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Barriers and enablers of research engagement among multidisciplinary cancer care professionals in Ireland: A mixed-methods study

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ABSTRACT

Rationale: Nurses and health and social care professionals (HSCPs) are integral to multidisciplinary cancer care and are well-positioned to engage in research that enhances patient outcomes. However, unlike medical professionals, non-medical clinicians often face substantial barriers to research engagement, including limited institutional support, time constraints, and lack of research training and mentorship.

Aim: To explore the barriers and enablers to research activity among nurses and HSCPs working in clinical cancer care settings in Ireland.

Methods: A mixed methods design was used. Phase 1 consisted of a stakeholder consultation workshop (n = 14) to qualitatively identify research barriers and enablers. Phase 2 involved a cross-sectional questionnaire (n = 157) assessing participants' research capacity, activity, and influencing factors using the Research Capacity and Culture (RCC) tool and additional study-specific items.

Results: Key barriers identified included lack of protected research time (64.3 %), funding (65.0 %) and resourcing/support (64.3 %). Participants reported moderate individual research skills, particularly in literature review and data collection, but lower confidence in research leadership activities, including grant writing, budgeting, and protocol development. Despite barriers, 73.9 % of participants expressed interest in research activities, especially in data collection, analysis, and project leadership. Access to academic-clinical partnerships, supportive management, and training opportunities were cited as critical enablers.

Conclusions: There is significant untapped potential for research engagement among non-medical cancer care professionals in Ireland. Organizational investment in protected research time, mentorship, and targeted training is essential to build research capacity, support clinician-led research, and improve outcomes for patients and healthcare systems alike.

1. Background

The advancement of cancer care relies heavily on the integration of research into clinical practice, enabling healthcare professionals to provide evidence-based interventions that improve patient outcomes [1]. Research integration is also central to modern drives toward EU comprehensive cancer centres and Academic Health Science Systems. Multidisciplinary teams, including nurses, physiotherapists, occupational therapists, and other health and social care professionals (HSCPs), are central to delivering comprehensive care to patients with cancer. These professionals are uniquely positioned to identify clinical challenges and contribute to research that addresses the complexities of cancer treatment and survivorship [2].

Despite the crucial role of research in enhancing healthcare delivery, many non-medical clinicians face significant obstacles in engaging with research activities. Unlike medical professionals, who often have well-established clinical and research career pathways, nurses and HSCPs frequently encounter ill-defined opportunities for research involvement [3,4]. This disparity not only limits individual professional development but also restricts the potential for innovation in patient care provided by the majority of the clinical workforce. [2,5]

Organisational barriers play a significant role in research

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engagement among healthcare professionals. Time constraints due to heavy clinical workloads leave little room for research pursuits, and the level and quality of institutional support further exacerbates this issue [6–8]. Resources such as funding, research infrastructure, and access to knowledgeable mentors are often insufficient or unavailable, making it challenging for clinicians to initiate or participate in research projects [8–11]. Additionally, personal factors such as limited research skills and confidence can deter professionals from engaging in research, especially when they perceive their role as primarily supportive rather than leading in research initiatives [5,12].

In Ireland, there is limited research examining the engagement of multidisciplinary healthcare professionals in cancer care research. Recent research involving physicians in various specialist areas identifies that while the majority of participants recognise that research is essential, hospital environments are not considered conducive to research engagement [13]. In primary care, approximately 15 % of multidisciplinary healthcare professionals have reported being research-active [14]. A region-specific capacity-building programme for nurses working within clinical environments in Ireland was developed and evaluated, reporting positive impacts on individual capacity-building; however, the impact of these programmes has been limited to a small population [15].

The implementation of a national cancer institute and advancements toward Comprehensive Cancer Centre accreditation (e.g. through the Organisation of European Cancer Institutes; OECI), requires multidisciplinary research expertise and collaboration within clinical organisations [16]. However, there is limited empirical understanding of non-medical cancer care professionals' interest in and capacity to engage with research as part of their clinical role. Understanding the barriers and enablers of multidisciplinary healthcare professionals' engagement in research is critical, given that these professionals form a substantial part of the cancer care workforce. Their involvement in research is vital for advancing clinical practice and improving patient outcomes [1]. Therefore, this research aims to explore the barriers and enablers of research activity among Irish nurses and allied healthcare professionals.

2. Methods

This mixed methods study was undertaken between February 2020 and June 2022, encompassing two phases. In phase 1, a stakeholder consultation workshop was conducted with nursing and allied healthcare professionals from across the Republic of Ireland to identify the barriers and enablers of nursing and allied healthcare professionals' research in Ireland. In phase 2, a cross-sectional quantitative study was undertaken with clinical healthcare professionals to establish the prevalence of barriers and enablers of research activity experienced by nursing and allied healthcare professionals in Ireland. Phase 1 of this study received ethical approval from the University Research Ethics Committee (Ref: SNMREC-01–2020). Phase 2 of this study received ethical exemption from the University Research Ethics Committees (LS-E-21–128-Drury Exemption).

This study was informed by Bronfenbrenner's Ecological Systems Theory [17], which conceptualises human behaviour as shaped by dynamic interactions between individuals and the multiple environmental systems in which they are embedded. The model outlines five nested systems of influence; 1) the microsystem (e.g. immediate work environment and colleagues); 2) the mesosystem (e.g. interdepartmental relationships), 3) the exosystem (e.g. institutional structures and policies); 4) the macrosystem (e.g. national health policy, funding landscapes), and 5) the chronosystem (e.g. changes in healthcare systems over time). While the full model captures structural, policy, and cultural forces, this study focused primarily on the micro- and meso-levels, including individual competencies, local team dynamics, and departmental or managerial supports. Ecological Systems Theory guided the development of the semi-structured interview guide and questionnaire by providing a lens to explore how proximal and organisational influences shape research engagement. Although macro- and chronosystem-level factors were not the focus of data collection, the theory's emphasis on the interdependence of personal, organisational, and systemic factors remains relevant to understanding barriers and enablers of research activity among nurses and allied healthcare professionals in cancer care.

2.1. Participants

In both phases of the study, all participants must have identified as a nurse, pharmacist, dietitian, social worker, occupational therapist, physiotherapist, radiographer, radiotherapist, psychologist, or speech and language therapist working in clinical cancer care settings and voluntarily provide consent to participate. Where participants worked part-time in cancer care settings while holding substantive roles in academic settings, they remained eligible to participate in the study.

2.2. Phase 1 stakeholder consultation workshop

2.2.1. Data collection

The phase 1 Stakeholder Consultation Workshop (Barriers and Enablers) was held during the Irish Association of Cancer Research Annual Conference. The workshop was advertised via social media platforms and directly to conference delegates. When registering for the conference, delegates could register for the workshops. Prior to registration, potential attendees were provided with a participant information sheet. Once registered, workshop attendees were invited to complete a consent form, which they could return in electronic form or hard copy form on the day of the conference. During this 2-hour workshop, a semi-structured topic guide was used to explored participants' research experience, barriers, and enablers (Appendix 1). Participants were grouped by discipline, with facilitators recording key points. No individual demographics were collected, but professional roles were noted.

2.2.2. Data analysis

Workshop data were initially analysed using a deductive content analysis approach [18], guided by the predefined discussion topics: research experience, barriers, and facilitators. First, field notes from each table were transcribed and thoroughly reviewed to ensure familiarisation with the data. The three discussion topics served as the initial coding framework, providing a structure for early analysis. However, as coding progressed, sub-categories and themes were developed inductively through an iterative process that allowed for new patterns and insights to emerge from the data. This enabled a more nuanced understanding of the barriers and enablers of research engagement. Comparisons were made across the different tables to identify recurring themes and areas of convergence and divergence. The concept map generated following inductive analysis of the parent codes (Factors Preventing Engagement in Research / Factors Facilitating Engagement in Research) is presented in Appendix 2. This process enabled the identification of key barriers and facilitators of research from the perspective of nurses and HSCPs employed in clinical cancer care settings.

2.3. Phase 2 cross-sectional questionnaire study

2.3.1. Data collection

In phase 2, an anonymous cross-sectional questionnaire was administered to self-selecting participants via Qualtrics. Participants were recruited to phase 2 via viral sampling techniques, and the study was advertised via Twitter, Facebook, and LinkedIn, as well as the newsletters of health services, professional organisations, and charitable organisations involved in cancer care delivery in Ireland. As the questionnaire was anonymous, no identifying information was collected, and the submission of a questionnaire via Qualtrics inferred consent to participate in the study.

Section one of the questionnaire assessed participants' perceptions of research capacity within their organisation and team and personally, using the research capacity and culture tool (RCC) [19]. The RCC contains three subscales, which assess research capacity at individual (14 items), team (14 items) and organisation levels (19 items). Each item is assessed via a Likert scale ranging from 1 (low skill/capacity) to 10 (high skill/capacity). The domains of the RCC demonstrated strong test-retest reliability (organisation ICC = 0.77, team ICC = 0.83 and individual ICC = 0.82). Additional open-text items from the RCC solicit contextual information regarding barriers and enablers of research.

Section two of the questionnaire assessed participants' research activity and included items adapted from previous studies, and items generated based on the results of phase 1 workshops and a literature review. Items within this section assessed participants' involvement in specific research activities within the past 12 months and their desire to be involved in these activities.

Section three of the questionnaire explored the factors influencing research activities. Items were adapted from previous studies or generated based on the results of phase 1. Items explored 1) the resources available to support research within the participants' current role, 2) the specific barriers and enablers of research and the degree to which they enabled or prevented engagement with research activities, and 3) participants' self-reported skill level with research activities, and the importance of training for each skill.

Demographic information, including participants' age group, gender identity, qualifications, the employer's business, professional discipline, and research career stage, were also collected. The questionnaire was piloted with three nurses and an allied health professional, who provided feedback on the content and structure of the questionnaire. Minor revisions were made to the questionnaire following feedback from those who engaged in the pilot process.

The questionnaire was advertised on social media, and posters were placed in Irish Cancer Society Daffodil Centres. Participants were recruited via viral sampling techniques, including advertisement of the study via Twitter, Facebook, and LinkedIn. Key stakeholders, groups, and organisations, including the National Cancer Control Programme, the Irish Cancer Society and Irish Cancer Society Daffodil Centres, also facilitated the dissemination of study advertisements.

2.3.2. *Data analysis*

Quantitative data from Phase 2 were analysed using SPSS to generate descriptive statistics. Items from the Research Capacity and Culture (RCC) tool were rated on an 10-point Likert scale (1 = low skill/capacity to 10 = high skill/capacity). For analysis and reporting, RCC responses were collapsed into three categories: Low (scores 1–3), Moderate (scores 4–7), and High (scores 8–10). Responses marked "unsure" were excluded from mean score calculations but included in frequency reporting where relevant. For categorical items relating to research activities and influencing factors, descriptive statistics (frequencies and percentages) were calculated. Responses to items assessing barriers and facilitators to research engagement were grouped into binary categories for analysis: responses of minor, moderate, or serious were collapsed to indicate presence of a barrier or facilitator, and compared against those who selected not a barrier or not a facilitator. Open-text responses were reviewed to provide contextual insights but were not subjected to formal qualitative coding.

3. Results

3.1. *Phase 1 stakeholder consultation workshop*

Fourteen professionals contributed to the phase 1 stakeholder consultation workshop, including clinical managers ($n = 4$), HSCPs ($n = 5$), PhD students ($n = 3$) and nurses ($n = 2$). The workshop participants had varied experience with research in clinical and academic settings. A small number of participants described research leadership experience, including oversight of clinical research training programmes and conduct of clinical studies. The majority of participants described experience with research support roles, including participant recruitment and data collection.

3.1.1. *Theme 1: barriers to engagement in research*

Participants identified a number of barriers that prevented them from engaging in research. Time constraints were a pervasive challenge identified by all groups, with clinical duties and the absence of protected working time to engage with research. Most participants discussed research in the context of further qualifications, including MSc and PhD research. Within this context, participants felt research undertaken as part of a qualification should be undertaken during personal time. The prospect of balancing full-time work with research responsibilities in this way was considered overwhelming, leading to burnout, stress and exhaustion that adversely affected personal lives and relationships. Furthermore, a lack of funding to support further education and research undertaken within the context of further education placed financial pressure on healthcare professionals. Many described the need for professionals to self-fund their MSc and PhD education and the perception of a significant personal financial impact on obtaining the qualifications in an environment that offered limited career progression opportunities or financial rewards.

At an institutional level, a number of barriers to research were identified. In particular, many described a lack of structured support within organisations, including opportunities to undertake sabbaticals, study leave, or avail of flexible working arrangements to facilitate research, whether as part of one's clinical role or as part of further education. Mentorship from suitably qualified healthcare professionals employed within the clinical setting was identified as an obstacle to research. Furthermore, the absence of research teams, administrative assistance, and a supportive research culture within clinical settings impedes the initiation and completion of research projects. Ethical and administrative hurdles, including complex approval processes related to ethics, data protection and institutional approvals, created further barriers. Confidence and knowledge deficits were notable factors inhibiting engagement with research at an administrative level, with many participants expressing a need for training, guidance, and academic partnerships to navigate the research landscape effectively. Personal impacts, such as guilt over taking time away from patient care, fear of being judged or making mistakes, and the emotional toll of research on sensitive topics, were also factors that contributed to their reluctance. Collectively, these barriers created a challenging environment that discouraged clinicians from conducting or leading research initiatives.

3.1.2. *Theme 2: enablers for engagement in research*

Participants identified several factors that facilitated their engagement in research within clinical practice. Strong academic and clinical partnerships emerged as a key enabler, providing essential support, guidance, and access to resources. Positive supervision and mentorship from experienced researchers and clinicians help build confidence and competence in conducting research. Access to funding opportunities, such as scholarships and grants, alleviated financial barriers and encourages participation. Supportive management and organisational culture play a crucial role by recognising the value of research, offering flexible working arrangements, and integrating research responsibilities into job descriptions, especially for roles like Advanced Nurse Practitioners (ANPs) who had dedicated research time within their roles.

Interdisciplinary collaboration and being part of multidisciplinary teams enhanced participants' opportunities and willingness to engage in research, allowing collaboration between diverse experts and fostering a supportive network. Participation in ethics committees and having a good understanding of ethical processes facilitate smoother research implementation. Access to patients and openness from clinical teams make it easier to conduct studies. Personal factors, such as life stage and work-life balance, also influence the ability to engage in research, with some finding it more feasible earlier in their careers or when they have supportive personal circumstances. Recognition of achievements, opportunities to present at conferences, and a positive research culture within the organisation motivate clinicians to lead and participate in research initiatives.

3.2. *Phase 2 cross-sectional questionnaire study*

One hundred and fifty-seven completed questionnaires were returned. Table 1 presents the sample characteristics. Participants were predominantly aged between 35 and 49 years (*n* = 64, 47.8 %) and identified as female (*n* = 106, 89.1 %). In terms of education, more than four-fifths held a postgraduate qualification (*n* = 114, 85.7 %), twenty-six participants were currently undertaking further education (19.4 %), and two-thirds of participants had completed education to their preferred level (*n* = 91, 67.9 %). Most participants worked in a hospital or hospice setting (*n* = 88, 65.7 %), in clinical roles (*n* = 110, 82.1 %). The majority of participants identified as a nurse (*n* = 72, 54.1 %). Sixty-four participants reported that research was a part of their current role (55.2 %), and two-thirds reported some research experience (*n* = 88, 67.2 %). Most of those who reported research experience described themselves as a research enabler, assistant or early-stage researcher (*n* = 53, 60.2 %) (Appendix 3).

3.2.1. *Research capacity*

On average, participants ranked organisational support for research as moderate on all but one item of the RCC organisational subscale (Table 2). The item *promotes clinical practice based on evidence* was ranked highly overall ($\bar{x}$=7.70, SD=2.31). For the lowest ranked items on average, participants reported moderate organisational success in providing a research career pathway ($\bar{x}$=4.03, SD=2.92), having software programmes to analyse data ($\bar{x}$=4.22, SD=3.32), resources to support research activities ($\bar{x}$=4.64, SD=3.02), and mechanisms to monitor research quality ($\bar{x}$=4.83, SD=3.41).

From a team perspective, on average, participants provided positive ratings of their teams (Table 3), which ensured planning was guided by research evidence ($\bar{x}$=6.13, SD=2.96), supported peer-reviewed publication of research ($\bar{x}$=6.08, SD=3.31) and conducting research that is relevant to practice ($\bar{x}$=6.02, SD=3.23). On average, participants ranked team support for research as moderate on all but one item of the RCC organisational subscale. The item *has funds, equipment or admin to support research activities* was ranked low on average ($\bar{x}$=3.85, SD=3.08).

At an individual level, participants rated their skills related to research activities at moderate or high levels for all items (Table 4). The highest-ranked items on the RCC Individual Subscale included finding relevant literature ($\bar{x}$=7.42, SD=2.13), critically reviewing the literature ($\bar{x}$=7.17, SD=2.18) and collecting data ($\bar{x}$=6.71, SD=2.52). More than half of participants self-reported moderate or high levels of skill related to all items on the individual subscale. However, the items which participants expressed the lowest levels of skill were securing research funding ($\bar{x}$=4.30, SD=2.97), providing advice to less experienced researchers ($\bar{x}$=5.06, SD=3.00) and writing for publication in peer-reviewed journals ($\bar{x}$=5.15, SD=2.52).

Table 1
Sample characteristics.

Variable		n	%
Age Group (*n* = 134)	18–34	36	26.9 %
	35–49	64	47.8 %
	50–65	34	23.2 %
Gender (*n* = 119)	Woman/Female/Her	106	89.1 %
	Man/Male/Him	13	10.9 %
Highest Degree Held (*n* = 133)	Undergraduate degree	19	14.3 %
	Postgraduate diploma	26	19.5 %
	Master's degree (research)	10	7.5 %
	Master's degree (taught)	52	39.1 %
	PhD/Professional Doctorate	26	19.5 %
Currently Studying (*n* = 134)	Undergraduate Degree/Diploma/Certificate	1	0.7 %
	Taught Postgraduate Diploma/MSc	9	6.7 %
	PhD (research)	16	11.9 %
	Not Currently Studying	108	80.6 %
Highest Degree Desired (*n* = 134)	Taught Postgraduate Diploma/MSc	19	14.2 %
	Master's degree (research)	4	3.0 %
	MD/PhD/Professional Doctorate	20	14.9 %
	No Further Degree Desired	91	67.9 %
Place of Work (*n* = 134)	Hospital/Hospice	88	65.7 %
	Community/Primary Care	15	11.2 %
	Academia	21	15.7 %
	Other	10	7.5 %
Area of Work (*n* = 134)	Clinical	110	82.1 %
	Researcher	9	6.7 %
	Academic	9	6.7 %
	Other (Management/Clinical-Academic)	6	4.5 %
Discipline (*n* = 133)	Nursing & Midwifery	72	54.1 %
	Occupational therapy	11	8.3 %
	Nutrition/dietetics	13	9.8 %
	Other*	37	27.8 %
Research Experience Level (*n* = 131)	Research Enabler	17	13.0 %
	Research Assistant	17	13.0 %
	Early Stage Researcher	19	14.5 %
	Experienced Research Team Member	21	16.0 %
	Independent Researcher	14	10.7 %
	Not Involved in Research	43	32.8 %
Research Activities Part of Role (*n* = 116)	Yes	64	55.2 %
	No	52	44.8 %

*Other encompasses all disciplinary groups with < 10 participants, Speech and Language Therapy, Physiotherapy, Psychology, Public Health, Radiotherapy, Radiology, Radiography, Social Work, Clinical Trials/Research, Physics.

Table 2
Summary of the RCC Organisation Subscale descriptive analysis.

RCC Organisation Subscale: Please rate your organisation's success or skill level for each of the following aspects:	Low[1]		Moderate[2]		High[3]		Unsure		Total	Mean[4]	SD	N
	n	%	n	%	n	%	n	%				
a) Has adequate resources to support staff research training	52	33.1 %	61	38.9 %	38	24.2 %	6	3.8 %	157	5.12	2.86	151
b) Has funds, equipment or admin to support research activities	66	42.0 %	52	33.1 %	34	21.7 %	5	3.2 %	157	4.64	3.02	152
c) Has a plan or policy for research development	52	33.1 %	54	34.4 %	36	22.9 %	15	9.6 %	157	5.04	2.98	142
d) Has senior managers that support research	44	28.0 %	51	32.5 %	60	38.2 %	2	1.3 %	157	5.92	2.96	155
e) Ensures staff career pathways are available in research	76	48.4 %	43	27.4 %	27	17.2 %	11	7.0 %	157	4.03	2.92	146
f) Ensures organisation planning is guided by evidence	27	17.2 %	57	36.3 %	63	40.1 %	10	6.4 %	157	6.25	2.67	147
g) Has consumers involved in research	46	29.3 %	42	26.8 %	37	23.6 %	32	20.4 %	157	5.08	3.09	125
h) Accesses external funding for research	43	27.4 %	41	26.1 %	49	31.2 %	24	15.3 %	157	5.61	3.24	133
i) Promotes clinical practice based on evidence	10	6.4 %	45	28.7 %	100	63.7 %	2	1.3 %	157	7.70	2.31	155
j) Encourages research activities relevant to practice	35	22.3 %	50	31.8 %	69	43.9 %	3	1.9 %	157	6.22	2.95	154
k) Has software programs for analysing research data	68	43.3 %	23	14.6 %	31	19.7 %	35	22.3 %	157	4.22	3.32	122
l) Has mechanisms to monitor research quality	56	35.7 %	21	13.4 %	43	27.4 %	37	23.6 %	157	4.83	3.41	120
m) Has identified experts accessible for research advice	48	30.6 %	33	21.0 %	51	32.5 %	25	15.9 %	157	5.46	3.25	132
n) Supports a multidisciplinary approach to research	49	31.2 %	38	24.2 %	57	36.3 %	13	8.3 %	157	5.56	3.22	144
o) Has regular forums/bulletins to present research findings	59	37.6 %	47	29.9 %	44	28.0 %	7	4.5 %	157	5.16	3.07	150
p) Engages external partners (e.g. Universities) in research	37	23.6 %	35	22.3 %	68	43.3 %	17	10.8 %	157	6.17	3.15	140
q) Supports applications for research scholarships/ degrees	40	25.5 %	39	24.8 %	58	36.9 %	20	12.7 %	157	5.99	3.14	137
r) Supports the peer-reviewed publication of research	40	25.5 %	38	24.2 %	62	39.5 %	17	10.8 %	157	6.14	3.16	140
s) Supports research collaboration and networking among staff	44	28.0 %	38	24.2 %	62	39.5 %	13	8.3 %	157	5.90	3.13	144

[1] Low: Score of 1–3; [2] Moderate: Score of 4–7; [3] High: Score of 8–10; [4] Mean excludes those who responded "unsure"

Table 3
Summary of the RCC Team Subscale descriptive analysis.

RCC Team Subscale: Please rate your team's current success or skill level for each of the following aspects	Low[1]		Moderate[2]		High[3]		Unsure		Total	Mean[4]	SD	N
	n	%	n	%	n	%	n	%				
a) has adequate resources to support staff research training	59	46.1 %	40	31.3 %	24	18.8 %	5	3.9 %	128	4.35	2.88	123
b) has funds, equipment or admin to support research activities	77	60.2 %	21	16.4 %	26	20.3 %	4	3.1 %	128	3.85	3.08	124
c) does team level planning for research development	63	49.2 %	39	30.5 %	21	16.4 %	5	3.9 %	128	4.09	2.90	123
d) ensures staff involvement in developing that plan	57	44.5 %	42	32.8 %	25	19.5 %	4	3.1 %	128	4.36	3.01	124
e) has team leaders that support research	49	38.3 %	38	29.7 %	38	29.7 %	3	2.3 %	128	5.18	3.20	125
f) provides opportunities to get involved in research	51	39.8 %	39	30.5 %	36	28.1 %	2	1.6 %	128	4.83	3.14	126
g) does planning that is guided by evidence	30	23.4 %	43	33.6 %	50	39.1 %	5	3.9 %	128	6.13	2.96	123
h) has consumer involvement in research activities/planning	52	40.6 %	32	25.0 %	28	21.9 %	16	12.5 %	128	4.60	3.14	112
i) has applied for external funding for research	41	32.0 %	30	23.4 %	42	32.8 %	15	11.7 %	128	5.44	3.45	113
j) conducts research activities relevant to practice	36	28.1 %	31	24.2 %	53	41.4 %	8	6.3 %	128	6.02	3.23	120
k) supports applications for research scholarships/ degrees	36	28.1 %	32	25.0 %	50	39.1 %	10	7.8 %	128	5.94	3.17	118
l) has mechanisms to monitor research quality	41	32.0 %	28	21.9 %	38	29.7 %	21	16.4 %	128	5.02	3.25	107
m) has identified experts accessible for research advice	41	32.0 %	31	24.2 %	43	33.6 %	13	10.2 %	128	5.26	3.28	115
n) disseminates research results at research forums/seminars	37	28.9 %	36	28.1 %	48	37.5 %	7	5.5 %	128	5.88	3.24	121
o) supports a multidisciplinary approach to research	38	29.7 %	36	28.1 %	46	35.9 %	8	6.3 %	128	5.72	3.21	120
p) has incentives and support for mentoring activities	53	41.4 %	37	28.9 %	27	21.1 %	11	8.6 %	128	4.50	3.08	117
q) has external partners (e.g. universities) engaged in research	33	25.8 %	34	26.6 %	50	39.1 %	11	8.6 %	128	6.01	3.22	117
r) supports peer-reviewed publication of research	35	27.3 %	32	25.0 %	51	39.8 %	10	7.8 %	128	6.08	3.31	118
s) has software available to support research activities	56	43.8 %	16	12.5 %	28	21.9 %	28	21.9 %	128	4.29	3.42	100

[1] Low: Score of 1–3; [2] Moderate: Score of 4–7; [3] High: Score of 8–10; [4] Mean excludes those who responded "unsure"

Table 4
Summary of the RCC Individual Subscale descriptive analysis.

RCC Individual Subscale: Please rate your own current success or skill level for each of the following aspects	Low[1]		Moderate[2]		High[3]		Unsure		Total	Mean[4]	SD	N
	n	%	n	%	n	%	n	%				
a) Finding relevant literature	8	5.1 %	39	24.8 %	71	45.2 %	39	24.8 %	157	7.42	2.13	118
b) Critically reviewing the literature	10	6.4 %	45	28.7 %	63	40.1 %	39	24.8 %	157	7.17	2.18	118
c) Using a computer referencing system (e.g. Endnote)	25	21.2 %	38	32.2 %	51	43.2 %	4	3.4 %	118	6.24	2.85	114
d) Writing a research protocol	34	28.8 %	45	38.1 %	37	31.4 %	2	1.7 %	118	5.55	2.80	116
e) Securing research funding	52	44.1 %	36	30.5 %	23	19.5 %	7	5.9 %	118	4.30	2.97	111
f) Submitting an ethics application	29	24.6 %	34	28.8 %	51	43.2 %	4	3.4 %	118	6.18	3.17	114
g) Designing questionnaires	22	18.6 %	53	44.9 %	41	34.7 %	2	1.7 %	118	6.18	2.69	116
h) Collecting data e.g. surveys, interviews	14	11.9 %	51	43.2 %	51	43.2 %	2	1.7 %	118	6.71	2.52	116
i) Using computer data management systems	30	25.4 %	45	38.1 %	37	31.4 %	6	5.1 %	118	5.66	2.90	112
j) Analysing qualitative research data	31	26.3 %	49	41.5 %	35	29.7 %	3	2.5 %	118	5.61	2.89	115
k) Analysing quantitative research data	33	28.0 %	53	44.9 %	28	23.7 %	4	3.4 %	118	5.32	2.76	114
l) Writing a research report	28	23.7 %	44	37.3 %	43	36.4 %	3	2.5 %	118	5.89	2.79	115
m) Writing for publication in peer-reviewed journals	38	32.2 %	45	38.1 %	30	25.4 %	5	4.2 %	118	5.15	2.99	113
n) Providing advice to less experienced researchers	41	34.7 %	43	36.4 %	31	26.3 %	3	2.5 %	118	5.06	3.00	115

[1] Low: Score of 1–3; [2] Moderate: Score of 4–7; [3] High: Score of 8–10; [4] Mean excludes those who responded "unsure"

Table 5
Participants' engagement in and desire to be involved in research activities.

	Active in the Past 12 Months		Interested in Doing	
	n	%	n	%
a) Writing a research report, presentation or paper for publication	52	33.1 %	74	47.1 %
b) Writing a research protocol	43	27.4 %	68	43.3 %
c) Submitting an ethics application	43	27.4 %	65	41.4 %
d) Patient screening for eligibility	45	28.7 %	76	48.4 %
e) Recruitment and consent	50	31.8 %	77	49.0 %
f) Collecting data, e.g. surveys, interviews	59	37.6 %	79	50.3 %
g) Analysing qualitative research data	37	23.6 %	74	47.1 %
h) Analysing quantitative research data	33	21.0 %	73	46.5 %
i) Abstract writing for conference submission	38	24.2 %	77	49.0 %
j) Poster or other presentation opportunities	44	28.0 %	85	54.1 %
k) Writing a basic literature review	46	29.3 %	75	47.8 %
l) Manuscript writing for publication	32	20.4 %	68	43.3 %
m) Applying for research funding	30	19.1 %	71	45.2 %
n) Orchestrating own project (protocol development, grant preparation, etc)	30	19.1 %	74	47.1 %
o) Public and Patient Involvement activities	50	31.8 %	83	52.9 %

3.2.2. *Research activity*

Table 5 presents participants' levels of engagement and preferences for engagement in research activities. Almost three-fifths of participants reported involvement in one or more research activities within the past 12 months (*n* = 90, 57.3 %). Within this sample, the most common research activities reported were data collection (*n* = 59, 37.6 %), writing a research report, presentation or paper for publication (*n* = 52, 33.1 %) and recruitment and consent of research participants (*n* = 50, 31.8 %). Research activities, including analysis (21.0–23.6 %), preparation of manuscripts for peer-review (20.4 %), applying for research funding (19.1 %) and research project leadership (19.1 %) were less commonly reported activities, but were reported by approximately one-fifth of participants.

Regarding research activities participants were interested in becoming involved in, 116 participants (73.9 %) expressed an interest in being involved in one or more research activities. The most common research activities that participants were interested in conducting were poster or other presentations (*n* = 85, 51.4 %), public and patient involvement activities (*n* = 83, 52,9 %) and data collection activities (n = 79, 50.3 %). Almost half of participants were interested in being more involved in research project leadership (47.1 %), data analysis (46.5–47.1 %), applying for research funding (45.2 %) and preparation of manuscripts for peer-review (43.3 %).

3.2.3. *Factors influencing research activity*

The prevalence of factors that influenced participants' engagement in research is presented in Table 6 and 7. Overall, most participants reported that their organisation provided at least some resource to support the conduct of research as part of their role (*n* = 111, 70.7 %). The most common resource made available to study participants was access to a library (*n* = 40, 25.5 %), followed by software (*n* = 21, 13.4 %) and training (*n* = 21, 13.4 %). Only one in ten participants reported access to research supervision (10.8 %) and funding (9.6 %). The most common factors that participants identified as barriers to research included the need to prioritise other aspects of one's professional role (*n* = 103, 65.6 %), lack of suitable backfill in their role to support research (*n* = 102, 65.0 %), lack of funding (*n* = 102, 65.0 %), lack of time (*n* = 101, 64.3 %), and lack of administrative support (*n* = 101, 64.3 %). The factors that participants identified as most motivating for engaging in research activity included increased job satisfaction (*n* = 107, 68.2 %), increased credibility (*n* = 106, 67.5 %), opportunities to participate at their level (*n* = 104, 66.2 %), skill development (*n* = 103, 65.6 %) and addressing a clinical problem (*n* = 103, 65.6 %).

Table 6
Factors influencing engagement in research.

Variable		n	%
What provisions are made for conducting research as part of your role?	Software	21	13.4 %
	Research supervision	17	10.8 %
	Time	20	12.7 %
	Research funds	15	9.6 %
	Administrative support	12	7.6 %
	Training	21	13.4 %
	Library access	40	25.5 %
Barriers to involvement in research (minor/ moderate/ serious)	Other work roles take priority	103	65.6 %
	Lack of suitable backfill	102	65.0 %
	Lack of funds for research	102	65.0 %
	Lack of time for research	101	64.3 %
	Lack of administrative support	101	64.3 %
	Lack of software for research	99	63.1 %
	Lack of a co-ordinated approach to research	99	63.1 %
	Lack of access to equipment for research	91	58.0 %
	Lack of support from management	90	57.3 %
	Desire for work/life balance	89	56.7 %
	Lack of skills for research	85	54.1 %
	Other personal commitments	82	52.2 %
	No access to clinical collaborators/experts	77	49.0 %
	No access to academic collaborators/experts	77	49.0 %
	Loss of income during research activities	73	46.5 %
	Isolation	72	45.9 %
	Intimidated by working with new technology/software	70	44.6 %
	Intimidated by research language	69	43.9 %
	Intimidated by fear of getting it wrong	68	43.3 %
	Do not know how to get involved in research	65	41.4 %
	Lack of library/internet access	48	30.6 %
	Lack of personal interest in research	43	27.4 %
Motivators to be involved in research (minor/ moderate/ serious)	Increased job satisfaction	107	68.2 %
	Increased credibility	106	67.5 %
	Opportunities to participate at one's own level	104	66.2 %
	To develop skills	103	65.6 %
	Problem identified that needs changing	103	65.6 %
	Desire to prove a theory/ hunch	103	65.6 %
	Mentors available to supervise	102	65.0 %
	To keep the brain stimulated	102	65.0 %
	Dedicated time for research	101	64.3 %
	Research encouraged by managers	97	61.8 %
	Grant funds	97	61.8 %
	Links to universities	97	61.8 %
	Career advancement	94	59.9 %
	Colleagues doing research	94	59.9 %
	Research written into role description	90	57.3 %
	Study or research scholarships available	81	51.6 %
	Forms part of Post Graduate study	79	50.3 %

Participants were asked to rate their perceived skills with various research tasks. The skills which the majority of participants described as being at moderate or advanced levels included data protection and General Data Protection Regulations (GDPR) (*n* = 76, 48.4 %), informed consent (*n* = 73, 46.5 %), conducting literature reviews (*n* = 71, 45.2 %), using research to inform programs/services (*n* = 70, 44.6 %)

Table 7
Current skill level and perceived importance of training in specific research activities.

	n	%	n	%
Current skill level	**Basic**		**Moderate/ Advanced**	
• Data protection and GDPR	22	14.0 %	76	48.4 %
• Informed consent	25	15.9 %	73	46.5 %
• Conducting literature reviews	27	17.2 %	71	45.2 %
• Using research to inform programs/services	28	17.8 %	70	44.6 %
• Working with decision-makers	35	22.3 %	64	40.8 %
• Participant recruitment	33	21.0 %	64	40.8 %
• Presenting research at professional meetings	36	22.9 %	61	38.9 %
• Research question generation	38	24.2 %	60	38.2 %
• Writing an ethics application	44	28.0 %	54	34.4 %
• Research methods (identifying research measures)	44	28.0 %	54	34.4 %
• Quantitative data collection and analysis	44	28.0 %	54	34.4 %
• Qualitative methodology	45	28.7 %	53	33.8 %
• Project management	45	28.7 %	53	33.8 %
• Writing research proposals	44	28.0 %	53	33.8 %
• Qualitative data collection and analysis	46	29.3 %	52	33.1 %
• Designing research study	46	29.3 %	51	32.5 %
• Finding research partners/expert consultants	48	30.6 %	50	31.8 %
• Writing for publication	48	30.6 %	50	31.8 %
• Engaging the community	48	30.6 %	49	31.2 %
• Quantitative methodology	46	29.3 %	48	30.6 %
• Determining sample size	59	37.6 %	39	24.8 %
• Developing a research program	61	38.9 %	37	23.6 %
• Writing successful grant applications	67	42.7 %	32	20.4 %
• Preparing a research budget	69	43.9 %	30	19.1 %
• Community-based participatory research	72	45.9 %	27	17.2 %
Importance of training	**Least important**		**Most important**	
• Qualitative data collection and analysis	9	5.7 %	80	51.0 %
• Writing successful grant applications	13	8.3 %	79	50.3 %
• Using research to inform programs/services	10	6.4 %	79	50.3 %
• Designing research study	9	5.7 %	79	50.3 %
• Quantitative data collection and analysis	11	7.0 %	78	49.7 %
• Research question generation	12	7.6 %	77	49.0 %
• Preparing a research budget	14	8.9 %	76	48.4 %
• Qualitative methodology	13	8.3 %	76	48.4 %
• Writing for publication	13	8.3 %	76	48.4 %
• Writing research proposals	11	7.0 %	76	48.4 %
• Conducting literature reviews	13	8.3 %	76	48.4 %
• Determining sample size	14	8.9 %	75	47.8 %
• Research methods (identifying research measures)	14	8.9 %	75	47.8 %
• Developing a research program	15	9.6 %	74	47.1 %
• Project management	15	9.6 %	74	47.1 %
• Presenting research at professional meetings	15	9.6 %	74	47.1 %
• Informed consent	15	9.6 %	74	47.1 %
• Working with decision-makers	16	10.2 %	73	46.5 %
• Quantitative methodology	12	7.6 %	73	46.5 %
• Participant recruitment	17	10.8 %	72	45.9 %
• Data protection and GDPR	17	10.8 %	72	45.9 %
• Finding research partners/expert consultants	19	12.1 %	71	45.2 %
• Engaging the community	18	11.5 %	71	45.2 %
• Writing an ethics application	18	11.5 %	71	45.2 %
• Community-based participatory research	24	15.3 %	65	41.4 %

and participant recruitment (*n* = 64, 40.8 %). On the other hand, the research skills participants were most likely to report basic skills in were community-based participatory research (*n* = 72, 45.9 %), preparing a research budget (*n* = 69, 43.9 %), writing successful grant applications (*n* = 67, 42.7 %), developing a research program (*n* = 61, 38.9 %) and determining sample size (*n* = 59, 37.6 %). In terms of training needs, the areas which participants ranked as of highest importance for further training were qualitative data collection and analysis (*n* = 80, 51.0 %), writing successful grant applications (n = 79, 50.3 %), using research to inform programs/services (*n* = 79, 50.3 %), designing a research study (*n* = 79, 50.3 %), quantitative data collection and analysis (*n* = 78, 49.7 %) and generating a research question (*n* = 77, 49.0 %).

4. Discussion

This study aimed to explore the barriers and enablers of research activity among nurses and healthcare professionals working in clinical cancer care settings in the Republic of Ireland. The integration of findings from both the qualitative (Phase 1) and quantitative (Phase 2) phases reveals consistent barriers and enablers influencing research engagement among healthcare professionals in clinical cancer care settings. Participants of Phase 1 highlighted enablers of research, which included strong academic and clinical partnerships to support access to research infrastructure, mentorship, and funding. However, Phase 2 highlights that many participants reported limited access to such infrastructure; key barriers to clinicians' engagement in research included time constraints due to clinical duties, lack of protected research time, funding, mentorship, and administrative assistance. This discrepancy may be explained by the difference in research engagement among participants of phase 1 and phase 2. While survey responses were cross-sectional and respondents may not be research active, those participants who took part in phase 1 were attending an academic research conference. However, it also underscores a broader structural inequity in research practice. The enabling conditions identified in Phase 1 represent what is recognised as necessary for research engagement, while Phase 2 illustrates that these remain disproportionately inaccessible to nurses and HSCPs in clinical settings. While participants reported moderate to high skill with specific research activities on the RCC individual subscale, many reported low confidence levels in research leadership activities, including grant writing, budget preparation and protocol development. The results of the qualitative study highlight the importance of academic partnerships in addressing the identified research resource barriers experienced by nurses and HSCPs. These findings underscore the need for enhanced organisational support, through systemic interventions, including structured research pathways, and targeted training, mentorship to build research capacity and reduce structural barriers to research engagement among healthcare professionals.

As in previous research, time and the need to prioritise clinical commitments were identified as primary barriers to engagement in research among this sample [6–8]. In clinical roles, service delivery will take precedence over research. However, the development and implementation of evidence-based interventions to address the needs of people living with and after cancer is essential to ensure quality care, which optimises the outcomes of service users [20–23]. The development and successful implementation of effective interventions require the involvement of multidisciplinary professionals to ensure interventions are adapted appropriately for the context in which they are to be implemented [24]. Where protected time is provided within clinical roles, organisations may empower healthcare professionals to engage in strategic, evidence-based development of services and interventions that directly address the needs of people living with cancer. While there are financial implications to organisations in providing protected time or backfill for clinical positions, the involvement of healthcare professionals in such activities may significantly benefit the organisation, those who deliver the service and service users [25–27]. Furthermore, as identified within this study, supporting healthcare professionals to engage in research activities may also enhance job satisfaction, improving staff retention and turnover, as professionals feel valued and engaged in advancing their field [28].

Consistent with previous studies conducted in other international contexts, access to suitable mentorship was perceived as a critical factor influencing research engagement among clinical professionals by participants in Phase 1; in Phase 2, access to mentorship was ranked as low by two-fifths of participants, with half reporting a lack of access to clinical and academic collaborators. To promote positive research cultures in clinical practice, developing pathways for formal research mentorship through clinical-academic collaboration has demonstrated benefits in supporting enhanced research capacity [15,29]. In addition, the development of such programmes will provide pathways to support the development of key research skills and leadership capacity, which participants expressed a need for, including grant writing, protocol development, analysis, and paper writing. Furthermore, formalised clinical-academic partnerships may provide pathways for clinical professionals to access research infrastructure that is currently not resourced in clinical environments, including software, training, and library access [11,21,30–33]. Participatory approaches such as Participatory Action Research (PAR) also demonstrate potential for enabling inter-level collaboration and context-sensitive intervention design within healthcare systems [34]. While distinct from the focus of this study, such approaches highlight the potential of inclusive, mixed-methods strategies to engage healthcare professionals meaningfully in system-level research and service improvement.

The demographic characteristics of the study sample suggest a highly-trained cancer care workforce, with over four-fifths of participants educated to postgraduate level. Aligned with this, the study has identified high levels of interest in engaging with research activity and moderate to high levels of confidence in research skills among healthcare professionals in clinical roles. However, participants have expressed lower confidence levels with research administration activities, including developing research projects and engagement with research administration processes, including ethical approval. Given the educational preparation and skillset reported by this sample, it suggests significant potential to support and enhance research leadership competencies among clinicians. However, organisational hierarchies and gendered dynamics, particularly relevant in a predominantly female workforce, may contribute to barriers in accessing research leadership roles and infrastructure, compounding the confidence gap observed related to research administration and leadership roles [35,36]. To fully realise the potential of this highly educated workforce, organisational strategies must go beyond individual skill development to address structural and gendered barriers. This includes recognising and responding to the gendered nature of research participation challenges, particularly in work-life balance, role expectations, and access to resources. Interventions should incorporate gender-sensitive mentorship models, equity-focused leadership development programs, and transparent criteria for research funding and advancement. Investment in protected research time, formal clinical-academic partnerships, research fellowships, and inclusive institutional policies are essential to developing confident, competence research leaders and fostering a more equitable and innovative research culture within cancer care services.

5. Limitations

This study has several limitations that should be considered when interpreting the findings. While Ecological Systems Theory provided a helpful lens to explore multilevel influences on research engagement, this study predominantly captured proximal (micro- and meso-level) factors. Structural determinants such as health policy, professional hierarchies, and macro-level research infrastructure were not examined in depth and warrant further investigation to fully understand the systemic nature of research inequities among non-medical health professionals. Using a convenience sample may introduce selection bias, as healthcare professionals with a pre-existing interest in research may have been more inclined to participate, potentially overestimating levels of engagement and skill within the broader clinical workforce. It is not possible to calculate a response rate for the workshop or questionnaire, as the study employed viral sampling techniques and the total number of individuals who received the survey invitation is unknown. Furthermore, the survey platform was configured to accept only fully completed responses, meaning that incomplete questionnaires were not recorded. As a result, it was not possible to determine how many individuals started but did not complete the survey. The questionnaire included items developed explicitly for this study, which have not undergone formal validation, limiting the generalizability of results. Furthermore, the sample was predominantly female and primarily composed of early career researchers, which may not be representative of the broader cancer care workforce.

6. Conclusion

This study highlights pervasive factors affecting research engagement among nurses and HSCPs in clinical cancer care settings, including access to research infrastructure, time, funding, mentorship and organisational support. Nevertheless, this study highlights that cancer care professionals are highly-educated within this context, with many self-reporting relevant skillsets to conduct research. Despite this, many participants report low confidence in research leadership activities, including grant writing, budget preparation and protocol development. These findings suggest untapped potential within the cancer care workforce and underscore the need for enhanced organisational support to build research competence and capacity among healthcare professionals. To leverage this potential, investment in mentorship, advanced research training, and implementing local policies to support the integration of protected research time within clinical roles is needed. These strategies have significant potential to build advanced research competencies and support access to infrastructure, training and mentorship, and in turn, support the development and implementation of services and interventions for people living with cancer, thereby enhancing outcomes for patients, professionals, and healthcare organisations alike.

CRediT authorship contribution statement

Christopher Crockford: Writing – review & editing, Software, Resources, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Amanda Drury:** Writing – review & editing, Writing – original draft, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Ethics statement

Phase 1 of this study was reviewed and approved by the School of Nursing and Midwifery Research Ethics Committee, Trinity College Dublin (Ref: SNMREC-01–2020). Phase 2 of this study received ethical exemption from the Human Research Ethics Committee University College Dublin (LS-E-21–128-Drury Exemption).

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Declaration of competing interest

AD has no conflicts of interest to declare. CC was employed by the Irish Cancer Society, who commissioned the research study.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.jcpo.2025.100630.

Data availability

The datasets generated during and/or analysed during the current study are not publicly available. Excerpts of data are available from the corresponding author upon reasonable request and following a signed data sharing agreement.

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