Barriers to and facilitators of implementation of the integration of oncology and palliative care in daily practice: a systematic review

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Abstract

Background: Palliative care (PC) is widely recognized as an essential part of oncology care, and multiple academic societies have developed strong recommendations regarding the implementation of the integration of oncology and PC (IOP) in daily practice. However, IOP implementation is a slow- evolving process, and its barriers and facilitators have not yet been comprehensively identified. This systematic review aimed to clarify the barriers to and facilitators of IOP in the context of treating patients with advanced cancer.

Methods: We searched Ovid MEDLINE, Embase, and Cumulative Index of Nursing and Allied Health Literature until June 3, 2017. We included original articles, narrative and systematic reviews, guidelines, editorials, commentaries, and letters. After title and abstract screening by two of five independent reviewers, we analyzed the data qualitatively using inductive content analysis and a consolidated framework for implementation research.

Results: We obtained 3,304 articles, of which 60 met the predefined eligibility criteria. The numbers and proportions of original and review articles, guidelines, and other article types were 21 (35%), 30 (50%), 3 (5%), and 7 (12%), respectively. Five categories emerged regarding both the barriers to and facilitators of IOP: intervention characteristics, outer settings, inner settings, individual characteristics, and process. The representative barriers were limited availability of and access to PC services, limited educational opportunities for PC providers, insufficient reimbursement and research funding toward PC services, focus on cure rather than care (patients and their caregivers), and insufficient communication between oncology and PC staff (n = 26, 16, 14, 13, and 7, respectively). The representative facilitators were improvement of the availability of and access to PC services, development of an optimal integrated care model, enrichment of educational opportunities regarding PC (healthcare professionals), and initiatives by government and academic societies (n = 24, 18, 25, and 7, respectively).

Conclusions: This study clarified the multi-level barriers to and facilitators of the implementation of IOP. Educational and financial support from the government and academic societies appears essential, and further effort to develop and investigate the implementable care delivery model is warranted.

Registration: PROSPERO:CRD42018069212

Background

Palliative care (PC) is a multidisciplinary approach aimed at managing symptom burdens, supporting decision-making, and improving the quality of life (QOL) of patients with life-threatening illnesses, including advanced cancer, and their families [1–4]. Traditionally, PC has been delivered late in disease courses to patients with advanced cancer who have either been hospitalized or are receiving home care rather than being treated at outpatient clinics, commonly after palliative chemotherapy discontinuation [5, 6]. Notably, multiple studies have found an association between late referral to PC programs and negative

outcomes, including aggressive treatment within the few weeks prior to death, deterioration in patients' QOL and comfort, and increased medical costs [4, 7–15].

In recent decades, PC has been increasingly recognized as an essential component of worldwide oncology care; this is known as the integration of oncology and PC (IOP) [16]. In practice, it entails inpatient and outpatient care by a multidisciplinary PC team initiated during the early disease courses of patients who are receiving active cancer treatment [16, 17]. Clinical IOP trials have captured the attention of the scientific community, demonstrating that early PC could improve the QOL, symptom burden, and overall survival of patients with advanced cancer [18]. As a result, many organizations, such as the American Society of Clinical Oncology and European Society for Medical Oncology, actively promote IOP implementation in current practice [16, 17]. However, despite growing evidence and recommendations in favor of IOP, the introduction thereof in daily oncology practice has been a slow-evolving process and there is no standardized care delivery model for IOP.

In the scientific context, IOP can be classified as part of care delivery research [19]. Care delivery evaluates various aspects of the clinical environment at multiple levels, such as clinical resources, costs, regional alliances, medical insurance systems, policies, and administrative projects, in addition to issues regarding healthcare professionals (HCPs) and institutional stakeholders [19]. Previous studies have described several levels of barriers to IOP; for example, misconceptions or fear related to PC and the lack of a standardized care delivery pathway; there are concerns that HCPs, patients, hospital stakeholders, and policymakers are facing challenges around IOP implementation in daily practice [20–27]. However, to date, the barriers to and facilitators of IOP as regards cancer care delivery have not been comprehensively classified across multiple levels.

Recently, attention has been focused on the importance of collaborating with implementation science in the context of care delivery research [19, 28]. Implementation science highlights the process of “how” to implement, sustain, and disseminate evidence-based interventions rather than the aspect of efficacy [29–32]. However, there are concerns that in cancer care delivery, practical knowledge and research in terms of scientific implementation and dissemination may have been limited thus far. These factors may have been critical to the slow evolution of IOP in daily practice. Therefore, systematically organizing the barriers to and facilitators of IOP using an implementation research framework can potentially clarify insights into effective and implementable measures for care delivery to patients with cancer [33, 34].

This systematic review aims to clarify the multi-level barriers to and facilitators of IOP implementation in the context of treating patients with advanced cancer and is guided by the following research questions: 1. What are the barriers to IOP implementation in daily practice? 2. What are the facilitators of IOP implementation that potentially contribute to the development of care delivery models and their implementation strategies?

Methods

Protocol and registration

This systematic review was registered in the International Prospective Register of Systematic Reviews with the registration number CRD42018069212. Where applicable, this systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Additional Table 1) [35]. Based on the national ethical guidelines for epidemiological studies in Japan, the present systematic review is outside of the scope reviewed by local ethical committees.

Eligibility criteria

We defined IOP as the reception/provision of dedicated PC services for patients with advanced cancer early in the disease course, in combination with active treatment [16]. To systematically understand the barriers to and facilitators of IOP implementation, we considered it important to examine both quantitative and qualitative reports. Only reports that investigated the barriers to and facilitators of IOP in adult patients (older than 18 years) with advanced cancer were considered for inclusion. In general, we included original articles, narrative and systematic reviews, guidelines, editorials, commentaries, and letters. To the best of our knowledge, there were no review articles that combined IOP within the framework of implementation research, previous review papers were also considered important sources of information, and we decided to include them in this review. We excluded non-English or protocol articles, conference abstracts, and studies about non-cancer patients, early-stage cancer patients, cancer survivors, pediatric oncology patients (younger than 18 years), complementary therapy or integrated medicine, current IOP status or IOP outcomes, and general PC issues (not specific to IOP).

Information sources and search strategy

Our health sciences librarian (T.S.) searched all citations in the Ovid MEDLINE, Embase, and Cumulative Index of Nursing and Allied Health Literature databases from database-specific starting dates to May 31, June 3, and June 3, 2017, respectively. Our search strategies are described in Additional Table 2. The Ovid MEDLINE search strategy was as follows; 1) exp Palliative Care/, 2) exp Neoplasms/, 3) exp "Delivery of Health Care, Integrated"/, 4) 1 and 2 and 3, 5) ((integration\$ or integrate\$ or integrati\$ or early or earli\$) adj5 (palliative or supportive) adj20 (cancer\$ or tumor\$ or tumour\$ or neoplas\$ or malignan\$ or carcinoma\$ or oncolog\$)).tw. 6) 4 or 5.

Study selection

Following the search, two of five independent reviewers (Y.U., Y.H., Y.K., M.M., and M. H.) read the identified studies' titles and abstracts. If it was clear that the study's title and abstract did not meet the selection criteria, the study was removed. Multiple reports from the same study were linked. The reviewing authors were not blinded to the authors' names, journal of publication, or study results. Any disagreements regarding the eligible studies were resolved through consensus, and if necessary, through consultation with a sixth reviewer (T.M).

Data collection and extraction

We retrieved the full manuscripts for the articles of interest and excluded publications that were not relevant to the barriers to and facilitators of IOP. One investigator reviewed all the articles for consistency (Y. U.), and the other four investigators (Y.K., M.M., Y. H., and M. H.) reviewed one-fourth of the articles

independently. We collected the following data: publication details (i.e., article type, country of origin, year of publication, author names), and barriers to and facilitators of IOP. After the data were retrieved, themes from each paper relating to the research questions were identified and coded independently by Y.U., Y.K., M.M., Y.H., and M.H. using the inductive content analysis method [36]. These themes were classified using a consolidated framework for implementation research [34]. The framework consists of five areas and 39 constructs that cover the perspectives to consider in identifying factors that hinder or facilitate the implementation of IOP. Themes and codified frameworks were identified separately for barriers and facilitators. The central themes were reviewed and agreed upon by all authors.

Statistical analysis

Frequencies and percentages were used to summarize the data. Microsoft Excel 2016 MSO (16.0.13530.20418; Microsoft, Redmond, WA, United States) was used for all the qualitative analyses and descriptive statistics (e.g., percentages).

Results

The PRISMA flow diagram for this review is shown in Fig. 1. We obtained 3,304 records, of which 900 were excluded owing to duplication. The authors conducted a title and abstract screening of 2,134 records and judged 2,068 records ineligible. 66 records were full-text reviewed, of which six were excluded and 60 met the predefined eligibility criteria. The numbers and proportions of original and review articles, guidelines, and other articles included in the qualitative analysis were 21 (35%), 30 (50%), 3 (5%), and 7 (12%), respectively. The details of the literature are presented in Table 1 and Additional Table 3.

Five major categories emerged as barriers to IOP: (1) intervention characteristics, (2) outer setting, (3) inner setting, (4) characteristics of the individuals, and (5) process (Table 2). The intervention characteristics included limited research evidence regarding IOP and the lack of a standardized integrated care model ($n = 5$, and 2, respectively). Regarding the outer setting, patients' negative attitude toward PC, that is, misunderstanding what PC is; preference toward cure rather than care, the cure-care dichotomy; and the term "PC" itself ($n = 16$, 13, 6, and 3, respectively) was described. In addition, regarding the lack of policy support, insufficient reimbursement and research funding toward PC services, and insufficient government and academic support ($n = 14$ and 9, respectively) were mentioned. Regarding the inner setting, in addition to the culture of cure rather than care ($n = 9$), a shortage of PC-related clinical resources (limited availability of and access to PC services, lack of optimal referral criteria for PC services, and limited educational opportunities for PC providers [$n = 26$, 18, and 16, respectively]) were frequently mentioned. In addition, regarding individual characteristics, attitude toward PC (misunderstanding what PC is, reluctance to discuss issues concerning advance care planning and PC referral, therapeutically driven attitude, and learned helplessness [$n = 13$, 12, 6, and 6, respectively]), and the relationship between the oncology and PC departments (concerns that PC referral diminishes patients' hope, concerns about the expertise of PC specialists, and concerns about loss of autonomy [$n = 15$, 8, and 5, respectively]) were mentioned.

Five major categories emerged for the facilitators of IOP: (1) intervention characteristics, (2) outer setting, (3) inner setting, (4) characteristics of the individuals, and (5) process (Table 3). Regarding intervention characteristics, the importance of the development of an optimal integrated care model was mentioned (n = 18). The importance of political administration (initiatives by government and academic societies, reimbursement reform and research funding for PC services, and changing PC service branding [n = 7, 6, and 3, respectively]) were frequently mentioned in the outer setting. Regarding the inner setting, enhancement of PC-related clinical resources (improvement of availability of and access to PC services, availability of clinical guidelines for PC, improvement of the availability of symptom-needs screening and assessment tools and referral criteria for PC consultations [n = 24, 15, 12, and 10, respectively]), logistics improvement (timely communication between the oncology and PC teams, coordination of the multidisciplinary approach, name change to “supportive care” [n = 15, 10, and 16, respectively]), and education (enrichment of educational opportunities regarding PC [n = 25]) were identified. The awareness of what PC is and its importance (n = 16) was emphasized with respect to individuals’ characteristics.

Discussion

This study clarified the barriers to and facilitators of IOP implementation in daily clinical practice using a framework for research implementation. These findings could facilitate the development of IOP care delivery models that have the potential to provide comprehensive solutions on multiple levels. We found that significantly limited PC resources and negative attitudes toward PC had critical effects on IOP promotion. Governmental prioritization of these issues, as well as the development of an implementable care delivery model, were frequently mentioned critical solutions.

To overcome sparse PC resources and negative attitudes toward PC from patients, caregivers, and HCPs, government efforts seem critical. This study revealed that many previous reports described serious shortages of clinical resources, including the number of oncologists, PC specialists, and specialized nurses, as well as the budget and reimbursement for these services. Since such issues are beyond the scope of individual efforts by HCPs, government and administrative effort seems crucial. In addition, HCPs, patients, and families have negative views of PC. PC should always be an option; it should not be seen as a pervasive or even conflicting concept like the cure-care dichotomy [37, 38]. Educating patients, their families, and HCPs on the essential significance of PC is an important task. The government has made several efforts to mitigate these issues, such as HCP education and policy awareness activities, and these have yielded attractive results [39–41]. However, since the effects of these interventions are not immediate, continuous efforts are warranted.

Our results also demonstrate the importance of developing an effective and implementable care delivery model for IOP. Various care delivery models have been proposed, but standardization remains to be achieved [20, 21, 42, 43]. In a clinical trial by Temel et al., a landmark study, a specialized PC team conducted symptom relief, treatment goal setting and decision support, care coordination, and so on at least once a month. The American Society of Clinical Oncology’s 2017 Guidelines for the Integration of Oncology and Palliative Care also provide strong recommendations on PC delivery strategies [14, 16].

However, the implementation of this care delivery model seems unrealistic in the context of many patients with advanced cancer owing to insufficient clinical resources; thus, effective strategies to suppress the utilization of clinical resources need to be developed. In recent years, there have been clinical trials on symptom monitoring using information technology [44, 45]. In addition, strategies to improve patient coping skills, leading to improved self-care, are promising [46, 47]. The development of IOP-related care delivery models that take into account real-world barriers and facilitators as well as accumulation of knowledge on implementation and dissemination is expected. [48].

There were several limitations to this study. First, since this study included a qualitative analysis of the systematically identified literature, the frequency described in the literature does not directly indicate the impact of the problem in the clinical field. Second, the external validity of the results was not constant. Care delivery can be influenced considerably by field and community conditions, as well as country-specific healthcare systems. Particularly, as literature from regions other than Europe and North America was very limited in the current review, further research from other countries and regions is required. Lastly, the literature search for this study concluded four years ago. This was because it took a considerable amount of time to identify relevant studies and qualitative analysis, especially to identify the most suitable analytic framework. However, the findings provide important insights for current oncology practice.

Conclusions

This study revealed that PC resources are severely limited and that negative attitudes toward PC may significantly hinder IOP implementation. Despite cumulative evidence of the value of IOP, the gap between practice and clinical trials may be impeding its rollout and in-practice application. This situation warrants the development of an implementable IOP model that takes practical barriers into consideration. Furthermore, government/administrative authorities can support its implementation since they oversee the allocation of PC resources. A synchronized multi-level effort is essential to achieve the implementation of IOP in daily practice.

Abbreviations

PC: palliative care

IOP: integration of oncology and palliative care

HCP: healthcare professional

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Declarations

Ethics approval and consent to participate

Based on the national ethical guideline for epidemiological studies in Japan, the present systematic review is outside of the scope reviewed by local ethical committees.

Consent for publication

Not applicable.

Availability of data and materials

The data/materials utilized in this study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Y.U. Conceptualization, Methodology, Validation, Formal analysis, Investigation, Resources, Data Curation, Writing, Project administration, Funding acquisition

Y.H. Conceptualization, Validation, Formal analysis, Investigation

Y.K. Methodology, Validation, Formal analysis, Investigation

M.M. Conceptualization, Validation, Formal analysis, Investigation

M.H. Conceptualization, Validation, Formal analysis, Investigation

T.S. Methodology, Resources

T.E.N. Conceptualization, Supervision

C.S. Conceptualization, Supervision

S.T. Conceptualization, Supervision

T.M. Conceptualization, Methodology, Supervision, Project administration, Funding acquisition

M.M. Conceptualization, Methodology, Supervision, Project administration, Funding acquisition

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Authors' information

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Tables

Table 1: Characteristics of included literature

	n (%)
Article type	
Original Article	21 (35)
Review	30 (50)
Guideline	3 (5)
Systematic Review	3 (5)
Editorial	3 (5)
Letter	1 (2)
Country of Origin	
USA	43 (72)
Germany	5 (8)
Australia	3 (5)
Canada	2 (3)
Denmark	2 (3)
Belgium	2 (3)
Others	4 (7)
Year of publication	
2000-2009	3 (5)
2010-2014	38 (63)
2015-2017	20 (33)

Table 2: Identified barriers regarding implementation of integration of oncology and palliative care

Limited institutional budget for palliative care services	6
Readiness for implementation (access to information and knowledge)	
Lack of optimal referral criteria for palliative care services	18
Challenges in accurate prognosis prediction	6
Limited awareness of palliative care availability	5
Lack of standardized symptom-needs assessment tools	2
Networks and communications	
Insufficient communication between oncology and palliative care staff	7
Culture	
Culture of cure rather than care (healthcare professionals)	9
<hr/>	
Characteristics of individuals	
<hr/>	
Knowledge and beliefs about the intervention	
Concerns that palliative care referral deteriorates patients' hope	15
Misunderstanding what palliative care is (healthcare professionals)	13
Concerns about the expertise of palliative care specialists (oncologists)	8
Self-efficacy	
Learned helplessness (oncologists)	6
Concerns about loss of autonomy (oncologists)	5
Belief that providing palliative care is an integral part of their professional role and responsibility (oncologists)	4
Individual stage of change	
Reluctance to discuss issues concerning advance care planning and palliative care referral (oncologists)	12
Therapeutically driven attitude (oncologists)	6

Other personal attributes

Limited primary palliative care skills (healthcare professionals)	8
Compassion fatigue and burnout (oncologists)	5
Long relationships between patients and oncologists (oncologists)	2
Lack of understanding of nature of disease (palliative care staff)	2

Process

Reflecting and evaluating

Lack of quality indicators	2
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Table 3: Identified facilitators regarding implementation of integration of oncology and palliative care

	<i>N</i>
Intervention characteristics	
Adaptability	
Development of optimal integrated care model	18
Evidence strength and quality	
Robustness of evidence regarding integration of oncology and palliative care	7
Outer setting	
External policies and incentives	
Initiatives by government and academic societies	7
Reimbursement reform and research funding for palliative care services	6
Changing the branding of palliative care services	3
Palliative care education for undergraduate students	1
Cosmopolitanism	
Relationship building across multiple health systems	3
Inner setting	
Structural characteristics	
Improvement of the availability of and access to palliative care services	24
Name change to "supportive care"	16
Improvement of the availability of symptom-needs screening and assessment tools	12
Development of automatic palliative care referral trigger	5
Readiness for implementation (access to information and knowledge)	
Enrichment of educational opportunities regarding palliative care	25

(healthcare professionals)

Availability of clinical guidelines for palliative care 15

Referral criteria for palliative care consultation 10

Availability of accurate prognosis prediction tool 5

Enrichment of educational opportunities regarding disease modifying treatments (palliative care specialists) 5

Raising awareness of palliative care availability 3

Implementation climate (compatibility)

Awareness of what palliative care is and its importance (patients and caregivers) 17

Networks and communications

Timely communication between oncology and palliative care team 15

Coordination of multidisciplinary approach 10

Culture

Changing culture regarding earlier use of palliative care 10

Implementation climate (tension for change)

Imminent needs (patients and caregivers) 7

Institutional tension to improve quality of care 5

Characteristics of individuals

Knowledge and beliefs about the intervention

Awareness of what palliative care is and its importance (healthcare professionals) 16

Other personal attributes

Attendance at interdisciplinary tumor board conferences (palliative care staff) 6

Rapport building with patients and caregivers (oncologists) 3

Process	
Reflecting and evaluating	
Presence of quality indicators	1

Figures

Figure 1

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [AdditionalTable1PRISMAChecklist.doc](#)
- [AdditionalTable2LiteratureSearchStrategy.docx](#)
- [AdditionalTable3Finalliteraturesinthereview.docx](#)