

Physiotherapy Practices for Cancer-Related Fatigue: A Concept Analysis

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Abstract: *Cancer-related fatigue is among the most prevalent and functionally disruptive symptoms across the cancer continuum. Although physiotherapy is increasingly recommended within non-pharmacological fatigue management, the phrase physiotherapy practices for cancer-related fatigue is used inconsistently and is often conflated with generic exercise advice, general physical activity, or broader cancer rehabilitation. This paper therefore aimed to clarify the meaning, boundaries, antecedents, consequences, and empirical referents of physiotherapy practices for cancer-related fatigue through a concept analysis. Walker and Avant's method guided the analysis, supported by a structured search of recent peer-reviewed literature and selected foundational works. After screening and duplicate removal, 46 sources were retained for concept-analytic synthesis. The analysis indicates that physiotherapy practices for cancer-related fatigue constitute an assessment-led, individualised, and progressive clinical process that includes fatigue and function assessment, tailored therapeutic exercise, symptom-sensitive modification, education for self-management, monitoring, and coordination across the cancer trajectory. Key antecedents include recognition of clinically relevant fatigue, referral pathways, medical stability, access to physiotherapy services, patient readiness, and supportive care infrastructure. Key consequences include reduced fatigue burden, improved functional capacity, stronger self-management, and wider access to supportive care when flexible delivery models such as home-based and telehealth services are available. The concept should therefore be understood as more than exercise advice alone. Clarifying physiotherapy practices for cancer-related fatigue can strengthen conceptual precision, intervention design, clinical referral, and multidisciplinary supportive care.*

Keywords: cancer-related fatigue; physiotherapy; physical therapy; exercise oncology; rehabilitation; concept analysis; supportive care.

1. Introduction

Cancer-related fatigue is a distressing and persistent symptom that interferes with physical functioning, role performance, and quality of life across treatment, survivorship, and advanced disease (Zhang et al., 2023). Current guidance increasingly recommends exercise-based and rehabilitative management because fatigue is rarely resolved by rest alone and commonly requires structured supportive care input (Bower et al., 2024). Although physiotherapy is frequently invoked

in this context, the literature alternates among the terms exercise, physical activity, rehabilitation, supportive care, and physiotherapy without consistently specifying what the physiotherapist assesses, delivers, adapts, and monitors in practice (Keane et al., 2024). This conceptual imprecision weakens referral pathways, limits intervention reporting, and blurs the boundary between individualised clinical practice and generic lifestyle advice (Stout et al., 2020). The purpose of this paper is therefore to clarify the meaning of physiotherapy practices for cancer-related fatigue, distinguish the concept from neighbouring constructs, identify its defining attributes, antecedents, consequences, and empirical referents, and strengthen its usefulness for nursing, rehabilitation, education, and multidisciplinary supportive care. Recent review evidence also documents a substantial gap between fatigue-management guidelines and routine clinical practice (Witziers et al., 2025).

2. Methodology

This paper used Walker and Avant's (2019) method of concept analysis. The framework was selected because it offers a structured approach for clarifying conceptual meaning through examination of uses, defining attributes, model and related cases, antecedents, consequences, and empirical referents. The purpose was conceptual clarification rather than effect estimation. Accordingly, the literature was analysed to identify recurring elements, conceptual tensions, and operational patterns rather than to generate a pooled quantitative synthesis. A structured search of PubMed, Scopus, Web of Science, and Google Scholar was undertaken to identify literature on cancer-related fatigue, physiotherapy, physical therapy, exercise oncology, rehabilitation, and supportive care. The search prioritised peer-reviewed studies published between January 2020 and December 2024 and used combinations of the terms cancer-related fatigue, physiotherapy, physical therapy, exercise, rehabilitation, fatigue management, symptom assessment, survivorship, palliative care, and telehealth. Foundational works were retained outside the date range where necessary to preserve methodological lineage. Records were screened for direct relevance to the conceptualisation, delivery, assessment, determinants, consequences, or implementation of physiotherapy practices for cancer-related fatigue. After duplicate removal, 738 records were screened by title and abstract, 116 full-text records were assessed for eligibility, and 46 sources were retained for concept-analytic synthesis. The final evidence base is presented in Figure 1 and Table 1.

The retained literature was compared iteratively to identify recurring conceptual components and to distinguish physiotherapy practices for cancer-related fatigue from adjacent constructs such as general physical activity promotion, unsupervised exercise advice, broader cancer rehabilitation, and multidisciplinary supportive care. The analysis emphasised definitional clarity, conceptual boundaries, and applicability across treatment, survivorship, metastatic disease, palliative care, and digitally supported service delivery. Because this is a concept analysis, the PRISMA-style flow diagram is presented only to show the logic of database identification, screening, and eligibility review; the paper should not be interpreted as a full systematic review.

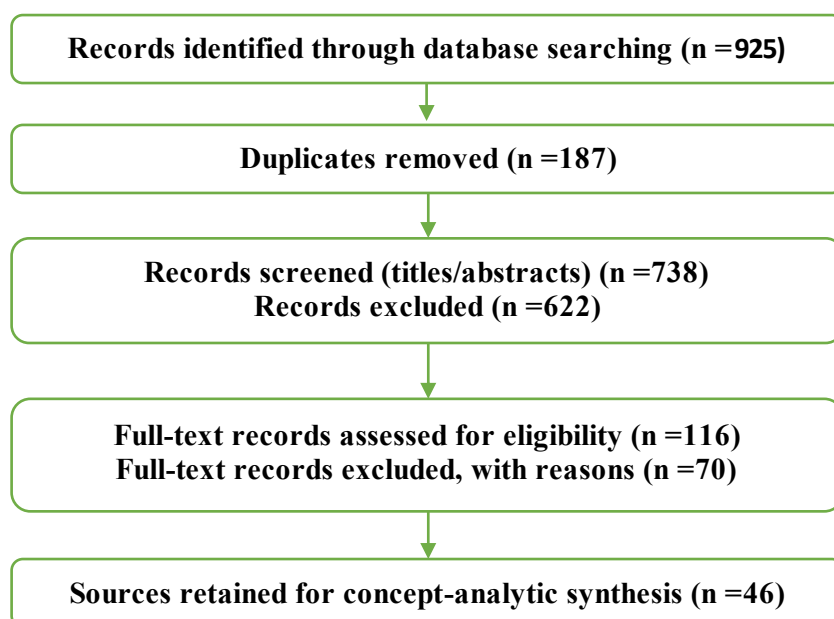


Figure 1. PRISMA-style flow of database screening and selection for the concept analysis.

Table 1. Evidence base informing the concept analysis

No.	Source	Study type	Principal conceptual contribution
1	Agbejule et al. (2022)	Systematic review	Clarified self-management support components for cancer-related fatigue and highlighted education, coaching, and behavioural support as core elements of fatigue care.
2	Batalik et al. (2024)	Systematic review with meta-analysis	Showed that telehealth exercise-based cancer rehabilitation can improve physical activity, cardiorespiratory fitness, and fatigue outcomes.
3	Belloni et al. (2023)	Systematic review of systematic reviews with pooled meta-analysis	Positioned psychosocial interventions as adjunct strategies for improving cancer-related fatigue, helping distinguish them from physiotherapy-led practice.
4	Bò et al. (2023)	Scoping review	Showed that self-managed physical activity among breast cancer survivors can support fatigue management but remains distinct from clinician-led physiotherapy.
5	Bower et al. (2024)	Clinical practice guideline	Positioned structured exercise and supportive care as recommended management strategies for cancer-related fatigue in adult cancer survivors.
6	Brennan et al. (2024)	Feasibility study	Highlighted the role of triage and referral processes in delivering personalised exercise rehabilitation within cancer survivorship care.
7	Broderick et al. (2024)	Pilot feasibility study	Provided preliminary evidence that a physiotherapy-led remotely delivered physical activity programme using wearable technology is feasible for cancer survivors.
8	Campanini et al. (2022)	Scoping review	Clarified the scope of self-managed physical activity for cancer-related fatigue and its boundary from supervised rehabilitation.

No.	Source	Study type	Principal conceptual contribution
9	Chen et al. (2023)	Meta-analysis	Showed that exercise interventions can improve cancer-related fatigue and quality of life across cancer populations.
10	Correia et al. (2023)	Systematic review with meta-analysis of randomized controlled trials	Showed that home-based exercise during active treatment can improve physical fitness, supporting accessible delivery models.
11	Dennett et al. (2024)	Qualitative study	Highlighted the importance of therapeutic connection, accountability, and accessibility in cancer telerehabilitation.
12	Fabi et al. (2020)	Clinical practice guideline	Clarified diagnostic and treatment principles for cancer-related fatigue and reinforced the role of non-pharmacological management.
13	Fairman et al. (2024)	Exploratory mixed-methods study	Showed how integrated clinical exercise oncology services can be planned and evaluated in routine practice.
14	Fernández-Rodríguez et al. (2023)	Randomized clinical trial	Provided applied evidence that multimodal physical exercise and functional rehabilitation can improve fatigue-related autonomy and function.
15	Gauche et al. (2024)	Systematic review	Mapped physiotherapy modalities in oncology palliative care and linked them to patient-reported outcomes.
16	Geng et al. (2023)	Systematic review with meta-analysis	Synthesised the content and effectiveness of physical activity for cancer-related fatigue among colorectal cancer survivors, informing tailored fatigue management.
17	Gennuso et al. (2024)	Systematic review with meta-analysis of randomized controlled trials	Showed that prehabilitation can improve outcomes before cancer treatment and supports early rehabilitation pathways.
18	Gray et al. (2024)	Systematic review with meta-analysis	Supported resistance training as a relevant component of fatigue management in cancer survivors.
19	Harkin et al. (2023)	Systematic review with meta-analysis	Showed that motivational interviewing can support behavioural change and adherence in cancer populations.
20	Herranz-Gómez et al. (2023)	Systematic review with network meta-analysis	Compared exercise modalities during chemotherapy and highlighted the value of low- to moderate-intensity aerobic and resistance exercise.
21	Huizinga et al. (2021)	Systematic review with meta-analysis	Showed that home-based physical activity can alleviate fatigue in cancer survivors, supporting accessible service delivery models.
22	Hussey and Gupta (2022)	Narrative review	Synthesised exercise-based approaches to cancer-related fatigue and underlined implementation considerations during treatment.
23	Jarden et al. (2024)	Systematic review with meta-analysis	Showed limited but relevant evidence for exercise benefits in older adults with hematological malignancies.
24	Kang et al. (2023)	Systematic review with meta-analysis	Quantified the prevalence and severity of cancer-related fatigue, reinforcing its importance as a supportive-care target.

No.	Source	Study type	Principal conceptual contribution
25	Keane et al. (2024)	Scoping review	Demonstrated major variation in how cancer-related fatigue is defined and assessed, strengthening the need for conceptual precision.
26	Kok et al. (2024)	Qualitative study	Explained how tailoring, symptom burden, and practical support influence adherence to supervised exercise during chemoradiotherapy.
27	Lopez et al. (2024)	Clinical program evaluation	Showed that a clinically integrated, group-based, multidimensional rehabilitation programme can improve fatigue-related outcomes and operationalise rehabilitation in practice.
28	MacDonald et al. (2020)	Pilot study	Demonstrated the feasibility of an online multidimensional cancer rehabilitation and exercise programme, supporting home-based delivery models.
29	Marker et al. (2024)	Retrospective analysis	Showed that cancer-related fatigue is associated with objective measures of physical function before and after a clinical exercise programme.
30	Mazlan et al. (2024)	Systematic review	Showed that nurse-led interventions can contribute to cancer-related fatigue management within multidisciplinary supportive-care pathways.
31	Olson et al. (2022)	Observational study	Showed that subjective fatigue and objective function are related but non-identical, supporting multidimensional assessment.
32	O’Riordan et al. (2024)	Systematic review	Extended the discussion of prescribed exercise to metastatic breast cancer and emphasised feasibility and symptom-sensitive planning.
33	Penna et al. (2023)	Systematic review with meta-analysis	Showed that physical rehabilitation during cytotoxic treatment reduces general and physical fatigue.
34	Rocco et al. (2024)	Scoping review	Mapped telemedicine applications for cancer rehabilitation and supported remote service delivery pathways.
35	Rothmund et al. (2024)	Comparative measurement study	Compared fatigue patient-reported outcome measures and showed substantial variation in the content captured by different instruments.
36	Schmitz et al. (2024)	Implementation initiative	Showed that triage and referral systems can help make exercise and rehabilitation referrals standard practice in oncology.
37	Schmocker et al. (2024)	Scoping review	Identified barriers and facilitators to physical activity in head and neck cancer, reinforcing the need for context-sensitive practice.
38	Stout et al. (2020)	Clinical pathway paper	Established a screening and referral framework for personalised exercise oncology interventions.
39	Wagner et al. (2024)	Cross-sectional survey	Demonstrated implementation and training gaps in routine cancer-related fatigue management among physicians.
40	Walker and Avant (2019)	Methodological text	Provided the analytic framework that structured the clarification of attributes, antecedents, consequences, cases, and empirical referents.

No.	Source	Study type	Principal conceptual contribution
41	Welfare et al. (2025)	Scoping review	Critiqued study characteristics, quality, and reporting in the cancer prehabilitation literature, informing interpretation of rehabilitation evidence.
42	White et al. (2025)	Scoping review	Identified triage tools to prioritise physical health services after a cancer diagnosis, supporting referral and service allocation decisions.
43	Witziers et al. (2025)	Mixed-methods systematic review	Documented the gap between fatigue-management guidelines and routine clinical practice.
44	Zdun-Ryżewska et al. (2025)	Systematic review	Showed persistent heterogeneity in the conceptualisation and measurement of cancer-related fatigue across research contexts.
45	Zhang et al. (2023)	Systematic review of systematic reviews	Synthesised higher-level evidence on exercise interventions for cancer-related fatigue and reinforced overall effectiveness while highlighting reporting variation.
46	Zhou et al. (2022)	Overview of systematic reviews	Summarised evidence for exercise interventions in breast cancer-related fatigue and informed the model case and intervention rationale.

3. Results

3.1 Conceptual uses and boundaries

Across the retained literature, physiotherapy practices for cancer-related fatigue denote a structured clinical response to fatigue rather than a simple recommendation to “be active” (Brennan et al., 2024). The concept encompasses assessment, treatment planning, therapeutic exercise prescription, symptom-sensitive progression, functional retraining, education, and follow-up across oncology care settings. A consistent theme is that physiotherapy practice is defined not only by intervention content but also by the clinical reasoning that links fatigue assessment to individualised management decisions (Penna et al., 2023). Conceptual boundary work is essential because the term overlaps with, but is not reducible to, physical activity, exercise oncology, cancer rehabilitation, or supportive care. Physical activity may occur without clinical assessment; exercise oncology often refers to the wider evidence base on exercise in cancer; and cancer rehabilitation encompasses multiple disciplines and outcomes beyond fatigue (Geng et al., 2023). Physiotherapy practices for cancer-related fatigue refer more specifically to the physiotherapist-led or physiotherapy-informed process through which fatigue is assessed, safety is judged, exercise or functional interventions are tailored, and response is monitored over time (Herranz-Gómez et al., 2023). Scoping reviews of self-managed physical activity further show that independent exercise behaviour is not synonymous with clinician-led fatigue management (Campanini et al., 2022).

3.2 Defining attributes

Six defining attributes were repeatedly evident in the literature. First, physiotherapy practices for cancer-related fatigue begin with targeted assessment of fatigue severity, functional limitation, symptom burden, treatment status, and safety considerations (Marker et al., 2024). Second, they involve individualised prescription rather than uniform exercise advice. Third, they commonly include multimodal intervention components such as aerobic training, resistance training, mobility work, breathing or balance exercises, and task-oriented functional practice as clinically indicated (Gennuso et al., 2024). Fourth, they include patient education and support for self-management

(Agbejule et al., 2022). Fifth, they require ongoing monitoring and adjustment, including progression or de-escalation according to symptoms and tolerance (Broderick et al., 2024). Sixth, they are coordinated with the broader oncology trajectory, including medical treatment schedules, survivorship needs, and palliative priorities (Gauchez et al., 2024). Recent meta-analytic evidence also supports resistance training as a relevant component of fatigue management in cancer survivors (Gray et al., 2024).

These attributes show that physiotherapy practices for cancer-related fatigue are not a single technique but a clinically reasoned chain of practice. Exercise without assessment may be unsafe or poorly targeted. Assessment without progression has limited therapeutic value. Education without follow-up may not translate into meaningful self-management. The concept is therefore best understood as an integrated, adaptive, and context-sensitive clinical process rather than an isolated exercise session (Hussey & Gupta, 2022). Self-managed activity can be valuable, but it does not replace individualised clinical reasoning and follow-up (Bò et al., 2023).

Table 2. Analytic summary of the concept

Domain	Synthesis
Defining attributes	Fatigue and function assessment; individualised prescription; multimodal therapeutic exercise; education for self-management; monitoring and progression; coordination across the cancer trajectory.
Antecedents	Recognition of clinically relevant fatigue, referral pathways, medical stability, access to physiotherapy, patient readiness, and supportive service infrastructure.
Consequences	Reduced fatigue burden, better functional capacity, stronger self-management, improved participation, and greater continuity of supportive care.
Risks when absent	Normalisation of fatigue, vague exercise advice, functional decline, deconditioning, delayed referral, and inequitable access to rehabilitation support.
Empirical referents	Fatigue PROMs, quality-of-life scales, functional capacity tests, adherence records, documented exercise progression, and symptom-responsive review notes.

3.3 Model, borderline, and contrary cases

A model case is a woman receiving chemotherapy for breast cancer who reports persistent fatigue and reduced walking tolerance. A physiotherapist evaluates fatigue severity, current treatment effects, balance, lower-limb strength, and daily function; prescribes a tailored combination of low- to moderate-intensity aerobic and resistance exercise; teaches pacing and symptom monitoring; modifies the programme around treatment-related fluctuations; and reviews progress using fatigue and function measures (Zhou et al., 2022). This case reflects all defining attributes because assessment, tailoring, active treatment, monitoring, education, and progression are all present. A borderline case is a patient who receives a leaflet encouraging daily walking and stretching but receives no fatigue assessment, no progression plan, and no follow-up. This person receives exercise advice, but not full physiotherapy practice for cancer-related fatigue. A contrary case is a patient with clinically significant fatigue who is told only to rest, receives no functional assessment, and is never referred for rehabilitation support. That pattern reflects unaddressed fatigue rather than physiotherapy practice.

3.4 Antecedents

The most consistent antecedents of physiotherapy practices for cancer-related fatigue are recognition of clinically relevant fatigue, access to referral pathways, and sufficient medical stability to participate in assessment and intervention (White et al., 2025). In addition, physiotherapy practice depends on the availability of rehabilitation personnel, service models that permit symptom screening and follow-up, and a clinical culture that treats fatigue as manageable rather than inevitable (Fabi et al., 2020). Integrated exercise oncology service evaluations also highlight the importance of referral processes, staffing, and implementation-ready pathways for routine supportive care delivery (Fairman et al., 2024). Patient readiness and contextual feasibility are also antecedents. Motivation, symptom variability, transport, digital access for remote delivery, treatment schedules, and perceived relevance all influence whether patients can enter and sustain a physiotherapy programme. Qualitative and implementation-oriented studies show that adherence is shaped by tailoring, accountability, practical support, and the fit between intervention demands and the lived realities of treatment (Kok et al., 2024). Behaviour-change evidence also suggests that motivation, practical barriers, and clinician support influence participation and adherence in cancer populations (Harkin et al., 2023).

3.5 Consequences

When physiotherapy practices for cancer-related fatigue are present, patients are more likely to experience reduced fatigue severity, improved walking tolerance and strength, better functional independence, and greater confidence in symptom management (Jarden et al., 2024). Systematic reviews, randomised trials, and service-delivery studies consistently indicate that structured and supervised interventions can improve fatigue-related outcomes when compared with usual care or non-specific advice (Penna et al., 2023). Telehealth and home-based delivery models extend these benefits by improving access and continuity for patients who cannot reliably attend centre-based services, although individualised monitoring remains important (Batalik et al., 2024). Exercise meta-analyses more broadly support benefits for fatigue and quality of life across cancer populations (Chen et al., 2023). Home-based physical activity programmes have also been associated with fatigue relief in cancer survivors (Huizinga et al., 2021). Home-based exercise during active treatment can improve physical fitness when programmes are appropriately structured (Correia et al., 2023). Broader telemedicine literature in cancer rehabilitation likewise supports remote delivery as an access-enabling model when monitoring pathways are maintained (Rocco et al., 2024). The converse is equally important: when physiotherapy practices are absent, fatigue is more likely to be normalised, under-assessed, and managed through vague advice that fails to address functional decline, deconditioning, and avoidable participation restrictions.

3.6 Empirical referents

The literature shows that physiotherapy practices for cancer-related fatigue are measurable, but no single indicator fully captures the concept. Empirical referents include fatigue-specific patient-reported outcome measures such as the FACIT-F, EORTC QLQ-FA12, Brief Fatigue Inventory, and broader quality-of-life scales, together with functional tests such as the 6-minute walk test, sit-to-stand performance, strength measures, adherence records, and documented exercise progression. Recent review work also shows that cancer-related fatigue itself is defined and measured inconsistently, reinforcing the need to pair symptom measures with functional and process indicators when evaluating physiotherapy practice (Keane et al., 2024). Objective performance and physiological measures are informative, but they do not substitute for patient-reported fatigue because subjective burden and observed capacity do not map neatly onto one another (Olson et al., 2022).

Comparative content analyses of fatigue patient-reported outcome measures also show substantial variation in what different instruments capture (Rothmund et al., 2024). A recent systematic review likewise identified persistent conceptual and measurement heterogeneity across diagnostic, mechanistic, and intervention research on cancer-related fatigue (Zdun-Ryżewska et al., 2025).

4. Discussion

The analysis indicates that physiotherapy practices for cancer-related fatigue should be conceptualised as an assessment-led clinical process rather than as generic exercise promotion (Schmitz et al., 2024). This distinction matters because many oncology documents recommend exercise broadly, but patients do not receive physiotherapy practice unless exercise is translated into individualised prescription, safety adaptation, education, and follow-up. In that sense, the defining core of the concept lies in clinical reasoning and responsive delivery, not simply in the presence of movement or activity (Bower et al., 2024). For nursing practice, the implication is direct. Nurses are often the first professionals to hear patients describe persistent fatigue, reduced tolerance for daily activities, or treatment-related functional decline. Clear conceptualisation supports more precise screening, timely referral, reinforcement of self-management plans, and better communication with physiotherapists about symptom trajectories, barriers to participation, and warning signs that require programme modification. It also helps multidisciplinary teams distinguish between telling patients to exercise and providing actual rehabilitation support (Wagner et al., 2024). Systematic review evidence further suggests that nurse-led interventions can contribute meaningfully to fatigue management when embedded within multidisciplinary supportive-care pathways (Mazlan et al., 2024). For research and service design, the concept analysis supports more explicit reporting of who delivers the intervention, how fatigue and function are assessed, how exercise is progressed, how symptom fluctuations are handled, and which outcomes represent clinical success (Welfare et al., 2025). Future studies should continue to test flexible models such as metastatic, home-based, and telehealth programmes, but they should avoid labelling all exercise exposure as physiotherapy practice unless the assessment and monitoring features of the concept are genuinely present (O’Riordan et al., 2024). This paper is a concept analysis rather than a full systematic review, and its claims should be interpreted accordingly. The objective was conceptual clarification, not pooled effect estimation. Nevertheless, the current evidence base is sufficient to support clearer conceptual boundaries and more disciplined use of the term in supportive cancer care.

5. Conclusion

Physiotherapy practices for cancer-related fatigue are best understood as a multidimensional, assessment-led, and individualised clinical process through which fatigue is evaluated, targeted exercise and functional interventions are delivered, symptom responses are monitored, and self-management is supported across the cancer trajectory. The concept is broader than exercise advice alone and narrower than the wider fields of supportive care and cancer rehabilitation. Its antecedents include recognition of fatigue, referral access, medical stability, patient readiness, and service capacity. Its consequences include reduced fatigue burden, better functional performance, stronger self-management, and improved access to structured supportive care. Clarifying the concept strengthens nursing scholarship, rehabilitation practice, interdisciplinary referral, and the design of future fatigue-management interventions.

5.1 Acknowledgement

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5.2 Conflict of Interest Statement

The authors declare that there is no conflict of interest related to this study.

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