capacities are recognised. Similarly, goal setting emerged as a moral practice: goals perceived as imposed or protocol-driven undermined engagement, whereas goals negotiated through dialogue fostered trust and motivation. Risk management, a core responsibility of physiotherapists, was experienced by participants as ethically meaningful when safety rationales were made explicit and open to discussion. Conversely, unexplained or rigid caution was interpreted as over-control or defensive practice. These findings suggest that ethical physiotherapy practice involves not the avoidance of risk per se, but its transparent negotiation, where clinical judgement is combined with patients' experiential knowledge of effort, fear, and readiness. Therapeutic decision-making in cancer rehabilitation thus appears as a situated, relational process rather than a purely technical application of protocols. Physiotherapists occupy a distinctive ethical position, as they work directly with patients' bodies, fatigue, pain, and fluctuating capacities, often across repeated sessions. This longitudinal, embodied engagement places physiotherapists at the centre of everyday ethical work, where attentiveness, adaptability, and calibration of challenge become integral to both clinical effectiveness and moral practice.

Access to care emerged as another urgent issue. Participants reported facing multiple barriers—geographical distance, financial constraints, and institutional fragmentation—that made rehabilitation difficult to access. In many cases, patients discovered available services only through informal channels, such as word of mouth, or by taking personal initiative. This lack of clear, proactive communication from healthcare institutions—a form of what we might call *informational neglect*—left several participants feeling unsupported or abandoned during a particularly vulnerable phase of their recovery. Participants' repeated accounts of unequal access across regions, reliance on informal networks, and attribution of barriers to organisational and policy-level factors support an interpretation of these experiences not merely as individual hardship, but as manifestations of systemic injustice.

In this context, the potential role of e-health and tele-rehabilitation deserves closer examination. Digital interventions could help mitigate geographic and logistical inequalities by improving continuity and decentralising access to care.[102,300] However, such solutions must be critically implemented: digital health is not automatically equitable.[301] Without investment in digital literacy, infrastructure, and patient support, technology risks replicating the very inequalities it seeks to solve.[21,301]

The therapeutic relationship was consistently described as the most critical element of the physiotherapy experience. Patients emphasised the value of empathy, presence, and emotional resonance. When these qualities were absent, care was perceived as mechanical and dehumanising. These findings align with existing research that links empathic communication to improved clinical outcomes, patient satisfaction, and engagement in oncology and physiotherapy.[302] Empathy was not limited to verbal expressions;[303] non-verbal cues—tone, touch, gaze—were often remembered as profound signs of care. This suggests that emotional presence is not ancillary to physiotherapy, but central to its impact.[22]

In participants' accounts, dignity was not described as an abstract value, but as something sustained—or undermined—through concrete relational practices, such as being listened to, having time, and being treated as a person rather than a case.

Training programs should reflect this by incorporating modules on relational competence, affective communication, and trauma-informed care alongside technical skills.[304,305]

Also, time emerged as more than a logistical constraint. Patients interpreted the availability and quality of time as an ethical signal of recognition and dignity. When physiotherapists were present, unhurried, and attentive—even briefly—patients felt valued. In contrast, rushed interactions were experienced as dismissive and impersonal.[306] While health systems continue to prioritise efficiency, research increasingly challenges the assumption that "fast" care is necessarily "better".[307] The real issue may lie in structural underfunding, staffing shortages, and burnout—all of which limit professionals' capacity for presence.[308] This creates a tension between individual ethical ideals and systemic limitations: patients need time to heal, yet professionals operate within resource-constrained environments where time is unequally—and often unfairly—distributed. Rather than judging this scarcity as inherently unethical, it can be understood as a challenge to distributive justice: how to allocate limited time fairly without undermining the relational quality of care.

In this context, discussions of ethical care must consider not only interpersonal dynamics but also institutional arrangements. Ethical care is not defined solely by patients or professionals, but is co-shaped by their interactions, contextual constraints, and broader societal choices—including policy decisions on resource allocation.[309] Closely related is the perception of rigidity and depersonalization within care structures. Patients described protocols as inflexible and inattentive to their uniqueness. While standardisation ensures safety, over-reliance on protocols can obscure human variation and reduce care to a checklist.[310] This critique aligns with broader literature calling for "value-sensitive flexibility," where protocols guide but do not dictate care.[311] Participants in this study recognised and appreciated when clinicians exercised discretion, adjusting plans weekly, responding to fluctuations in energy or mood. Such flexibility does not oppose professional standards; rather, it represents their ethical application.[312]

These reflections gain further weight when considered alongside insights from physiotherapists in comparable studies.[111,190,208,273]

Clinicians, too, report feeling constrained by systemic pressures such as time scarcity, inflexible protocols, and heightened risk aversion—yet they interpret these barriers through a professional lens. Where patients experience dismissal or over-control, therapists often describe overwork, insufficient support, and fear of legal consequences. This divergence reveals a relational disconnect: both groups are navigating the same system, but from different positions and with different stakes.

This raises a broader ethical and political question: who decides how care should be organised, and whose perspectives are included in shaping these decisions? Bridging this gap requires spaces not only for interprofessional dialogue, but also for participatory deliberation that involves patients and citizens in setting priorities, shaping guidelines, and even contributing to the formulation of professional codes and policies.[313]

Future research should expand beyond those who successfully accessed rehabilitation and actively seek out the voices of those who were excluded—whether due to geography, socioeconomic status, or lack of referral. Understanding these absences is essential to designing more inclusive and responsive care systems.

Taken together, these findings suggest that ethical rehabilitation requires more than goodwill on the part of individual clinicians. It demands a care infrastructure capable of listening, adapting, and redistributing power. Physiotherapists need not only technical and relational skills, but also ethical literacy and systemic awareness. Educational institutions and healthcare organisations have a responsibility to cultivate these capacities, while policy-makers must create the conditions for care models that recognise the patient not simply as a recipient of services, but as a partner in the moral and organisational architecture of care.

Several limitations of this study should be considered when interpreting the findings. As a qualitative inquiry conducted in selected regions of Italy, the results reflect a specific social and institutional context and are not intended to be generalised to all people with cancer or settings. Recruitment through professional networks and associations may have favoured participants who were more informed or engaged with rehabilitation pathways. Although most interviews were conducted remotely via

Microsoft Teams, this mode of interaction did not appear to hinder rapport or depth of reflection; participants were generally at ease and communicative. The sample was predominantly drawn from Northern and Central Italy, with limited representation from Southern regions and the Islands. As such, the findings primarily reflect experiences within these geographical contexts and should be interpreted with caution when considering national-level systemic disparities. Future research should specifically explore the perspectives of people with cancer in Southern Italy to better capture regional variations in access and rehabilitation experiences.

Conclusion

In conclusion, this study underscores the ethical relevance of designing cancer rehabilitation as a process that recognises patients as relational agents with diverse capacities, challenges, and priorities. Rather than suggesting that care should be shaped solely around individual preferences, the findings highlight the importance of developing flexible and dialogic models—within ethically and professionally grounded frameworks—that allow space for patient voices to be heard and considered meaningfully. When these findings are viewed alongside recent studies on physiotherapists' ethical perspectives in cancer rehabilitation, a striking convergence emerges: both patients and clinicians emphasise compassion, relational care, and the restoration of dignity, yet they interpret ethical tensions from different standpoints. Patients describe experiences of over-control or invisibility, whereas physiotherapists point to systemic constraints, defensive practices, and institutional risk aversion. Bridging these perspectives requires organisational and educational strategies that foster shared reflection, mutual understanding, and co-responsibility in clinical decision-making. For physiotherapists, this entails recognising assessment, goal negotiation, progression of exercises, and management of risk as ethically charged components of everyday practice, rather than as neutral technical steps. Ethical competence in cancer rehabilitation therefore includes the ability to explain clinical reasoning, negotiate safety, and adapt interventions responsively over time. Ultimately, cancer rehabilitation can be reframed as an ethical practice of reciprocity—

where patients and professionals jointly negotiate meaning, goals, and limits of care within systems that support responsiveness and justice.

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Authors contributor role

GB: Conceptualization – Data Curation – Formal Analysis – Investigation – Writing original draft - Writing review & Editing; SB: Conceptualization – Investigation – Methodology – Supervision - Writing review & Editing; VC: Investigation - Writing review & Editing; MT: Conceptualization – Project administration – Supervision - Writing review & Editing; SP: Conceptualization – Project administration – Supervision - Writing review & Editing.

Data availability statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Disclosures

Conflicts of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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Supplementary Materials

Supplementary n°1 – Scoping review protocol

The Role of Ethics in Physiotherapy: A Scoping Review Protocol
Short-run title: Ethics and Physiotherapy

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Conflict of interest statement of all authors: None to declare.

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Work Conception	GB, SPM, SB
Design of the work	GB, SPM, SB
Methodology Supervision	SB, MT
Search Strategy	GB, FP, SPM, SB
Abstract Screening	GB, FP, SB
Full-text Screening	GB, FP, SPM
Literature Mapping	GB, FP, SPM, SB
Analysis or Interpretation of the Data	GB, FP, SPM, SB
First draft writing	GB, SB
Paper Writing	GB, SPM, MT, SB
Language Revision	SB
Peer Review Process	GB, SB

GB – 11
SPM – 7
FP – 5
MT – 2
SB – 11

Abstract

Background and aims:

Ethical considerations play a crucial role in physiotherapy, influencing patient care, professional conduct, and clinical decision-making. Despite its significance, there is a limited comprehensive understanding of how ethical principles are applied in physiotherapy practice. The evolving nature of the field, alongside advancements in treatment approaches, presents new ethical challenges that require systematic investigation. This scoping review aims to map the existing literature on ethical issues within physiotherapy, identify research methodologies, and highlight knowledge gaps.

Method:

This review will follow the methodological framework proposed by the Joanna Briggs Institute (JBI) for scoping reviews and will be reported following the PRISMA for Scoping Reviews guidelines. A comprehensive search will be conducted on PubMed, Medline, Embase, CINAHL, PsychInfo, Cochrane Central, and Pedro. The gray literature will be consulted. Studies involving physiotherapists and those addressing ethical issues in physiotherapy practice will be included. Data extraction will be based

on a standardized form, and a narrative synthesis will categorize the ethical issues and principles.
Discussion:
The review will provide a broad overview of ethical issues and principles in physiotherapy. It will inform future research priorities, guide ethical training for practitioners, and support the development of policies and guidelines to improve ethical shared decision-making in physiotherapy practice.

Keywords:Ethics, Medical Ethics, Physiotherapy, Ethical Dilemmas, Bioethics, Scoping Review, Professional Conduct

1. Introduction

In physiotherapy, ethical considerations are necessary to deliver high-quality care and ensure shared decision-making and positive outcomes for patients[1]. Physiotherapists frequently encounter ethical dilemmas such as balancing patient autonomy with professional recommendations[2], managing conflicts of interest[3], addressing disparities in access to care[2,4], ensuring informed consent5, and navigating situations where the patient’s best interest may conflict with institutional policies or resources6. These dilemmas can significantly impact their practice and the patient experience[7–9].
In light of the frequent necessity to navigate these ethical dilemmas, ethics plays a crucial role in physiotherapy[7]. However, the intersection of physiotherapy and ethics seems to have not received sufficient exploration, and our understanding of typical ethical issues in rehabilitation contexts is limited. We know little about the ethical principles adopted in physiotherapy and the philosophical disciplines or theoretical frameworks utilized in the literature to address these topics [2,3,6,8–10]. Moreover, the evolving nature of physiotherapy practice, with advancements in treatment methods and a focus on patient-centered care, brings new ethical challenges that require careful consideration[7]. Hence, there is a need for a thorough examination of how these ethical issues are addressed in the literature.[7]. Moreover, the evolving nature of physiotherapy practice, with advancements in treatment methods and a focus on patient-centred care, brings new ethical challenges that require careful consideration[1,7,11].

1.1 Rationale for conducting a scoping review

While the importance of ethical considerations in physiotherapy has been established, specific insights into applying these principles in practice still need to be explored. There is a pressing need to explore the unique ethical dilemmas physiotherapists face in various rehabilitation contexts and the principles and frameworks that guide their decision-making. A comprehensive understanding of how ethical challenges are addressed in different settings could inform the development of practical guidelines and training programs on the importance of applying ethics in clinical-decision making. By examining existing literature through a scoping review, we can identify key themes, gaps, and emerging issues related to ethics in physiotherapy. This exploration will enhance our understanding of ethical practices and provide a foundation for improving clinical practice, ultimately benefiting patient outcomes.

A scoping review is particularly suited for this investigation due to several reasons:

1. Broad Overview of Existing Knowledge: A scoping review will allow us to map the existing literature on ethics in physiotherapy, providing a broad overview of the key ethical issues, themes, and challenges that have been identified.
2. Identification of Gaps and Emerging Issues: By systematically examining the literature, a scoping review can highlight areas where research is lacking or where ethical challenges are not yet fully addressed. This will inform future research priorities and guide the development of targeted studies that address these gaps.
3. Integration of Diverse Perspectives: Physiotherapy ethics intersect with various aspects of clinical practice, including patient care, professional behavior, and institutional policies. A scoping review will integrate perspectives from different sources, including empirical studies, theoretical discussions, and practical guidelines, providing a comprehensive view of how ethics are integrated into physiotherapy practice.
4. Foundation for Policy and Practice Improvements: Understanding the current state of knowledge on ethics in physiotherapy will contribute to the development of better guidelines, training programs, and policies. It will support physiotherapists in navigating ethical dilemmas more effectively and ensure that ethical considerations are embedded in everyday practice.
5. Enhancement of Professional Development: By clarifying the ethical issues faced by physiotherapists and how they are managed, this scoping review will contribute to the professional development of practitioners. It will help enhance ethical awareness and decision-making skills among physiotherapists, ultimately improving the quality of patient care.

In summary, conducting a scoping review on ethics in physiotherapy is essential for consolidating current knowledge, identifying gaps, and guiding future research and practice. This review will provide a valuable resource for practitioners, educators, and policymakers seeking to enhance ethical standards and practices within physiotherapy.

1.2 Aim and Objective

This scoping review aims to answer the research question: "What is known about the intersection of ethics and physiotherapy?" The specific objectives are to (1) map the existing literature on ethical considerations in physiotherapy, including typical ethical dilemmas, adopted ethical principles, and the theoretical frameworks used to address these issues, (2) identify the methodologies employed in studying ethical principles and challenges in physiotherapy, and (3) highlight any gaps in knowledge regarding ethical considerations in this field.

2 Material and methsods

This scoping review will adhere to the methodological guidance for scoping reviews of the Joanna Briggs Institute (JBI)[12]. The reporting will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRIMA-ScR)[13].

2.1 Research team

The research team comprises four physiotherapists and one philosopher, all with qualitative and/or quantitative research backgrounds. One of the physiotherapists holds a master’s degree in philosophy, and another is pursuing a PhD in bioethics applied to rehabilitation. Additionally, one physiotherapist has a PhD in neuroscience and medical science, serving as a methodologist to oversee the methodological rigor of the process underlying this scoping review. The philosopher in the group has completed a PhD in bioethics. This diverse composition ensures that all relevant areas of expertise and knowledge necessary for this scoping review are comprehensively covered.

2.2 Eligibility criteria

Studies will be considered eligible for inclusion if they meet the Population, Concept and Context (PCC) framework criteria proposed by the JBI[12].

2.2.1 Population

We will include studies focusing on physiotherapists as professionals and physiotherapy as a discipline. This includes research on:

- Physiotherapists: Studies involving physiotherapists as practitioners, exploring their ethical challenges, decision-making processes, and professional conduct.
- Physiotherapy Practice: Research examining ethical issues related to the practice of physiotherapy, including interactions with patients, treatment methods, and the application of ethical principles in clinical settings.

In summary, the population of interest is limited to physiotherapists and the ethical aspects of their professional practice. Studies focusing on other healthcare professionals involved in physiotherapy will be excluded unless the ethical issues pertain specifically to physiotherapists. Similarly, research from the patient’s perspective will only be included if it directly examines physiotherapists’ ethical conduct or decision-making processes.

2.2.2 Concept

The principal concept of interest is ethics and bioethics within the context of physiotherapy practice. Studies must address ethical issues, dilemmas, or principles as they pertain to physiotherapy and rehabilitation. Studies that focus solely on technical or procedural aspects of physiotherapy without addressing ethical dimensions will not be included. For instance, studies that examine only technical treatment methods or outcomes without considering their ethical implications will be excluded.

2.2.3 Context

No specific restrictions will be applied to the context, as we intend to investigate studies from all geographical locations with participants regardless of specific demographic, social or cultural factors.

2.2.4 Types of studies

All types of primary studies and publications (both qualitative and quantitative) will be included in this review with no restrictions to time, geographical location, setting and language. Reviews, editorials, conference abstracts, commentaries, expert opinions, letters to editors, book review chapters or study protocols will be excluded. However, their references will be checked for eligible studies.

2.3 Search strategy and information sources

The search strategy will involve the following databases: PubMed, Medline, Embase, Cochrane Central, Web Of science, CINAHL, PsychInfo, and Pedro. These databases were selected for their comprehensive coverage of health research and their ability to track citations across various disciplines. PubMed and Medline cover biomedical literature extensively, while Embase offers strong coverage of pharmacology and drug-related studies. Cochrane Central is crucial for systematic reviews and clinical trials, CINAHL covers nursing and allied health literature, PsychInfo includes psychological and behavioral studies, and Pedro focuses on evidence-based practice in physiotherapy.

A search string has been prepared for PubMed and will be adapted across all these databases. No limitations will be set on the search strategy or the study date (Supplementary File 1). The string will be converted to be used in all the other databases. These databases were selected due to their relevance to health research and their ability to track citations. No limitations will be set for the search strategy or the date of the study. A grey literature search will also follow the Canadian Agency for Drugs and Technologies in Health (CADTH) tool for searching health-related[14]. The CADTH tool makes the grey literature searching process transparent and systematic[15]. If required, authors will be contacted for further information or missing data. If needed, the search strategy will be modified and adapted to balance the relevance of the records following an interactive approach to scoping review. Any changes will be highlighted in the scoping review output. The International Prospective Register of Systematic Reviews database (PROSPERO) was consulted to check for ongoing reviews on this topic. No systematic reviews were found on this topic.

2.4 Study selection

All entries will be uploaded to Covidence (www.covidence.org), where duplicates will be automatically removed. The screening process will be conducted by two researchers (GB, FP) in the blind. A title and abstract review will be conducted, followed by a full-text screening. A pilot test, pre-formal screening for a random of 10% of records retrieved, will be conducted as a calibration exercise to improve reliability across reviewers. The formal screening will start if the percentage interrater agreement is >90%. Otherwise, the inclusion and exclusion criteria will be further specified, and another pilot test will be performed. In case of conflict, a third author will be consulted (SB). Reasons for the exclusion will be reported in the scoping review report. The final included studies will be mapped through the scoping review. A graphical representation of the selection of studies will be presented, adopting the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram[16]. The included studies will be uploaded to a OneDrive folder accessible to all team members. The studies' authors will be contacted if we cannot find the full text of their papers.

2.5 Data extraction

Data will be charted based on the JBI Standardized Data Extraction Form 17. The following information will be extracted from the included studies:

- Authors and year of publication: Details about the authors and the year the study was published.

- Country of origin: The country or countries where the study was conducted.
- Aims and purpose: A description of the study's aims and objectives.
- Population and sample size: Characteristics of the studied population and the sample size.
- Study design: The type of study conducted (e.g., qualitative, quantitative, review, etc.).
- Ethical issues addressed: Specific ethical dilemmas or issues discussed (e.g., patient autonomy, informed consent, professional conduct, confidentiality).
- Domains of physiotherapy: Areas of physiotherapy practice covered in the study (e.g., musculoskeletal rehabilitation, neurorehabilitation, rehabilitation techniques, patient interactions).
- Outcomes: Results related to the ethical issues (e.g., impact on patient care, professional conduct).
- Methods of ethical assessment: Tools or methods used to assess ethical issues (e.g., qualitative interviews, surveys, ethical frameworks).
- Philosophical framework: Theories or philosophical approaches used to analyze the ethical issues.
- Conclusion: A summary of how ethical issues were addressed and their implications for practice.

Any changes made to the data extraction form will be documented in the final scoping review. This form will be reviewed by all researchers involved and tested before implementation, following the same screening pilot test method. Two researchers (GB, FP) will independently extract the data. Given the iterative nature of the data extraction, other data may be added to the proposed draft. The modifications will be reported in the full scoping review.

2.6 Data synthesis

The results will be narratively synthesized to organize and classify the ethical issues and principles identified in the context of physiotherapy into overarching themes. This synthesis will involve grouping the findings into key thematic areas, such as ethical dilemmas in patient interactions, professional conduct, and ethical decision-making in various physiotherapy settings.

We will provide a descriptive summary of the findings, highlighting how ethical considerations are addressed across different aspects of physiotherapy practice. This summary will include identifying gaps in the literature where further research is needed and suggesting potential areas for future investigation.

All included studies will be reported and mapped to illustrate the breadth of the search and the data extracted. The results will be summarized in tables and graphs to visually represent the distribution of ethical topics and methodologies. Given the iterative nature of the scoping review process, additional categories or themes may be introduced as necessary to ensure a comprehensive analysis of the ethical dimensions in physiotherapy.

2.7 Methodological quality appraisal

No critical appraisal of the risk of bias will be performed in line with guidance on the scoping review 12, as we intend to map the available evidence rather than provide clinical and synthesised answers to a question.

3. Discussion

This scoping review aims to systematically explore and analyze the scientific literature on ethical issues within the field of physiotherapy. The primary objectives of this review are to (1) map the existing literature on ethical considerations in physiotherapy practice, (2) identify the methodologies used to assess these ethical issues, and (3) highlight any gaps in knowledge regarding the integration of ethical principles into physiotherapy.

We hypothesise that the review will reveal a concentration of studies focusing on specific ethical dilemmas such as patient autonomy, informed consent, and confidentiality, with potentially less attention given to broader ethical frameworks and their application across various aspects of physiotherapy practice. By outlining this protocol, we seek to provide a clear and systematic approach for conducting the review, minimizing potential reporting biases and improving the transparency of our work.

The protocol follows the methodological framework established for conducting scoping reviews[12,13]. Any deviations from this protocol will be documented and addressed in the final scoping review report. The findings from this review will be disseminated through a peer-reviewed publication and presentations at relevant conferences to contribute to the understanding and development of ethical practices in physiotherapy.

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Supplementary n°2 – Research String

Medline via Pubmed consulted in date 17/10/2024				
Population	1	**Physical Therapy Modalities**	**[Mesh Term]**	187,529
	2	**Physical Therapy Specialty**	**[Mesh Term]**	3,087
	3	**Rehabilitation**	**[Mesh Term]**	369,104
	4	Rehabilitation	[Title/Abstract]	842,130
	5	Physiotherap*	[Title/Abstract]	83,274
	6	"Physical therap*"	[Title/Abstract]	123,518
	7	"Physical rehabilitat*"	[Title/Abstract]	3,744
	8	"Rehabilitation therap*"	[Title/Abstract]	4,778
	9	Physiotherapist	[Title/Abstract]	5,056
	10	Physiotherapists	[Title/Abstract]	8,527
	11	“Physical therapist”	[Title/Abstract]	3,808
	12	“Physical therapists”	[Title/Abstract]	6,165
	13	1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12		571,211
Concept	14	**Ethics**	**[Mesh Term]**	158,840
	15	**Ethics Consultation**	**[Mesh Term]**	1,435
	16	**Ethics, Research**	**[Mesh Term]**	9,169
	17	**Codes of Ethics**	**[Mesh Term]**	5,564
	18	**Principle-Based Ethics**	**[Mesh Term]**	34,111
	19	**Ethics, Clinical**	**[Mesh Term]**	65,200
	20	**Ethics, Professional**	**[Mesh Term]**	75,373
	21	**Ethics, Nursing**	**[Mesh Term]**	10,626
	22	**Ethics, Medical**	**[Mesh Term]**	48,722
	23	**Ethical Theory**	**[Mesh Term]**	3,678
	24	**Bioethics**	**[Mesh Term]**	12,174
	25	Ethics	[Title/Abstract]	99,889
	26	Bioethics	[Title/Abstract]	17,089
	27	"Professional ethics"	[Title/Abstract]	9,808
	28	“Ethical issue*”	[Title/Abstract]	15,479
	29	"Ethical dilemma*”	[Title/Abstract]	5,565
	30	"Ethical principle*"	[Title/Abstract]	4,657
	31	"Moral obligation*"	[Title/Abstract]	1,053
	32	"Moral issue*"	[Title/Abstract]	789
	33	“Moral principle*”	[Title/Abstract]	541
	34	"Moral dilemma*”	[Title/Abstract]	1,333
	35	“Ethical decision-making”	[Title/Abstract]	1,705
	36	“Moral decision-making”	[Title/Abstract]	492
	37	"Ethical consideration*"	[Title/Abstract]	8,319
	38	“Ethical challenge*”	[Title/Abstract]	4,026
	39	“Moral consideration*”	[Title/Abstract]	281
	40	“Moral challenge*”	[Title/Abstract]	203
	41	"Bioethical issue*”	[Title/Abstract]	510
	42	“Bioethical dilemma*”	[Title/Abstract]	104
	43	14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42		239,332
	44	13 AND 43		**5,907**

PsycINFO consulted in date 05/11/2024
Physical Therapy Modalities *OR* **MeSH**: Physical Therapy Specialty *OR* **MeSH**: Rehabilitation *OR* **Title**: Rehabilitation *OR* **Title**: Physiotherap**OR* **Title**: "Physical therap*" *OR* **Title**: "Physical rehabilitat*" *OR* **Title**: "Rehabilitation therap*" *OR* **Title**: Physiotherapist *OR* **Title**: Physiotherapists *OR***Title**: "Physical therapist" *OR* **Title**: "Physical therapists" *AND* **MeSH**: Ethics *OR***MeSH**: Ethics Consultation *OR* **MeSH**: Ethics, Research *OR* **MeSH**: Codes of Ethics*OR* **MeSH**: Principle-Based Ethics *OR* **MeSH**: Ethics, Clinical *OR* **MeSH**: Ethics, Professional *OR* **MeSH**: Ethics, Nursing *OR* **MeSH**: Ethics, Medical *OR* **MeSH**: Ethical Theory *OR* **MeSH**: Bioethics *OR* **Title**: "Professional ethics" *OR* **Title**: "Ethical issue*" *OR* **Title**: "Ethical dilemma*" *OR* **Title**: "Ethical principle*" *OR* **Title**: "Moral obligation*" *OR* **Title**: "Moral issue*" *OR* **Title**: "Moral principle*" *OR* **Title**: "Moral dilemma*" *OR* **Title**: "Ethical decision-making" *OR* **Title**: "Moral decision-making" *OR* **Title**: "Ethical consideration*" *OR* **Title**: "Ethical challenge*" *OR* **Title**: "Moral consideration*" *OR* **Title**: "Moral challenge*" *OR* **Title**: "Bioethical issue*" *OR***Title**: "Bioethical dilemma*"

Embase consulted in date 05/11/2024
('physical therapy modalities':ti,ab OR 'physical therapy specialty':ti,ab OR 'rehabilitation':ti,ab OR rehabilitation:ti,ab OR physiotherap*:ti,ab OR 'physical therap*':ti,ab OR 'physical rehabilitat*':ti,ab OR 'rehabilitation therap*':ti,ab OR physiotherapist:ti,ab OR physiotherapists:ti,ab OR 'physical therapist':ti,ab OR 'physical therapists':ti,ab) AND ('ethics':ti,ab OR 'ethics consultation':ti,ab OR 'ethics, research':ti,ab OR 'codes of ethics':ti,ab OR 'principle-based ethics':ti,ab OR 'ethics, clinical':ti,ab OR 'ethics, professional':ti,ab OR 'ethics, nursing':ti,ab OR 'ethics, medical':ti,ab OR 'ethical theory':ti,ab OR 'bioethics':ti,ab OR ethics:ti,ab OR bioethics:ti,ab OR 'professional ethics':ti,ab OR 'ethical issue*':ti,ab OR 'ethical dilemma*':ti,ab OR 'ethical principle*':ti,ab OR 'moral obligation*':ti,ab OR 'moral issue*':ti,ab OR 'moral principle*':ti,ab OR 'moral dilemma*':ti,ab OR 'ethical decision-making':ti,ab OR 'moral decision-making':ti,ab OR 'ethical consideration*':ti,ab OR 'ethical challenge*':ti,ab OR 'moral consideration*':ti,ab OR 'moral challenge*':ti,ab OR 'bioethical issue*':ti,ab OR 'bioethical dilemma*':ti,ab) AND [embase]/lim

Cinhal consulted in date 05/11/2024
((((((((((((MH "Physical Therapy Modalities+")) OR ((MH "Physical Therapy Specialty+"))) OR ((MH Rehabilitation+))) OR (Rehabilitation)) OR (Physiotherap*)) OR ("Physical therap*")) OR ("Physical rehabilitat*")) OR ("Rehabilitation therap*")) OR (Physiotherapist)) OR (Physiotherapists)) OR ("Physical therapist")) OR ("Physical therapists")) AND (((((((((((((((((((((((((((((MH Ethics+)) OR ((MH "ethics consultation+"))) OR ((MH "ethics, research+"))) OR ((MH "codes of ethics+"))) OR ((MH "Principle-Based Ethics+"))) OR ((MH "ethics, clinical+"))) OR ((MH "Ethics, Professional+"))) OR ((MH "ethics, nursing+"))) OR ((MH "ethics, medical+"))) OR ((MH "ethical theory+"))) OR ((MH bioethics+))) OR (Ethics)) OR (Bioethics)) OR ("Professional ethics")) OR ("Ethical issue*")) OR ("Ethical dilemma*")) OR ("Ethical principle*")) OR ("Moral obligation*")) OR ("Moral issue*")) OR ("Moral principle*")) OR ("Moral dilemma*")) OR ("Ethical decision-making")) OR ("Moral decision-making")) OR ("Ethical consideration*")) OR ("Ethical challenge*")) OR ("Moral consideration*")) OR ("Moral challenge*")) OR ("Bioethical issue*")) OR ("Bioethical dilemma*"))

Filters:
Research Article
Peer Reviewd
Exclude Medline Records

PEDro consulted in date 05/11/2024
Abstract and title: Ethics

Supplementary n°3 – Records excluded with reasons

Author	**Year**	**Title**	**Reason for exclusion**
M Aguillar-Rodriguez	2019	A blended-learning programme regarding professional ethics in physiotherapy students	Topic not aligned with the review scope
JV Stillo	1995	A case in rehabilitation ethics.	No Full Text
JB Lattanzi	2011	A Conceptual Framework for International Service-Learning Course Planning	Topic not aligned with the review scope
AR Egbert	2017	A Framework for Ethical Decision Making in the Rehabilitation of Patients with Anosognosia.	Wrong Population
No authors listed	1995	A guide to physical therapist practice, Volume I: A description of patient management. American Physical Therapy Association.	No Full Text
C Delany	2012	A process of informed consent for student learning through peer physical examination in pelvic floor physiotherapy practice	Topic not aligned with the review scope
M Veras	2024	A rapid review protocol of physiotherapy and occupational therapy telerehabilitation to inform ethical and equity concerns.	Wrong study design
LL Swisher	2002	A retrospective analysis of ethics knowledge in physical therapy (1970-2000)	Wrong study design
T Hartley	2016	A Survey of Current and Projected Ethical Dilemmas of Rehabilitation Counselors.	Wrong Population
E Lind Irgens	2016	Acquired brain injury rehabilitation: dilemmas in neurological physiotherapy across healthcare settings.	Topic not aligned with the review scope
M Laliberté	2015	An analysis of ethics teaching in Canadian physiotherapy and occupational therapy programs	No Full Text
M Laliberté	2015	An in-depth analysis of ethics teaching in Canadian physiotherapy and occupational therapy programs.	Topic not aligned with the review scope
MT Samo	1993	Aphasia rehabilitation: psychosocial and ethical considerations.	Wrong Population
LP Brewster	2006	Application of rehabilitation ethics to a selected burn patient population's perspective.	Wrong Population
J Najem	2018	Assessing Rehabilitation Eligibility of Older Patients: An Ethical Analysis of the Impact of Bias.	Wrong Population

E Marques-Sulé	2021	Attitudes towards learning professional ethics in undergraduate physiotherapy students: A STROBE compliant cross-sectional study.	Topic not aligned with the review scope
LR Cherney	2020	Autonomy and the Patient with Right Hemisphere Cognitive-Communication Deficits: Ethical Considerations in Rehabilitation Practice.	Wrong Population
AFV Badarò	2008	Bioethics and research in physical therapy: approximation and bonds	Wrong study design
AG Scheneiders	2015	Blood, sweat and tears: reclaiming the ethical high ground in sports physiotherapy.	Wrong study design
A Mansbach	2011	Blowing the whistle to protect a patient: a comparison between physiotherapy students and physiotherapists	Topic not aligned with the review scope
S Blanton	2020	Can Reading Tolstoy Make Us Better Physical Therapists? The Role of the Health Humanities in Physical Therapy.	Topic not aligned with the review scope
Z Davidow	2010	Can You Learn Ethics by Watching TV? The Use of TV Shows in Teaching Ethics in Physical Therapy.	No Full Text
M Butler	2008	Care ethics and brain injury.	Wrong Population
G Gard	2003	Changes in life-views and ethical viewpoints during physiotherapy education	No Full Text
Boland Patterson J	2000	Choice: ethical and legal rehabilitation challenges.	Wrong Population
JA Sliwa	2002	Clinical ethics in rehabilitation medicine: core objectives and algorithm for resident education.	Wrong Population
EJ Phipps	1998	Communication and ethics: cardiopulmonary resuscitation in head trauma rehabilitation.	Wrong Population
J Garcia	2009	Comparing two training strategies to increase competence in solving ethical dilemmas.	No Full Text
S Beveridge	2015	Comparison of Ethical Dilemmas Across Public and Private Sectors in Rehabilitation Counseling Practice.	Wrong Population
S Cross	2000	Confidentiality within physiotherapy: perceptions and attitudes of clinical practitioners.	Topic not aligned with the review scope
GR Scofield	1993	Considerations on the ethics of rehabilitation medicine	Wrong Population
A Hudon	2015	Content analysis of the Canadian rehabilitation ethics teaching workshop (crew day)	No Full Text
C Finley	1991	Curriculum survey: ethical and legal instruction -- a report from the APTA Department of Education and the APTA Judicial Committee.	No Full Text

JD Banja	1994	Deception in advertising and marketing: ethical applications in rehabilitation.	Wrong Population
I Novak	2021	Decisionmaking in rehabilitation.	Wrong Population
V V Orzheshkovskii	1987	Deontological problems in a system for the postgraduate training of physiotherapists].	No Full Text
M Clemence	2001	Developing the ethics of placebos in physiotherapy	Wrong study design
P Lee	2015	Development of a decision tool to ethically assign care to the OTA and PTA	Topic not aligned with the review scope
C Carpenter	2002	Dilemmas of practice as experienced by physical therapists in rehabilitation settings...including commentary by Barreca S	No Full Text
SE Roush	2011	Disability reconsidered: the paradox of physical therapy.	Wrong study design
DA Nicholls	2012	Discipline, desire, and transgression in physiotherapy practice	Topic not aligned with the review scope
MJ Young	2024	Disorders of Consciousness Rehabilitation: Ethical Dimensions and Epistemic Dilemmas.	Wrong Population
M Lalibertè	2013	Do conflicts of interest create a new professional norm? Physical therapists and workers' compensation.	Wrong study design
M Aguillar-Rodriguez	2021	Effect of a Programme Based on Professional Ethics in Physiotherapy Students	No Full Text
G Gartland	1987	Essentials of ethics in clinical practice: a communications perspective.	No Full Text
AL Caplan	1987	Ethical & policy issues in rehabilitation medicine.	Wrong Population
KL Kirschner	2012	Ethical challenges of caring for VIPs in the rehabilitation setting: Part II.	Wrong Population
KL Kirschner	2012	Ethical challenges of caring for VIPs in the rehabilitation setting.	Wrong Population
K Naamanka	2023	Ethical competence - exploring situations in physiotherapy practice.	No Full Text
JL Saunders	2007	Ethical complaints and violations in rehabilitation counseling: an analysis of Commission on Rehabilitation Counselor Certification data.	Wrong Population

JE Miller	2015	Ethical concerns identified by physical medicine and rehabilitation residents.	Wrong Population
JM Young	2001	ETHICAL CONCERNS OF STAFF IN A REHABILITATION CENTER	Topic not aligned with the review scope
JF Malec	1996	Ethical conflict resolution based on an ethics of relationships for brain injury rehabilitation.	Wrong Population
R Flanagan	1986	Ethical considerations for the peace activist psychotherapist.	Wrong Population
JK Plummer	1995	Ethical considerations in brain injury rehabilitation: applications to mild traumatic brain injury.	Wrong Population
GR Scofield	1993	Ethical considerations in rehabilitation medicine	Wrong Population
PD Rumrill	1999	Ethical considerations in reporting and publishing rehabilitation research	Wrong Population
JR Bach	1994	Ethical considerations in the management of individuals with severe neuromuscular disorders	Wrong Population
J Haas	1993	Ethical considerations of goal setting for patient care in rehabilitation medicine	Wrong Population
C Christiansen	2001	Ethical considerations related to evidence-based practice.	Wrong Population
SL Hanson	2007	Ethical decision making in rehabilitation: Consideration of Latino cultural factors.	Wrong Population
NR Kirsch	2009	Ethical decision making: Application of a problem-solving model	No Full Text
BP Horowitz	2003	Ethical decision-making challenges in clinical practice.	Wrong Population
BT Vaughn	1998	Ethical dilemmas encountered by private sector rehabilitation practitioners.	Topic not aligned with the review scope
BR Hasselkus	1991	Ethical dilemmas in family caregiving for the elderly: implications for occupational therapy.	Wrong Population
VM Tarvydas	2010	Ethical dilemmas of rehabilitation counselors: results of an international qualitative study.	Wrong Population
JC Hill	2023	Ethical Dilemmas: Current and Projected Concerns Reported by Certified Rehabilitation Counselors.	Wrong Population
R Basevi	2014	Ethical guidelines and the use of social media and text messaging in health care: a review of literature.	Topic not aligned with the review scope

KT Lucke	1998	Ethical implications of caring in rehabilitation.	Wrong Population
F Tasseau	2011	Ethical issues concerning the Leonetti law and its application for people with severe brain damage	Wrong Population
DJ Matthews	1990	Ethical issues encountered in pediatric rehabilitation.	Wrong Population
J Stein	2012	Ethical issues in inpatient rehabilitation length of stay determination.	Wrong Population
PJ Flett	2003	Ethical issues in paediatric rehabilitation.	Wrong Population
J Donders	2013	Ethical issues in pediatric traumatic brain injury rehabilitation.	Wrong Population
MG Kuzczewski	2005	Ethical issues in physical medicine and rehabilitation: Treatment decision making with adult patients	Wrong Population
JF Haas	1994	Ethical issues in physical medicine and rehabilitation. Conclusion to a series.	Wrong Population
RW Richardson	2015	Ethical issues in physical therapy	Wrong study design
HM Robillard	1989	Ethical issues in primary health care: a survey of practitioners' perceptions.	Wrong Population
M Martone	2004	Ethical issues in rehabilitation in the home-care setting.	No Full Text
J Blackmer	2000	Ethical issues in rehabilitation medicine.	Wrong Population
J Banja	2001	Ethical issues in rehabilitation science and medicine	Wrong Population
M Kuczewski	2001	Ethical issues in rehabilitation: conceptualizing the next generation of challenges.	Wrong Population
RB Purtilo	1988	Ethical issues in teamwork: the context of rehabilitation.	No Full Text
J Sim	1997	Ethical issues in the management of persistent vegetative state.	Wrong Population
J Matthes	2013	Ethical issues in using deception to facilitate rehabilitation for a patient with severe traumatic brain injury.	Wrong Population
M Guy	2021	Ethical Issues Linked to the Development of Telerehabilitation: a Qualitative Study.	Topic not aligned with the review scope
TE Strax	1994	Ethical issues of treating patients with aids in a rehabilitation setting	Wrong Population

A Hudon	2015	Ethical Issues Raised by Private Practice Physiotherapy Are More Diverse than First Meets the Eye: Recommendations from a Literature Review	Wrong study design
A Rochette	2014	Ethical issues relating to the inclusion of relatives as clients in the post-stroke rehabilitation process as perceived by patients, relatives and health professionals.	Wrong Population
SF Griech	2023	Ethical leadership in physical therapy: a developing construct that demands consideration.	Topic not aligned with the review scope
WA Hoffmann	2015	Ethical misconduct by registered physiotherapists in South Africa (2007-2013): A mixed methods approach.	Topic not aligned with the review scope
JD Banja	2013	Ethical perspectives on knowledge translation in rehabilitation.	Wrong Population
P Kyler-Hutchison	1988	Ethical reasoning and informed consent in occupational therapy.	Wrong Population
NN Sawi	2016	Ethical, Legal, and Medical Challenges When a Patient Refuses a Transfer From Rehabilitation to Acute Medical Services.	Wrong Population
B Fijalkowska	2012	Ethics and EBM in physiotherapy and in occupational therapy	Topic not aligned with the review scope
LL Swisher	2022	Ethics and Moral Agency for a Postpandemic Era: Beyond the Storm	Topic not aligned with the review scope
GR Scofield	1993	Ethics and rehabilitation medicine	Wrong Population
P Queruel	2014	Ethics and rehabilitation of the burn patient: How far to respect the principle of autonomy?	No Full Text
L Chiburis	1997	Ethics and rehabilitation of the patient with severe burns.	Wrong Population
L Pearson	1989	Ethics and rehabilitation--how to develop your ethical awareness.	Wrong Population
ED Metzeg	2002	Ethics corner: Cases from the Hebrew Rehabilitation Center for Aged - Restraint compliant	Wrong Population
ED Metzeg	2002	Ethics corner: cases from the Hebrew Rehabilitation Center for Aged--problematic proxies.	Wrong Population
ED Metzeg	2002	Ethics corner: cases from the Hebrew Rehabilitation Center for Aged--restraint complaint.	Wrong Population
ED Metzeg	2002	Ethics corner: cases from the Hebrew Rehabilitation Center for Aged.	Wrong Population

H Hardenbergh	1946	Ethics for the physical therapist, from the point of view of the medical practitioner.	Wrong Population
AR Haskins	2009	Ethics in geriatric rehabilitation	Wrong Population
WMM Levack	2009	Ethics in goal planning for rehabilitation: a utilitarian perspective.	Topic not aligned with the review scope
DR Falvo	2000	Ethics in rehabilitation education and research.	Wrong Population
G Yeo	1997	Ethics in rehabilitation with culturally diverse older adults	Wrong Population
CPF Pasquina	2015	Ethics in Rehabilitation: Access to Prosthetics and Quality Care Following Amputation.	Wrong Population
F Zaina	2016	Ethics in rehabilitation: challenges and opportunities to promote research.	Wrong Population
C Carpenter	2008	Ethics knowledge in physical therapy: a narrative review of the literature since 2000.	Wrong study design
B Kelly	2010	Ethics of involving children in health-related research: applying a decision-making framework to a clinical trial.	Wrong Population
F Ferrarello	2018	Ethics reporting practices in randomized controlled trials of physical therapy interventions after stroke.	Topic not aligned with the review scope
RB Purtilo	1978	Ethics teaching in allied health fields.	Topic not aligned with the review scope
JD Banja	1992	Ethics, fraud, and the misallocation of rehabilitation resources	Wrong Population
LV Monrouxe	2014	Even now it makes me angry': health care students' professionalism dilemma narratives.	Topic not aligned with the review scope
AC Kassberg	2008	Experiences of ethical dilemmas in rehabilitation: Swedish occupational therapists' perspectives.	Wrong Population
TJ Landon	2018	Exploring Rehabilitation Counseling Supervisors’ Role in Promoting Counselor Development of Ethical Fluency.	Wrong Population
C Stiller	2000	Exploring the ethos of the physical therapy profession in the Unites States: Social, cultrual, and historical influences and their relationship to education	Topic not aligned with the review scope
HL Kordahl	2017	Facilitating awareness of philosophy of science, ethics and communication through manual skills training in undergraduate education.	Topic not aligned with the review scope

MD Hall	2015	Factors influencing physiotherapists' decisions to supervise physiotherapy students: Results from a Canadian national survey	Topic not aligned with the review scope
EJ Betan	1999	Fostering ethical willingness: Integrating emotional and contextual awareness with rational analysis.	Wrong Population
L Atanelov	2015	History of Physical Medicine and Rehabilitation and Its Ethical Dimensions.	Wrong Population
R. Hammond	2015	How physical therapists construct their professional identity	No Full Text
M Dillon	2023	How physiotherapists attend to the human aspects of care when working with people with low back pain: a thematic analysis.	Topic not aligned with the review scope
S Bashir	2018	Impact of social media on attitudes and professional growth of physical therapy students of foundation University, Islamabad, Pakistan	Topic not aligned with the review scope
MC Singleton	1987	Independent practice--on the horns of a dilemma. A special communication.	No Full Text
PJ Thomas	2005	Influence of academic qualifications, place of employment and prior research experience on physiotherapy research practice.	Topic not aligned with the review scope
E Marques-Sule	2022	Influence of Professional Values on Attitudes towards Professional Ethics in Future Physical Therapy Professionals.	Topic not aligned with the review scope
AL Caplan	1988	Informed consent and provider-patient relationships in rehabilitation medicine.	Wrong Population
JR Carlisle	2002	Informed consent in physical medicine and rehabilitation. The physician/patient relationship--the doctor as a fiduciary.	Wrong Population
VM Tarvydas	1996	Interdisciplinary team member perceptions of ethical issues in traumatic brain injury rehabilitation.	Topic not aligned with the review scope
JD Strawbridge	2014	Interprofessional ethics and professionalism debates: findings from a study involving physiotherapy and pharmacy students.	Topic not aligned with the review scope
GM Jensen	2010	Interprofessional ethics in rehabilitation: the dreamcatcher journey.	Topic not aligned with the review scope
R Garlikov	2008	Introduction to perspectives on ethical issues and dilemmas in the treatment of patients with spinal cord injury	Wrong Population

K Mostert	2012	Involvement in, and views on, social responsibility of physiotherapists from a South African province: A cross-sectional survey	Topic not aligned with the review scope
M Izquierdo	2016	Is It Ethical Not to Precribe Physical Activity for the Elderly Frail?	Wrong Population
EE Madsen	2016	Is therapeutic judgement influenced by the patient's socio-economic status? A factorial vignette survey.	Wrong Population
RB Purtilo	1981	Justice in the distribution of health care resources. The position of physical therapists, physiatrists, and rehabilitation nurses.	No Full Text
I Canjuga	2024	Justice sensitivity among nurses and physiotherapists in a Croatian rehabilitation hospital.	Topic not aligned with the review scope
KS Aderibigbe	2019	Knowledge and practice of informed consent by physiotherapists and therapy assistants in KwaZulu-Natal Province, South Africa.	Topic not aligned with the review scope
A Sharp	2021	Lapses in Professional Behavior Identified by Students of Physical Therapy.	Topic not aligned with the review scope
A Hudon	2015	Legal and ethical challenges in the private rehabilitation sector.	No Full Text
G Gard	2005	Life-views and ethical viewpoints among physiotherapy students in Sweden and Turkey - A comparative study	Topic not aligned with the review scope
I Edwards	2011	Living a moral professional life amidst uncertainty: Ethics for an Afghan physical therapy curriculum	Topic not aligned with the review scope
RB Purtilo	1995	Managed care: ethical issues for the rehabilitation professions.	No Full Text
AS Nica	2019	Management and ethics issues in rehabilitation and balneoclimatology	Topic not aligned with the review scope
HM Larin	2009	Measuring moral judgement in physical therapy students from different cultures: a dilemma	Topic not aligned with the review scope
J Blackmer	2002	Medical-ethics teaching in Canadian physical medicine and rehabilitation residency training programs.	Wrong Population
J Sim	1989	Methodology and Morality in Physiotherapy Research	Topic not aligned with the review scope

MS Baliga	2024	Moral Distress and Dilemmas Faced by Health Care Workers During Screening, Treating, and Rehabilitating Women with Gynecological Cancer: A Narrative Review from a Bioethics Consortium	Wrong Population
C Carpenter	2010	Moral distress in physical therapy practice	Topic not aligned with the review scope
D Mukherjee	2009	Moral distress in rehabilitation professionals: results from a hospital ethics survey	Topic not aligned with the review scope
MM Green	2017	Moral Distress in Rehabilitation.	Wrong Population
S WSisola	2000	Moral reasoning as a predictor of clinical practice: the development of physical therapy students across the professional curriculum.	Topic not aligned with the review scope
T Jorgensen-Smith	2021	Multicultural ethics in rehabilitation services	Wrong Population
E Durocher	2010	Navigating ethical discharge planning: A case study in older adult rehabilitation.	Wrong Population
K Naido	2020	Navigating without a Compass: How Culturally and Linguistically Diverse Physical Therapist Students Persist in Higher Education.	Topic not aligned with the review scope
AJ Porcino	2014	Negotiating Consent: Exploring Ethical Issues when Therapeutic Massage Bodywork Practitioners Are Trained in Multiple Therapies.	Topic not aligned with the review scope
JA Balogun	2017	Nigerian physiotherapists’ knowledge and attributes of professionalism	Topic not aligned with the review scope
M Frilund	2021	Nordic forum for ethics in physiotherapy	No Full Text
MS Hall	2022	Patient and practitioner perspectives of psychological need support in physical therapy.	Topic not aligned with the review scope
I Milinkovic	2014	PATIENT'S RIGHT TO INFORMED CONSENT IN REPUBLIC SRPSKA: LEGAL AND ETHICAL ASPECTS (WITH SPECIAL REFERENCE TO PHYSICAL REHABILITATION).	No Full Text
AK Wagner	2003	Peer review: issues in physical medicine and rehabilitation.	Topic not aligned with the review scope

B Greenfield	2009	Phenomenology: an alternative ethics in rehabilitation.	Wrong study design
DL Lowe	2015	Physical Therapist Student Experiences With Ethical and Legal Violations During Clinical Rotations: Reporting and Barriers to Reporting.	Topic not aligned with the review scope
EL Geddes	2009	Physical therapist students as moral agents during clinical experiences	Topic not aligned with the review scope
A Mansbach	2010	Physical therapists' awareness and reporting of peer misconduct: A survey	No Full Text
R Cantu	2019	Physical therapists' perception of workplace ethics in an evolving health-care delivery environment: a cross-sectional survey	Topic not aligned with the review scope
BA Arcos	2021	Physical therapy bioethical reflections on disabled persons.	Topic not aligned with the review scope
P Galley	1977	Physiotherapists as first contact practitioners: new challenges and responsibilities in Australia	Topic not aligned with the review scope
L Mari	2019	Physiotherapists need to engage in a person-centred ethics for better health	Wrong study design
MR Elkins	2020	Physiotherapists should consider joining an ethics review committee.	Topic not aligned with the review scope
A Sillero	2023	Physiotherapists' Ethical Climate and Work Satisfaction: A STROBE-Compliant Cross-Sectional Study.	Topic not aligned with the review scope
N Inbar	2024	Physiotherapists' moral distress: Mixed-method study reveals new insights.	Topic not aligned with the review scope
B McPhee	1977	Physiotherapy - open minds?	Topic not aligned with the review scope
D Malcolm	2014	Practical responses to confidentiality dilemmas in elite sport medicine.	Topic not aligned with the review scope
J Ròzynska	2012	Principles for research in physiotherapy involving human subjects	Topic not aligned with

			the review scope
X Wang	2020	Professionalism dilemmas experienced by health professions students: a cross-sectional study.	Topic not aligned with the review scope
K Gagnon	2015	Professionalism in a digital age: opportunities and considerations for using social media in health care.	Topic not aligned with the review scope
A Townsend	2010	Qualitative research ethics: enhancing evidence-based practice in physical therapy.	Topic not aligned with the review scope
RH Meier	1988	Recent developments in rehabilitation giving rise to important new (and old) ethical issues and concerns.	Wrong Population
GM Jensen	2005	Reflection on the teaching of ethics in physical therapist education: integrating cases, theory, and learning.	Topic not aligned with the review scope
K Reidy	1991	Refusing treatment during rehabilitation. A model for conflict resolution	Wrong Population
RB Purtilo	1991	Rehabilitation and technology: ethical considerations.	No Full Text
FJ Lane	2012	Rehabilitation Counselors' Perceptions of Ethical Workplace Culture and the Influence on Ethical Behavior.	Wrong Population
A De Martini	2011	Rehabilitation, ethics and technique].	Wrong Population
SA Salladay	1996	Rehabilitation, ethics, and managed care.	No Full Text
LD Henley	2006	Reporting ethical protections in physical therapy research.	Wrong study design
S Sabapathy	2009	Reporting of ethical issues in Indian Physiotherapy journals	Wrong study design
CJ Kim	2017	Research and publication ethics of the Journal of Exercise Rehabilitation	Wrong Population
EJ Phipps	2000	Research Ethics in Head Trauma Rehabilitation	Wrong Population
J Sim	1998	Respect for autonomy: issues in neurological rehabilitation.	Wrong Population
RT Hare-Mustin	1979	Rights of clients, responsibilities of therapists.	Wrong Population
DK Anderson	2013	Self-assessment of professionalism in physical therapy education.	Topic not aligned with the review scope
I Cooper	2008	Sexual boundaries between physiotherapists and patients are not perceived clearly: an observational study	Topic not aligned with

			the review scope
RC Hollyday	2007	Should patients participate in clinical decision making? An optimised balance block design controlled study of goal setting in a rehabilitation unit.	Wrong Population
AF Viero Badarò	2011	Sociodemographic and professional profile of physical therapists and origin of their conceptions of ethics.	Topic not aligned with the review scope
No authors listed	1997	Standards of practice for physical therapy and the accompanying criteria. The American Physical Therapy Association.	No Full Text
RB Purtilo	1979	Structure of ethics teaching in physical therapy: a survey.	No Full Text
AS Ragusea	2003	Suggestions for the ethical practice of online psychotherapy.	Wrong Population
A Hudon	2018	Supporting ethics educators in Canadian occupational therapy and physical therapy programs: A national interprofessional knowledge exchange project.	Topic not aligned with the review scope
A Sivasankari	2021	Survey on parental attitude towards ethical considerations of involving their children in physiotherapy care	Topic not aligned with the review scope
I Cooper	2013	Targeted education on the topic of professional boundaries does not change student physiotherapists' opinions or their responses to a series of ethical scenarios.	Topic not aligned with the review scope
HL Triezenberg	1997	Teaching ethics in physical therapy education: a Delphi study.	No Full Text
P O’ Neill	1998	Teaching ethics: The utility of the CPA code.	Wrong Population
A Bialocerkowski	2011	Teaching physiotherapy skills in culturally-diverse classes.	Topic not aligned with the review scope
S Murphy	2020	Teaching professionalism: some features in Canadian physiotherapy programs.	Topic not aligned with the review scope
LD Gilbert	1973	The changing work ethic and rehabilitation.	Wrong Population
VM Tarvydas	2000	The Code of Ethics for Professional Rehabilitation Counselors: what we have and what we need.	Wrong Population
R Hammond	2016	The construction of professional identity by physiotherapists: a qualitative study	Topic not aligned with the review scope

S Kumar	2010	The ethics of evidence implementation in health care.	Topic not aligned with the review scope
A Caplan	1997	The ethics of gatekeeping in rehabilitation medicine	Wrong Population
J Sim	1994	The ethics of single-system (n = 1) research	No Full Text
ID Da Silva	2011	The humanization and the formation of the professional in physiotherapy].	Topic not aligned with the review scope
BH Greenfield	2006	The meaning of caring in five experienced physical therapists.	Topic not aligned with the review scope
EL Ramsden	1975	The patient's right to know. Implications for interpersonal communication processes.	No Full Text
ST Wegener	1996	The rehabilitation ethic and ethics.	Wrong Population
T Dawn	2019	The Relationship Between Completion of Postprofessional Orthopedic Manual Physical Therapy Education and Core Values of Professionalism.	Topic not aligned with the review scope
S Byrd	2011	The right not to hear: the ethics of parental refusal of hearing rehabilitation.	Wrong Population
RT Guenther	1996	The role of an ethics committee in a rehabilitation setting.	Topic not aligned with the review scope
JF Haas	1993	The role of ethics in rehabilitation medicine. Introduction to a series.	Wrong Population
JK Silver	2020	The Vital Role of Professionalism in Physical Medicine and Rehabilitation.	Wrong Population
K Dholakia	2023	Transforming Society Through Critical Service-Learning: A Position for a Justice-Based Approach to Experiential Learning in Physical Therapy Education	No Full Text
R Barnitt	1994	Truth Telling in Occupational Therapy and Physiotherapy.	Wrong Population
K Dholakia	2021	Uncovering Ethical Dilemmas in International Service- Learning: A Grounded Theory.	Topic not aligned with the review scope
M Hughes	2009	Use of deconstructed cases in physical therapy ethics education: an assessment of student learning.	Topic not aligned with the review scope
A Hudon	2015	What are the ethical issues faced by physiotherapists working in private practice? Results of a literature review	No Full Text

D Rasoal	2016	What healthcare teams find ethically difficult.	Wrong Population
A Hudon	2014	What place for ethics? An overview of ethics teaching in occupational therapy and physiotherapy programs in Canada.	Topic not aligned with the review scope
JD Banja	1985	Whistleblowing in physical therapy.	No Full Text
MJ Naylor	2022	You've broken the patient": Physiotherapists' lived experience of incivility within the healthcare team - An Interpretative Phenomenological Analysis.	Topic not aligned with the review scope
Greenfield B.	2012	Technology in Rehabilitation: Ethical and Curricular Implications for Physical Therapist Education	No Full Text
Greenfield B.	2009	The Role of Ethical Theory in Ethical Education for Physical Therapist Students	No Full Text

Supplementary n°4 – Detailed List of Included Studies

Author	Year	Country	Title	Ethical Inquiry Type	Study design	Domains of physical therapy
Ethical theory						
Bruckner J.	1987	USA	Physical therapists as double agents. Ethical dilemmas of divided loyalties.	Normative	Case study	Generic
Delany C.	2010	Australia	Closing the gap between ethics knowledge and practice through active engagement: an applied model of physical therapy ethics.	Normative	Ethical Analysis	Generic
Delany C.	2005	Australia	Respecting patient autonomy and obtaining their informed consent: ethical theory-missing in action	Normative	Ethical Analysis	Generic
Drolet M.	2015	Canada	Theoretical frameworks used to discuss ethical issues in private physiotherapy practice and proposal of a new ethical tool	Normative	Review	Generic
Frilund M.	2021	Norway	The Ethical Standpoints of Rehabilitation in the Nordic Countries- A Theoretical Study About Caring Sciences and Rehabilitation.	Normative	Ethical Analysis	Generic
Gorman-Badar D.	2024	USA	Particularizing an Internal Morality of Physical Therapy	Normative	Ethical Analysis	Generic
Greenfield B.	2010	USA	Beyond a code of ethics: phenomenological ethics for everyday practice.	Normative	Editorial	Generic
Greenfield B.	2009	USA	Phenomenology - An Alternative Ethics in Rehabilitation	Normative	Editorial	Generic
Levack M.	2009	New Zealand	Ethics in goal planning for rehabilitation: a utilitarian perspective	Normative	Ethical Analysis	Generic
McPherson GW	2003	Canada	Rehabilitation: disability ethics versus Peter Singer.	Normative	Ethical Analysis	Generic
Purtilo R.	1975	USA	Reading “Physical Therapy” from an Ethics Perspective	Normative	Editorial	Generic
Sviland R.	2022	Norway	Løgstrup’s thinking: a contribution to ethics in physiotherapy	Normative	Ethical Analysis	Generic
Key Message: Critiques of deontological ethics favor contextual models (e.g., the "active engagement model"), integrating patients’ social identities and relational dynamics. Theoretical tensions arise between utilitarianism (e.g., goal planning in resource-limited contexts) and ethics affirming the intrinsic value of persons with disabilities, advocating hybrid frameworks for rehabilitation.						
Ethical reasoning						

Araújo LZS	2023	Mexico	Bioethical aspects of physiotherapy in the intensive care unit	Normative	Ethical Analysis	Intensive Care
Banja JD	1993	USA	Ethical issues in treating pediatric rehabilitation patients.	Normative	Case study	Pediatric
Barnitt R.	1997	United Kingdom	Ethical reasoning in physical therapy and occupational therapy.	Empirical	Qualitative study	Generic
Chigbo NN	2015	Nigeria	Ethics of physiotherapy practice in terminally ill patients in a developing country, Nigeria	Normative	Review	Palliative care
Clarke S.	2016	Canada	Ethics and Community-Based Rehabilitation: Eight Ethical Questions from a Review of the Literature.	Normative	Review	Generic
Clawson A.	1994	USA	The relationship between clinical decision making and ethical decision making	Normative	Ethical Analysis	Generic
Delany C.	2015	Australia	An ethical approach to health promotion in physiotherapy practice.	Normative	Case study	Generic
Delany C.	2019	Australia	How physiotherapists perceive, interpret, and respond to the ethical dimensions of practice: A qualitative study.	Empirical	Qualitative study	Generic
Delany C.	2012	Australia	The role of clinical ethics consultations for physical therapy practice	Normative	Ethical Analysis	Generic
Ditwiler R.	2024	USA	Definitely a Dark Time:" professional and ethical issues in post-acute care physical therapy during the COVID-19 pandemic.	Empirical	Qualitative study	Infectious diseases
Ditwiler R.	2022	USA	Doing things you never imagined: Professional and ethical issues in the U.S. outpatient physical therapy setting during the COVID-19 pandemic.	Empirical	Qualitative study	Infectious diseases
Edwards I.	2005	Australia	Ethical reasoning as a clinical-reasoning strategy in physiotherapy	Normative	Ethical Analysis	Generic
Finch E.	2005	Canada	Ethically based clinical decision-making in physical therapy: process and issues.	Empirical	Qualitative study	Generic
Galley P.	1975	Australia	Ethical principles and patient referral	Normative	Editorial	Generic
Greenfield B.	2012	USA	Ethical issues in sports medicine: a review and justification for ethical decision making and reasoning.	Normative	Ethical Analysis	Sport
Guccione AA	1980	USA	Ethical issues in physical therapy practice. A survey of physical therapists in New England.	Empirical	Survey	Generic
Haskins A.	2009	USA	Ethical issues in geriatric rehabilitation: A culturally competent approach	Normative	Ethical Analysis	Geriatric

Hudon A.	2019	Canada	Tensions Living Out Professional Values for Physical Therapists Treating Injured Workers	Empirical	Qualitative study	Generic
Kulju K.	2020	Finland	Self-evaluated ethical competence of a practicing physiotherapist: a national study in Finland	Empirical	Observational study	Generic
Malarvizhi D.	2021	India	Ethical issues at the interface of physiotherapy care and research practice in pediatric oncology-descriptive study	Empirical	Observational study	Pediatric
Nalette E.	2010	USA	Constrained physical therapist practice: an ethical case analysis of recommending discharge placement from the acute care setting.	Normative	Case study	Generic
Naudé A	2017	South Africa	Measuring Instrument for Ethical Sensitivity in the Therapeutic Sciences.	Empirical	Mixed Methods	Generic
Poulis I.	2007	USA	Bioethics and physiotherapy	Normative	Editorial	Generic
Praestegaard J.	2013	Sweden	Practicing physiotherapy in Danish private practice: an ethical perspective.	Empirical	Qualitative study	Generic
Praestegaard J.	2011	Sweden	The perceptions of danish physiotherapists on the ethical issues related to the physiotherapist-patient relationship during the first session: a phenomenological approach	Empirical	Qualitative study	Generic
Purtilo R.	1974	USA	Understanding ethical issues. The physical therapist as ethicist	Normative	Ethical Analysis	Generic
Riendeau C.	2015	Canada	An investigation of how university sports team athletic therapists and physical therapists experience ethical issues	Empirical	Qualitative study	Sport
Scheirton L.	2007	USA	Error and patient safety: Ethical analysis of cases in occupational and physical therapy practice	Normative	Case study	Generic
Sim J.	1991	United Kingdom	An Ethical Analysis of Physical Therapists' Duty to Treat Persons Who Have AIDS: Homosexual Patients as a Test Case	Normative	Editorial	Infectious diseases
Sousa J.	2021	Portugal	Ageing and ethical challenges in physiotherapy: application of the RIPS model in ethical decision-making	Normative	Case study	Geriatric
Sturm A.	2023	Austria	Views of physiotherapists on factors that play a role in ethical decision-making: an international online survey study.	Empirical	Survey	Generic
Swisher LL	2010	USA	Moral reasoning among physical therapists: results of the Defining Issues Test.	Empirical	Survey	Generic

Uddin T.	2022	Pakistan	Ethical issues and dilemmas in spinal cord injury rehabilitation in the developing world: a mixed-method study	Empirical	Mixed Methods	Neurologic

Key Message: Ethical reasoning in physical therapy is often guided by pragmatic intuitions and contextual models (e.g., the RIPS framework). However, tensions between ethical principles and external pressures (e.g., productivity targets, medical hierarchies) lead to "moral compromises." Studies in sports medicine and post-COVID rehabilitation highlight the need for structured tools (e.g., ethical consultations) to balance patient autonomy, distributive justice, and systemic constraints.

Ethical reasoning and Education

Aguilar-Rodriguez	2021	Spain	Physiotherapy Students’ Experiences about Ethical Situations Encountered in Clinical Practices	Empirical	Qualitative study	Generic
Arnal-Gómez A.	2022	Spain	Professional values and perception of knowledge regarding professional ethics in physical therapy students: A STROBE compliant cross-sectional study.	Empirical	Cross-sectional	Generic
Caenazzo L.	2020	Italy	Teaching ethics and professionalism in rehabilitation: an empirical research on active learning with university rehabilitation students.	Empirical	Observational study	Generic
Carey JR.	2019	USA	Academic Ethos in Physical Therapy Education	Normative	Ethical Analysis	Generic
Deglio Alves F.	2008	Brasil	Bioethical education in physical therapy undergraduate course	Empirical	Survey	Generic
Dieruf K.	2004	USA	Ethical decision-making by students in physical and occupational therapy	Empirical	Longitudinal study	Generic
Edwards I.	2024	Australia	The development of moral judgment and organization of ethical knowledge in final year physical therapy students.	Empirical	Longitudinal study	Generic
Geddes EL	2008	Canada	Does moral judgement improve in occupational therapy and physiotherapy students over the course of their pre-licensure training?	Empirical	Longitudinal study	Generic
Geddes EL	2009	Canada	Ethical issues identified by physical therapy students during clinical placements	Normative	Review	Generic
Howard B.	2020	USA	Comparing Moral Reasoning Across Graduate Occupational and Physical Therapy Students and Practitioners...2020 AOTA Annual Conference & Expo.	Empirical	Cross-sectional	Generic
Jiandani MP	2022	India	Teaching bioethics needs more than just a module: A comparison of knowledge and attitude of bioethics	Empirical	Survey	Generic

			principles in 1st- and 3rd-year physiotherapy undergraduates.			
Lowe D.	2014	USA	Physical Therapist Student Experiences With Ethical and Legal Violations During Clinical Rotations: Reporting and Barriers to Reporting	Empirical	Survey	Generic
Macpherson I	2021	Spain	Analysis in the ethical decision-making of dental, nurse and physiotherapist students, through case-based learning	Empirical	Mixed Methods	Generic
Romanello M.	2000	USA	The “Ethic of Care” in Physical Therapy Practice and Education: Challenges and Opportunities	Normative	Editorial	Generic
Sturm A.	2024	Austria	Western ideals and global realities–physiotherapists’ views on factors that play a role in ethical decision-making: an international qualitative analysis	Empirical	Qualitative study	Generic
Sutkowi-Hemstreet	2025	USA	Justice, Equity, Diversity, and Inclusion–Related Curricular Elements in Entry-Level Physical Therapist Education: A Delphi Study	Empirical	Delphy	Generic
Swisher LL	2012	USA	Evaluating moral reasoning outcomes in physical therapy ethics education: stage, schema, phase, and type.	Empirical	Longitudinal study	Generic
Triezenberg H.	2001	USA	The Use of Narrative in an Applied Ethics Course for Physical Therapist Students	Empirical	Survey	Generic
Triezenberg H.	2000	USA	Beyond the Code of Ethics: Educating Physical Therapists for Their Role as Moral Agents	Normative	Ethical Analysis	Generic
Key Message: Effective ethics education requires experiential approaches: case-based learning (CBL) enhances students’ moral sensitivity, while traditional curricula show limited outcomes. Disparities between students and professionals (e.g., clinicians’ advanced ethical reasoning) underscore the importance of clinical placements, mentorship, and critical reflection to integrate theory and practice.						
Ethical Perception						
Barnitt R.	1998	United Kingdom	Ethical dilemmas in occupational therapy and physical therapy: a survey of practitioners in the UK National Health Service.	Empirical	Survey	Generic
Berg-Poppe P.	2019	USA	The impact of an evolving profession on the frequency and perceived difficulty of ethical encounters among physical therapists in the clinic.	Empirical	Survey	Generic
Ditwiler R.	2021	USA	Professional and Ethical Issues in United States Acute Care Physical Therapists Treating Patients With COVID-19: Stress, Walls, and Uncertainty.	Empirical	Qualitative study	Infectious diseases
Fryer C.	2021	Australia	Scarcity of resources and inequity in access are frequently reported ethical	Empirical	Observational study	Generic

			issues for physiotherapists internationally: an observational study.			
Kulju K.	2013	Finland	Ethical problems and moral sensitivity in physiotherapy	Empirical	Survey	Generic
Moreno - Segura N.	2023	Spain	Physical Therapists' Ethical and Moral Sensitivity: A STROBE-Compliant Cross-Sectional Study with a Special Focus on Gender Differences.	Empirical	Cross-sectional	Generic
Nyante GG	2020	Ghana	Patterns of ethical issues and decision-making challenges in clinical practice among Ghanaian physiotherapists.	Empirical	Cross-sectional	Generic
Praestegaard J.	2013	Sweden	Ethical issues in physiotherapy--reflected from the perspective of physiotherapists in private practice.	Empirical	Qualitative study	Generic
Skiba D.	2023	Poland	Moral values in the work of a physiotherapist	Empirical	Survey	Generic
Sohail M.	2021	Pakistan	Knowledge, Interest and Perception of Academic Physiotherapists with Regard to Professional Ethics	Empirical	Cross-sectional	Generic
Sturm A.	2022	Austria	Almost) 50 shades of an ethical situation - international physiotherapists' experiences of everyday ethics: a qualitative analysis.	Empirical	Qualitative study	Generic
Tarvydas VM	1996	USA	Interdisciplinary team member perceptions of ethical issues in traumatic brain injury rehabilitation	Empirical	Survey	Neurologic
Triezenberg HL	1996	USA	The identification of ethical issues in physical therapy practice.	Empirical	Delphi	Generic

Key Message: Perceptions of ethical dilemmas vary culturally: private-sector physical therapists (e.g., Sweden, USA) prioritize patient autonomy, while public-sector practitioners (e.g., Canada, Australia) face tensions between equity and institutional mandates. Gender differences (e.g., higher ethical sensitivity in women) and training gaps demand flexible guidelines and context-specific continuing education.

Ethics of care relationship

†	2019	Sweden	Ethics and sexual health: Exploration of the ethical code of conduct for physiotherapists concerning sexual health in clinical practice.	Normative	Ethical Analysis	Generic
Bellner AL.	1999	Sweden	Senses of responsibility. A challenge for occupational and physical therapists in the context of ongoing professionalization.	Normative	Ethical Analysis	Generic
Bettini-Pereira RA	2014	Brasil	Reflexões bioéticas em fisioterapia sobre a pessoa com deficiência.	Normative	Review	Generic
Cardol M.	2002	Netherlands	On autonomy and participation in rehabilitation.	Normative	Review	Generic

Copnell G.	2018	United Kingdom	Informed consent in physiotherapy practice: it is not what is said but how it is said	Normative	Ethical Analysis	Generic
Coy JA	1989	USA	Autonomy-Based Informed Consent: Ethical Implications for Patient Noncompliance	Normative	Editorial	Generic
Dahl-Michelsen T.	2019	Norway	Approaching intimacy, sexuality and ethics in the professional training of physiotherapy students in Norway	Empirical	Qualitative study	Generic
Delany C.	2007	Australia	In private practice, informed consent is interpreted as providing explanations rather than offering choices: a qualitative study.	Empirical	Qualitative study	Generic
Długołęcka A.	2024	Poland	Ethics of a Physiotherapist: Touch, Corporeality, Intimacy—Based on the Experience of Elderly Patients	Empirical	Qualitative study	Geriatric
Haswell K.	1996	Australia	Informed choice and consent for cervical spine manipulation	Normative	Editorial	Muscolo-skeletal
Lees AB	2012	New Zealand	To tell or not to tell? Physiotherapy students' responses to breaking patient confidentiality.	Empirical	Longitudinal study	Generic
Mármol-López M.	2023	Spain	Physiotherapists' ethical behavior in professional practice: a qualitative study.	Empirical	Qualitative study	Generic
Okezue OC	2023	Nigeria	Patient involvement in medical decisions: a survey of shared decision making during physical therapy consultations.	Empirical	Survey	Generic
Purtilo R.	1984	USA	Applying the principles of informed consent to patient care. Legal and ethical considerations for physical therapy.	Normative	Editorial	Generic
Roman N.	2019	Romania	Ethical considerations about informed consent in physiotherapy in Romania.	Empirical	Cross-sectional	Generic
Key Message: Physical therapy poses unique dilemmas tied to physical touch, power asymmetry, and informed consent. Studies on elderly or vulnerable patients (e.g., Poland, 2024) reveal consent is often interpreted as technical explanation rather than shared decision-making. Ethics training must emphasize empathetic communication, professional boundaries, and managing moral distress from organizational constraints.						
Justice and equity in clinical ethics						
Cantu R.	2019	USA	Physical Therapists' Ethical Dilemmas in Treatment, Coding, and Billing for Rehabilitation Services in Skilled Nursing Facilities: A Mixed-Method Pilot Study	Empirical	Mixed Methods	Generic
Dholakia K.	2023	USA	Transforming Society Through Critical Service-Learning: A Position for a Justice-Based Approach to Experiential Learning in Physical Therapy Education	Normative	Ethical Analysis	Generic

Edwards I.	2011	Australia	New Perspectives on the Theory of Justice: Implications for Physical Therapy Ethics and Clinical Practice	Normative	Ethical Analysis	Generic
Hunt M.	2013	Canada	A patient-centered care ethics analysis model for rehabilitation	Normative	Ethical Analysis	Generic
Laliberté M.	2017	Canada	Ethical Challenges for Patient Access to Physical Therapy: Views of Staff Members from Three Publicly-Funded Outpatient Physical Therapy Departments.	Empirical	Qualitative study	Generic
Palad Y.	2024	Philippines	Physical Therapists' Social Responsibility in the Philippines Entails Adopting a Societal Practice Framework: A Qualitative Study.	Empirical	Qualitative study	Generic
Purtilo R.	1982	USA	Justice in the Distribution of Health Care Resources: The Position of Physical Therapists in the United States and Sweden	Empirical	Survey	Generic
Purtilo R.	1992	USA	Whom to Treat First, and How Much is Enough?: Ethical Dilemmas that Physical Therapists Confront as They Compare Individual Patients' Needs for Treatment	Normative	Ethical Analysis	Generic

Key Message: In public or resource-limited settings (e.g., Philippines, Ghana), physical therapists face dilemmas over resource allocation and treatment prioritization. Studies propose needs-based justice models (e.g., Sweden) and social responsibility (e.g., advocacy for rural communities), emphasizing education’s role in preparing professionals for systemic challenges.

Codes of ethics

Anderson L.	2013	New Zealand	Engaging the professional community: rewriting a code of ethics for NZ physiotherapists.	Empirical	Qualitative study	Professional Ethics
Linker B.	2005	USA	The business of ethics: gender, medicine, and the professional codification of the American Physiotherapy Association, 1918-1935.	Normative	Ethical Analysis	Professional Ethics
Mohamadi M.	2024	Iran	Assessing Physiotherapists' Knowledge of Professional Ethics Codes in Shiraz: A Cross-Sectional Study.	Empirical	Cross-sectional	Professional Ethics
Mohamadi M.	2022	Iran	Proposing a set of ethical guidelines for Iranian physiotherapists: results of a modified Delphi technique	Normative	Delphi	Professional Ethics
Pezdek K.	2023	Poland	The Ethical Code of Conduct for Physiotherapists—An Axiological Analysis	Normative	Ethical Analysis	Professional Ethics
Purtilo R.	1987	USA	Codes of ethics in physiotherapy: A retrospective view and look ahead	Normative	Editorial	Professional Ethics
Swisher LL	2010	USA	The Revised APTA Code of Ethics for the Physical Therapist and Standards of Ethical Conduct for the Physical	Normative	Review	Professional Ethics

			Therapist Assistant: Theory, Purpose, Process, and Significance			
Tamar J.	2014	Israel	Assimilation of the Patient Rights Law and Code of Ethics into Israeli Physical Therapy Services.	Empirical	Qualitative study	Professional Ethics
Key Message: Studies reveal that physical therapy codes of ethics (e.g., the APA Code, 1918–1935) are dynamic tools historically used to legitimize the profession. However, discrepancies persist between formal principles and daily practice. Structured training and contextual internalization of codes are critical to bridge implementation gaps, especially in resource-limited settings or under institutional pressures (e.g., economic priorities vs. equity)						

Supplementary n°5 – The COREQ summary sheet

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care. 2007. Volume 19, Number 6: pp. 349 – 357

Item No	**Guide Questions/Description**	**Reported on Page #**
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/ facilitator	Which author/s conducted the interview or focus group?	Pg 4
2. Credentials	What were the researcher's credentials? E.g., PhD, MD	Suppl. File 2
3. Occupation	What was their occupation at the time of the study?	Suppl. File 2

Item No	Guide Questions/Description	Reported on Page #
4. Gender	Was the researcher male or female?	Suppl. File 2
5. Experience and training	What experience or training did the researcher have?	Suppl. File 2
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Pg 7
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research?	Pg 7
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Pg 7
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Pg 7-8 & Suppl. File 3
Participant selection		
10. Sampling	How were participants selected? e.g., purposive, convenience, consecutive, snowball	Pg 6
11. Method of approach	How were participants approached? e.g., face-to-face, telephone, mail, email	Pg 6
12. Sample size	How many participants were in the study?	Pg 8
13. Non-participation Setting	How many people refused to participate or dropped out? Reasons?	Pg 8
14. Setting of data collection	Where was the data collected? e.g., home, clinic, workplace	Pg 7
15. Presence of nonparticipants	Was anyone else present besides the participants and researchers?	Pg 7
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Pg 8 & Table 3

Item No	**Guide Questions/Description**	**Reported on Page #**
Data collection		
17. Interview guide	Were questions, prompts, and guides provided by the authors? Was it pilot tested?	Pg 6-7 & Table 1
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	Pg 8
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Pg 7
20. Field notes	Were field notes made during and/or after the interview or focus group?	Pg 7
21. Duration	What was the duration of the interviews or focus group?	Pg 6
22. Data saturation	Was data saturation discussed?	N/A
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	N/A
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	Table 2
25. Description of the coding tree	Did the authors provide a description of the coding tree?	Table 2
26. Derivation of themes	Were themes identified in advance or derived from the data?	Table 2
27. Software	What software, if applicable, was used to manage the data?	Pg 7
28. Participant checking	Did participants provide feedback on the findings?	N/A
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g., participant number	Table 4 & Suppl. File 4

No

Item No	Guide Questions/Description	Reported on Page #
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Pg 8-9-10-11 & Table 4 & Suppl. File 4
31. Clarity of major themes	Were major themes clearly presented in the findings?	Pg 8-9-10-11 & Table 4 & Suppl. File 4
32. Clarity of minor themes	Is there a description of diverse cases or a discussion of minor themes?	Pg 8-9-10-11 & Table 4 & Suppl. File 4

Supplementary n°6 – Detailed List of Included Studies

GB	GB is a physiotherapist and a PhD student at the University of Genova (Genova, Italy). GB has more than ten years of clinical experience in cancer rehabilitation, and he is a temporary lecturer in cancer and palliative rehabilitation at the BSc in Physiotherapy at the University of Brescia (Brescia, Italy). GB identifies as a man.
SB	SB is a physiotherapist with joint PhD in Neurosciences and Medical Science, a Research Fellow at the University of Salford (Salford, United Kingdom). SB identifies as man.
SP	SP is a philosopher with a PhD in bioethics and assistant professor at the University of Verona (Verona, Italy). SP identifies as a woman.

VC	VC is a physiotherapist with more than 5 years of clinical experience in oncological rehabilitation, and she is a temporary lecturer in oncological and palliative rehabilitation at the BSc in physiotherapy at the University of Milano Bicocca (Milano, Italy). VC identifies as a woman.

Supplementary n°7 – Theoretical standpoints

Supplementary file N°3 - Reflexive Thematic Analysis

We adopted Reflexive Thematic Analysis (RTA) for data analysis. RTA is an interpretive approach to qualitative data analysis "that facilitates the identification and analysis of patterns or themes in a given data set".[154,156] RTA is situated in a 'Big Q' qualitative paradigm characterised by adhering to a non-(post) positivist paradigm. [157] Thus, some qualitative practices do not apply to RTA (e.g., consensus coding, inter-coder reliability, data saturation, member checking, etc.) as they are infused "with assumptions about the nature of reality and meaningful knowledge" that follow a 'small q' (postpositivist) paradigm.[158,159] Besides, RTA is characterised by researchers' active and creative role in interpreting codes and themes, becoming a resource to tap into rather than a bias.[159] In our study, RTA was primarily conducted with an inductive approach: codes for focus group analysis were produced based on the content of the data.[160] From the perspective of epistemological conception, our study has adopted a constructionist approach as we appreciated meaning and meaningfulness as the main criteria in the coding process.[160] In the focus group analysis, the reflections on knowledge and competencies needed by the oncology rehabilitation physiotherapist were prioritised to answer our research question. An experiential orientation was used in the analysis of this study. This lens considered participants' thoughts, experiences, and feelings as a reflection of their states.[160] The data coding was mainly semantic as we do not think we always went beyond the explicit or surface meanings of the data.[154] Thus, the six steps of the RTA were followed for the focus group analysis.[154] No software was used to assist the coding process.

References:

1. Braun V, Clarke V. Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Couns Psychother Res*. 2021;21(1):37-47. doi:10.1002/CAPR.12360

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4. Braun V, Clarke V. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *https://doi.org/101080/2159676X20191704846*. 2019;13(2):201-216. doi:10.1080/2159676X.2019.1704846
5. Braun, V., & Clarke V. *Thematic Analysis: A Practical Guide*. SAGE Open Med; 2021. https://uk.sagepub.com/en-gb/eur/thematic-analysis/book248481
6. Byrne D. A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Qual Quant*. 2022;56:1391-1412. doi:10.1007/s11135-021-01182-y

Supplementary n°8 – Additional quotations

Theme 1: Navigating the Complexities of Non-Disclosure in Communicating Diagnosis and Prognosis	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Navigating Diagnosis/Prognosis Disclosure: Implications on Informed Consent/Disagreement	‘In this context, unfortunately, when working with half-truths, we always find ourselves on difficult ground, a terrain where it might seem like the physiotherapist has an easier time managing the situation by avoiding saying everything. However, it forces us to live in this grey area, in this land of the unsaid, which is always a complex terrain. Being able to communicate clearly, directly, and precisely with a patient who knows their situation allows us to work with simpler and more linear objectives and methods. If a patient who knows the diagnosis wants to walk, even if it's an activity beyond their capabilities, we can attempt it, just as when the patient doesn't know the truth’ (P2 – Man – 54) ‘For example, I have many patients who come after undergoing surgery for breast cancer. I often find myself in the situation of having to explain to the patient the type of surgery she underwent because at the time of signing the informed consent documents at the referring institution where she underwent the operation, she has no idea of what the surgery entails in terms of postoperative care and subsequent surgeries already planned due to the nature of the initial intervention. This often happens with breast reconstructions, where the patient is put in a situation where she will be reconstructed with an expansion prosthesis, but she is not truly aware of the course of further surgeries she will have to undergo. Many of them come to the point of saying, if I had known, I wouldn't have undergone reconstruction, probably because both from a functional and from a point of view of everything they cannot have through the national health service as rehabilitative treatments. This affects both their perception of themselves and their function, as well as economically. It is an important issue’. (P30 – Woman – 30)
Bridging the Gap: Ethical and Legal	‘Despite the law stating that the patient should be informed of the diagnosis, often this doesn't happen. So, we find

Communication with Caregivers	ourselves at the patient's home facing huge difficulties because the family puts up a wall and tells us not to disclose the diagnosis. They ask us to come up with a more digestible illness. This seriously puts us in difficulty, even though we know what we should do. Dealing with a patient who is not informed of the diagnosis poses a series of care-related issues. Additionally, the patient's collaboration in physiotherapy is compromised. If the patient were informed about the progression of the disease and prognosis, they would understand the importance of early intervention by the physiotherapist, which could slow down the loss of function' (P5 – Woman – 39) 'Often, I find myself facing a dilemma during my shift, especially when we have a patient who hasn't been informed of their diagnosis and has a family that tends to shield them. Recently, I encountered a patient who also has musculoskeletal problems, which restrict their mobility. Additionally, they have bone metastases that increase the risk of fractures. I have to navigate between the family's requests, which sometimes oppose necessary procedures, and the patient's desire to remain active and engage in certain activities. However, the patient is unaware and doesn't know the real risks, and it's not easy in those situations' (P6 – Woman – 28)
Addressing Uncomfortable Questions: Managing Patient Discomfort	'And not to mention the question "Why me?" This is really difficult to deal with. For me, it's really hard to answer this question. My response is simply listening. I haven't found a right answer, so what is the right response here? And, of course, sometimes I try to approach it with humour, not to diminish, but simply to say that this, for better or worse, is everyone's fate, isn't it?' (P13 – Woman – 45) 'I often find myself facing complex and uncomfortable questions: to what extent can I express my opinions or address certain issues without encroaching on the role of other professional figures? It's a delicate aspect that I often have to deal with, especially considering how empathy is fundamental in our work' (P11 – Woman – 26)
Theme 2: Managing Patient Expectations between Hope and Realism	

Codes defined by the researchers	Example of quotes extracted from the focus groups
Aligning Patient Expectations with Physiotherapist Goals	‘A common issue I often notice is that patients arrive with rehabilitation expectations because they've been told they'll be transferred to a hospice for extensive physiotherapy, to get back on their feet, and then return home. These patients often have unrealistic expectations and sometimes beyond my timeframe. They believe they've come to a rehabilitation facility and therefore expect intensive physiotherapy. Fortunately, I work in a team with a psychologist and doctors always available, and we are very unified in our communication. Together, we try to explain to patients that they are not there to undergo extensive physiotherapy but will receive what is necessary based on their capabilities’ (P27 – Woman – 59) ‘My will is aligned with that of the person I have as a patient, so I often find myself facing this issue, namely how much my willpower weighs in comparison to the rehabilitation proposals and the actual needs of the patient. I believe that the theme of the physiotherapist's expectations versus the patient's needs is crucial. Personally, I have realized that sometimes my expectations were excessive compared to the real needs of the patient. I am gradually learning to manage this better, relying more on empathy and taking into account the actual needs of the patient’ (P13 – Woman – 45)
Harmonizing Caregiver/Family Expectations with Physiotherapist/Team Objectives	‘It is important to consider the sharing of goals and expectations not only with the patient but also with the caregiver. At times, the caregiver may prefer that certain information not be disclosed to the patient, creating a dual aspect of uncertainty. I may desire to be honest with the patient about certain topics rather than creating an illusion, but this may conflict with the caregiver's preferences. Therefore, harmonizing the caregiver's expectations with achievable goals becomes crucial’ (P17 – Woman – 28) ‘When I suddenly find myself facing the patient during the assessment, I have to evaluate the situation on the spot. In these cases, the patient's and the family's expectations are often very high, which can make the situation complicated. I always try to be honest with the patient, explaining that

	before seeing significant improvement, it's necessary to carefully assess the conditions and that I don't want to foster false hopes. The main difficulty in these cases is communication, so I try to discuss the situation with the team to ensure there's uniform and clear communication. If this communication doesn't happen, the patient's and the family's unrealistic expectations can become a problem' (P16 – Man – 37)
Theme 3: Balancing Efficacy and Safety in Cancer Rehabilitation	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Rehabilitation: Handling Clinical Outcomes and Risk Management	'The patient has metastases throughout the spine. We know very well that there isn't a brace for the entire spine. However, the patient has no pain and wants to get up. What do you do in that case? In good conscience, you tell him no, but he says he doesn't care. I know perfectly well what I have, I want to get up anyway. At this point, it becomes an ethical issue again. From my professional point of view, I cannot condone such a thing. At the same time, I may not deny him the possibility of getting up. I still have to protect myself somehow, so again, I say okay, I acknowledge his decisions, maybe we'll discuss it briefly in a mini-team, with the doctor, with the team-leader' (P14 – Man – 60) 'As for sharing objectives and bearing risks, it's clear that when facing patients who aren't fully aware, there's a risk of future lawsuits because they expected certain outcomes or because there wasn't enough clarity on objectives or prognosis. It's evident that, to meet the family's demands, one exposes oneself both professionally and legally. The risk is always looming, especially in today's times, where lawsuits are rather common. We must be very cautious'. (P8 – Woman – 43)
Advancing Research in Cancer Rehabilitation	'When proposing an interventional research project, there's a great deal of expectation from patients. Some are deeply involved in research, hoping to find benefits for themselves and others. It's a generous and admirable motivation, but sometimes I get the feeling that patients don't fully understand what we're trying to study. There are different expectations compared to what we can actually offer them. We often ask them to attend additional appointments and

	fill out lengthy questionnaires, but I always wonder if I'm truly doing them good. It's an ethical dilemma that haunts me, because I want patients to participate, but at the same time, I want to make sure I'm not further exhausting them' (P26 – Woman – 52)
Theme 4: Deciding on Discontinuation of Care	
Codes defined by the researchers	**Example of quotes extracted from the focus groups**
Identifying Therapeutic Futility: Determining When Treatment Becomes Ineffective	'One issue we often discuss is when to stop treatment. Some colleagues choose to stop when the patient refuses further treatment or becomes too weak, while others, like myself, believe in accompanying the patient until the end, as there's always something we can do to help. This lack of clear guidelines means each of us decides what we think is best. Personally, I feel it's important to continue providing care, especially in palliative situations where both the patient and their family need our support until the end' (P5 – Woman – 39) 'In practical terms, sometimes the patient accepts you because they see a glimmer of hope. Perhaps they are aware of their illness. However, even knowing they are facing death, they try to cling to anything, and so they see the physiotherapist as a hope to continue living. However, at times we are faced with a clinical condition where physiotherapy, so to speak, is no longer appropriate or indicated. So, the first question that comes to mind is when to suspend physiotherapy or even whether to start it at all.' (P19 – Man – 27)
Emotional Management in Treatment Withdrawal	'Sometimes I find myself wanting to proceed with a treatment, but the patient is not on board at that moment, so accepting therapeutic discontinuation becomes challenging. In those situations, the session itself becomes difficult. You approach the patient, and they no longer want to participate. Emotionally, it's not easy to accept.' (P17 – Woman – 28) 'Regarding training, it's also important to know how to communicate and manage our emotions when we have to suspend treatments. For example, I started practicing mindfulness and other techniques on my own. These are

	things that I have studied and continue to study for myself, but also to be able to propose them to patients as possible therapies' (P13 – Woman – 45)

Supplementary n°9 – Survey questions

Bioethical Issues in Cancer Rehabilitation

Dear Colleague,

I am Gianluca Bertoni, a Physiotherapist and PhD student in Neuroscience at the University of Genova.

This survey has been created to gather the opinions and practices of Italian physiotherapists when faced with ethically complex situations in the field of oncological rehabilitation.

The questionnaire consists of two sections: an initial part concerning your demographic data, followed by six clinical cases. We kindly ask you to answer sincerely, reflecting on your personal experiences.

There is no "right" or "wrong" answer; what matters is your perception and individual approach to the proposed situations.

ESTIMATED COMPLETION TIME: 5 MINUTES

The results of this study, and therefore your participation, are crucial and will contribute to a better understanding of how we address bioethical challenges in the specific context of oncological rehabilitation.

The data is collected anonymously and in full compliance with GDPR regulations regarding data processing.

The project coordinator is Prof. Marco Testa (marco.testa@unige.it) from the University of Genova, who is overseeing this project alongside me (gianluca.bertoni@edu.unige.it), Dr.ssa Sara Patuzzo Manzati (sara.patuzzomanzati@univr.it) from the University of Verona, and Dr. Simone Battista (S.Battista@salford.ac.uk).

For any questions, please do not hesitate to contact us.

Your participation is essential to us.

We sincerely thank you for your collaboration. Your responses will contribute to a better understanding of how to approach bioethical challenges in the specific context of cancer rehabilitation.

Privacy Policy and Informed Consent

By clicking I AGREE, I declare that I have reviewed the privacy policy and informed consent for participation in the questionnaire.SS
The privacy policy and informed consent can be viewed at the following link:
https://rb.gy/1h3ome

- **I agree**
- **I disagree**

Demographic Information

1. **What gender do you identify with?**
    - Male
    - Female
    - Prefer not to answer
    - Other (please specify)

2. **Age:** (Value must be a number)

3. **Which geographical area do you belong to?**
    - North
    - Center
    - South and Islands

4. **In which rehabilitation field do you primarily practice your profession? (Multiple answers possible)**
    - Orthopedic/Traumatologic
    - Neurological
    - Oncological/Palliative Care
    - Cardiological/Respiratory
    - Sports
    - Geriatric
    - Pediatric/Developmental Age

    - Other (please specify)

5. **Have you treated oncological patients in the past three years?**
    - Yes
    - No

Question n°1: Non-communication of diagnosis and prognosis: the difficult terrain of the unspoken.

You are a physiotherapist at an oncology hospital, treating Piero, an elderly man who underwent chest surgery to remove a tumor. The doctor has not yet informed Piero of the advanced lung cancer diagnosis and his grim prognosis due to family pressures. Due to the lack of real therapeutic possibility, Piero has been sent for physiotherapy not so much for functional recovery but to prevent neglect and provide some form of support to the family. During sessions, Piero is worried and anxious, often asking for information about his medical condition, but receiving unclear answers from his doctors. You are therefore faced with a difficult situation, aware that the lack of communication of the diagnosis and prognosis compromises Piero's self-determination and affects the treatment and emotional support you can offer. You wonder whether to respect the family's wish not to disclose the truth to Piero or to find appropriate ways to address the situation and ensure his right to be informed about his condition, thus providing valid consent or dissent to treatments.

1. I focus on Piero's treatment because what matters is ensuring that he continues with the care, especially considering his difficult clinical situation. *(Beneficence & Non-Maleficence)*
2. I respect Piero's desire to be informed and, after a discussion with the medical team, I communicate the diagnosis to him and then involve him in clinical decisions. *(Self-Determination)*
3. I ensure that Piero has access to the same information that any other patient in his situation would have, to avoid differences between the patients I care for. *(Justice & Equity)*
4. I carefully assess the risks and benefits of communicating the diagnosis to Piero, maintaining a cautious and respectful approach to his situation, and involving other members of the medical team if necessary. *(Defensive Prudence)*
5. I offer empathetic support to Piero during the sessions, creating a safe environment for him to express his concerns. *(Compassionate Medicine)*

Question n°2: Managing expectations in rehabilitation: the fine line between hope and illusion.

You are a physiotherapist working with a 60-year-old patient with advanced lung carcinoma. The patient has undergone several cycles of chemotherapy and radiotherapy and has a significant reduction in respiratory capacity and physical endurance. Despite your recommendations and assessment of his current physical condition, the patient's family, who are involved in the information process along with him, express strong expectations regarding his complete recovery and return to daily activities. The family continues to request an intensification of therapies and aggressive rehabilitation planning in the hope of seeing the patient return to his life before the illness. However, you and the rehabilitation team are aware of the limitations imposed by the disease and the need for an approach focused on improving the patient's quality of life.

1. I focus on the patient's physiotherapy issues, taking into account his specific conditions, and aim to offer a rehabilitative treatment that I believe is clinically appropriate, even if it may go against the expectations of the family. *(Beneficence & Non-Maleficence)*
2. I prioritize the needs and preferences of the patient, even if this may exclude the influence and expectations of the family. I ensure that the patient feels carefully listened to and has an active role in outlining the therapeutic path, ensuring that his choices and desires are at the center of the treatment. *(Self-Determination)*
3. I ensure that the patient receives appropriate care based on achievable short-term outcomes so that my professional performance is effective and does not constitute a waste of healthcare resources. *(Justice & Equity)*
4. I ensure to follow guidelines and best clinical practices in treating the patient, avoiding giving in to family pressures for inappropriate or unnecessary therapies, in order to expose the patient to minimal risk and uphold my professional responsibility. *(Defensive Prudence)*
5. I offer emotional support to the patient's family during this difficult time, demonstrating empathy and understanding for their concerns and hopes, while maintaining open and honest communication about the patient's clinical situation and available therapeutic options. *(Compassionate Medicine)*

Question n°3: The appropriateness of care: clinical benefit and patient welfare.

You are assigned a 58-year-old patient with advanced prostate cancer with widespread bone metastases. The patient has recently undergone a series of treatments to control the cancer but has a high risk of bone fracture due to the metastases. During the initial assessment, you notice that the patient has significant muscle weakness and difficulty maintaining balance. He is eager to start physical therapy to improve his mobility and quality of life, but you are aware of the potential risk of bone fractures during therapeutic exercise sessions.

1. Before starting any treatment, I rely on my experience and expertise to guide therapeutic decisions, knowing how to adjust the workload of the specific clinical case. *(Beneficence & Non-Maleficence)*
2. I actively involve the patient in the decision-making process, providing comprehensive information about the risks and benefits of physical therapy and allowing him to make an informed decision based on his personal preferences and concept of quality of life. *(Self-Determination)*
3. I ensure that the patient's treatment is uniform and complies with the expected standards of care for all patients in similar situations, ensuring fair access to resources and therapies needed to improve the patient's condition. *(Justice & Equity)*
4. I adopt a cautious approach aimed at minimizing risks for the patient, carefully assessing his physical condition and potential complications related to physical therapy, and ensuring strict adherence to clinical guidelines, thus ensuring his safety and my professional commitment. *(Defensive Prudence)*
5. I show empathy and compassion towards the patient, recognizing the physical and emotional challenges he is facing due to his oncological condition. I create an empathetic and welcoming care environment where the patient feels supported and heard. I offer emotional support during the treatment journey, encouraging the patient to express his concerns and needs. *(Compassionate Medicine)*

Question n°4: Research in cancer rehabilitation.

You are participating in a clinical research study aiming to evaluate the effectiveness of a new physiotherapy intervention method to improve the quality of life of advanced-stage cancer patients. However, during the study, you realize that, although some patients also report subjective benefits, the majority experience a deterioration in physical health conditions. How do you approach this situation?

1. I carefully evaluate the study results and, if necessary, temporarily suspend the application of the new technique to avoid further physical harm to the patients and prevent the occurrence of new adverse effects. *(Beneficence & Non-Maleficence)*
2. I inform the patients involved in the study about the adverse effects that are occurring in many cases to ask them if they still wish to continue or discontinue the treatment. *(Self-Determination)*
3. I proceed with the study, considering that the patients were already informed of the potential risks beforehand. The research findings, even if negative, will contribute to the advancement and progress of rehabilitative medicine for the collective good. *(Justice & Equity)*

4. Considering the negative effects occurring in my sample, I consult with the research group to understand if the study could have negative repercussions on our professional responsibility and if it might be better to adopt a more cautious protocol. *(Defensive Prudence)*
5. In the interest of the patients involved and the study, I identify appropriate strategies to provide effective psychological and emotional support to participants who unfortunately are experiencing discomforting situations. *(Compassionate Medicine)*

Question n°5: The cessation of treatment and therapeutic obstinacy.

James, a 10-year-old boy suffering from a rare form of bone cancer, has undergone various therapies, including chemotherapy, radiotherapy, and surgeries, but his condition continues to worsen. Despite his severe symptoms and poor response to treatments, James's parents are determined to continue any type of therapy, hoping for a miraculous recovery. You realize that the treatments you are performing, such as kinesiotherapy to maintain the child's mobility and comfort, may not have any significant effect on the course of the disease and may even cause further suffering to James. How do you behave?

1. I respect and comply with James's parents' wish to continue the therapies, considering that my primary professional duty is to care for and not abandon the patient, always offering the best possible care. *(Beneficence & Non-Maleficence)*
2. I dedicate space and attention to communication with the parents to ensure that they understand that the ongoing therapies may cause more harm than benefit to their son in his clinical condition, and I propose to them to embark on a palliative care pathway. *(Self-Determination)*
3. I follow clinical guidelines and medical protocols for the treatment of pediatric oncology patients, ensuring that all healthcare resources available for James's care are utilized in these cases. *(Justice & Equity)*
4. I understand the emotional difficulty of the parents at this stage and comply with their wish to continue with the treatments to avoid possible conflicts and critical repercussions on the team. *(Defensive Prudence)*
5. I strive to ensure that James receives maximum psychophysical support, including the assistance of experienced personnel in managing the symptoms of an incurable condition. *(Compassionate Medicine)*

Question n°6: The management of therapeutic discontinuation.

You have an 85-year-old patient with advanced glioblastoma who has developed profound right hemiplegia. The prognosis is poor, and the patient is not showing appreciable rehabilitative results. How do you handle this situation?

1. I continue and reshape the intervention with the aim of seeking palliative effects. *(Beneficence & Non-Maleficence)*
2. I speak to the patient to inform them that the intervention has not shown appreciable clinical effects and to suggest other treatments, including palliative options. *(Self-Determination)*
3. I reach out to the coordinator and the team to understand if I should dedicate myself to other patients who may benefit clinically from my intervention. *(Justice & Equity)*
4. I talk to the patient's family to agree on how to proceed so that every decision is shared and does not expose me to possible criticism. *(Defensive Prudence)*
5. I involve the family or caregivers to ensure the patient receives the maximum emotional and affectionate support possible. *(Compassionate Medicine)*

One last question!
Would you be willing to participate in a brief remote interview about the reasons behind the answers you provided?
A conversation with you would give us a deeper understanding of physiotherapists' positions on key bioethical issues in oncological rehabilitation.

Would you be available for an interview?

- Yes
- No

Contact Email Address
Thank you so much for expressing your willingness! Could you please provide us with your email address so we can contact you to organise the interview?
It is important to note that your email address will be treated confidentially.
We will only use it to contact you regarding the interview and will not share it with third parties. By providing your email address, you will significantly help us in organising the interview. For transparency, please note that your responses to this questionnaire will no longer be anonymous to the principal investigator of this study, as they will be linked to your email address.

Email Address:

Supplementary n°10 – Integration of methods

This study employed an explanatory sequential mixed-methods design to integrate quantitative and qualitative data systematically, ensuring a comprehensive analysis of bioethical considerations in cancer rehabilitation.[262] The integration process was structured around three key components: sequence, priority, and transformation of findings.

Sequence: The study followed a two-phase sequential approach. First, the quantitative phase identified trends in physiotherapists' ethical reasoning through an online survey. The results of this phase informed the qualitative phase by selecting participants whose responses strongly aligned with specific bioethical principles. Focus groups were then conducted to explore the reasoning and contextual factors influencing these ethical positions.

Priority: The explanatory sequential design prioritised the quantitative phase, which provided a broad overview of ethical considerations in physiotherapy. The qualitative phase played a complementary role, offering deeper insights into the statistical patterns observed. This approach allowed for the purposeful selection of participants and ensured a nuanced interpretation of ethical decision-making processes.

Integration of Findings: Integration occurred at two key points:

1. Connecting quantitative and qualitative phases: The survey findings guided participant selection for the focus groups, ensuring alignment between identified bioethical principles and qualitative exploration.
2. Synthesising findings (meta-inference): The qualitative insights contextualised and expanded upon the quantitative trends, providing an interpretative layer that enriched numerical data. This process enabled a balanced understanding of the interplay between ethical principles and real-world clinical constraints.

While direct transformation of qualitative data into numerical variables was not implemented, qualitative responses were categorised according to bioethical principles to facilitate structured comparisons with quantitative findings. This ensured coherence and complementarity between the two data sources without compromising the depth of the qualitative analysis.

By systematically integrating these methodological components, the study ensured that its findings were both rigorously substantiated and experientially informed, enhancing the reliability and applicability of the results.

References:

1. John W. Creswell, Vicki L. Plano Clark. *Designing and Conducting Mixed Methods Research*. 3rd ed. Sage; 2018.

Supplementary n°11– The COREQ summary sheet

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care. 2007. Volume 19, Number 6: pp. 349 – 357

Item No	Guide Questions/Description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/ facilitator	Which author/s conducted the interview or focus group?	Pg 3
2. Credentials	What were the researcher's credentials? E.g., PhD, MD	Pg 4
3. Occupation	What was their occupation at the time of the study?	Pg 4
4. Gender	Was the researcher male or female?	Pg 4
5. Experience and training	What experience or training did the researcher have?	Pg 4
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Pg 4
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research?	Pg 4
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Pg 4
Domain 2: study design		
Theoretical framework		
9. Methodological	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Pg 4

Item No	Guide Questions/Description	Reported on Page #
orientation and Theory		
Participant selection		
10. Sampling	How were participants selected? e.g., purposive, convenience, consecutive, snowball	Pg 3
11. Method of approach	How were participants approached? e.g., face-to-face, telephone, mail, email	Pg 3
12. Sample size	How many participants were in the study?	Pg 5
13. Non-participation Setting	How many people refused to participate or dropped out? Reasons?	NA
14. Setting of data collection	Where was the data collected? e.g., home, clinic, workplace	Pg 3
15. Presence of nonparticipants	Was anyone else present besides the participants and researchers?	Pg 4
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Pg 8 & Table 3
Data collection		
17. Interview guide	Were questions, prompts, and guides provided by the authors? Was it pilot tested?	Pg 4
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	Pg 4
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Pg 4
20. Field notes	Were field notes made during and/or after the interview or focus group?	Pg 4
21. Duration	What was the duration of the interviews or focus group?	Pg 4
22. Data saturation	Was data saturation discussed?	N/A
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	N/A
Domain 3: analysis and findings		
Data analysis		

No

Item No	Guide Questions/Description	Reported on Page #
24. Number of data coders	How many data coders coded the data?	Table 2
25. Description of the coding tree	Did the authors provide a description of the coding tree?	Table 2
26. Derivation of themes	Were themes identified in advance or derived from the data?	Table 2
27. Software	What software, if applicable, was used to manage the data?	NA
28. Participant checking	Did participants provide feedback on the findings?	N/A
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g., participant number	Table 4
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Pg 6-7-8-9
31. Clarity of major themes	Were major themes clearly presented in the findings?	Pg 6-7-8-9
32. Clarity of minor themes	Is there a description of diverse cases or a discussion of minor themes?	Pg 6-7-8-9

Publications

1 **Bertoni G**, Serio R, Andreoletti F, et al AB1698 *High-Velocity Low-Amplitude spinal manipulations for the management of lumbar radicular syndrome: a systematic review with meta-analysis* Annals of the Rheumatic Diseases 2023;82:2087.

2 **Bertoni G**, Marchesini E, Zanchettin FE, Crestini M, Testa M, Battista S. *Use of audience response systems (ARS) in physiotherapists' training: a qualitative study*. BMJ Open 2023;13:e073025. doi:10.1136/bmjopen-2023-073025

3 **Bertoni G**, Conti V, Testa M, Coppola I, Costi S, & Battista S.(2023) *Physiotherapists' training in oncology rehabilitation from entry - level to advanced education: A qualitative study.* Physiotherapy Research International, e2060.https://doi.org/10.1002/pri.2060

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5 Ciolan, F., **Bertoni, G**., Crestani, M., Falsiroli Maistrello, L., Coppola, I., Rossettini, G., & Battista, S. (2024). *Perceived factors influencing the success of pain neuroscience education in chronic musculoskeletal pain: a meta-synthesis of qualitative studies.* Disability and Rehabilitation, 1–16. https://doi.org/10.1080/09638288.2024.2398141

6 Serio, R., **Bertoni, G**., Andreoletti, F., Maselli, F., Testa, M. & Battista, S. (2024). *High-Velocity Low-Amplitude Techniques for the Management of Discogenic Lumbosacral Radicular Syndrome: A Systematic Review.* Journal of Manipulative & Physiological Therapeutics, Volume 0, Issue 0. https://dx.doi.org/10.1016/j.jmpt.2024.08.008

7 **Bertoni G**, Leuzzi G, Job M, De Simone M and Testa M (2024) *Exploring knowledge, perception, and use of surface electromyography in physiotherapy post-graduate trainees in Italy: a single center preliminary survey*. Front. Rehabil. Sci. 5:1489927. doi: 10.3389/fresc.2024.1489927

8 **Bertoni G**, Giardulli B, Minozzi B, Coppola I, Furri L, et al. (2024) *The experience of pedagogical training on postgraduate rehabilitation health professionals: A qualitative study.* PLOS ONE 19(12): e0314920. https://doi.org/10.1371/journal.pone.0314920

9 Giardulli B, Furri L, Testa M, Dell'Isola A, **Bertoni G**, Battista S (2024) *Expected features of the course leader in the rehabilitation healthcare professionals' higher education: A qualitative study on students' perspectives.* PLoS ONE 19(12): e0312943. https://doi.org/10.1371/journal.pone.0312943

10 Teresa Paolucci, Letizia Pezz, Federica Bressi, Raffaele La Russa, Bruno Beomonte Zobel, **Gianluca Bertoni**, Giacomo Farì, and Andrea Bernetti. *Exploring ways to improve knee osteoarthritis care: The role of mobile apps in enhancing therapeutic exercise—a systematic review*. DIGITAL HEALTH. 2024;10. doi:10.1177/20552076241297296

11 Giardulli, B., **Bertoni, G**., Coppola, I., Buccarella, O., Testa, M., & Battista, S. (2025). *Pelvic Floor Muscle Training strategies to empower patients: a critical Incident qualitative study*. European Journal of Physiotherapy, 1–14. https://doi.org/10.1080/21679169.2025.2462329

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