Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Navigating Trainee-led Integrated Knowledge Translation: A Qualitative Study of Trainees, Supervisors, and Knowledge Users

Christine E. Cassidy

ccassidy@dal.ca

Dalhousie University

Sarah M. Gallant

IWK Health

Grace MacIntyre

Dalhousie University

Jessica Reszel

BORN Ontario

Research Article

Keywords: Collaborative research, Research co-production, Integrated knowledge translation, Partnership approaches, Health systems research, Graduate students

Posted Date: November 3rd, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10984419/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Abstract

Background

There is increasing recognition of the benefits of collaborative research approaches, such as integrated knowledge translation (IKT), to generate evidence that is more relevant and useful for health system decision-making. In response, funding agencies and academic institutions have promoted the use of an IKT approach in graduate and postgraduate health research. However, tensions persist between expectations of trainees, academic degree requirements, and the lack of opportunities to prepare trainees for partnered research. Little is known about the complex relational process of IKT led by graduate trainees. This qualitative study aimed to explore the experience of using an IKT approach in trainee-led research from the perspective of trainees, academic supervisors, and knowledge users.

Methods

This study presents the pre-design findings that will inform the overarching project goal to co-design an IKT Guide for trainee-led research. We conducted this qualitative descriptive study using semi-structured interviews and focus groups, followed by a mixed-focus group with a subset of the interview participants. We recruited trainee (n = 5), supervisor (n = 7), and knowledge user (n = 4) participants through the Integrated Knowledge Translation Research Network. Transcripts were analyzed using inductive thematic analysis. We reported our findings in accordance with the Standards for Reporting Qualitative Research.

Results

While IKT is highly valued, participants also identified several drawbacks related to the emotional toll, investment, and lack of readiness. Participants reported barriers and facilitators to using an IKT approach across individual, interpersonal and organizational levels, with most determinants situated at the organizational level. Trainees described their experiences operating in systems optimized for individual-level academic achievement, with little power to navigate barriers that constrain their ability to lead partnered research.

Conclusions

Effective trainee-led IKT requires coordinated and multi-level support that extends beyond individual competence and skills training. Supervisors play a key role as models and facilitators of IKT. Transparent communication of limitations of trainee-led research is paramount in knowledge-user partnerships. This research highlights the need for interventions that address the interconnected roles within the IKT triad of trainees, supervisors, and knowledge users.

Background

Integrated knowledge translation (IKT), also referred to as research co-production, is defined as "*a model of collaborative research, where researchers work with knowledge users (i.e. patients, families, clinicians, decision-makers) who identify a problem and have the authority to implement the research recommendations* (p. 299)".[1] Although IKT is situated within a broader shift towards collaborative approaches to research, it is distinguished by its close ties to health disciplines, active collaboration with decision-makers throughout the research process, and focus on translating knowledge into action.[1, 2] IKT is valued for bridging the science and practice of implementation research.[3] The benefits of this approach extend beyond the research processing, benefitting knowledge users, researchers, and the health system. Effective IKT partnerships generate evidence that is relevant to knowledge users and useful in health practice, programs, and policies.[4] Studies have shown that using an IKT approach has the potential to lead to enhanced use of evidence in practice and policy, scale and spread of research, partnership formation, integration of different perspectives, capacity building for researchers and knowledge users, and greater appreciation for collaborative research processes.[5, 6] As the benefits of IKT become increasingly more established, interest in adopting this approach in health research has grown rapidly.

Funding agencies and institutions have played a central role in promoting the use of an IKT approach. For example, the Canadian Institutes of Health Research (CIHR) has targeted knowledge mobilization funding opportunities that require or encourage co-production with knowledge users.[7, 8] However, researchers face multi-layered challenges to operationalizing an IKT approach. IKT is a complex relational process, and when executed poorly, can lead to tokenism and ethical concerns.[9, 10] At an individual level, researchers lack preparation for partnership building, including the skills and understanding of the collaborative process.[5] Kothari et al suggest that effective IKT requires three key contextual factors: infrastructure, role clarity, and power sharing.[4] Competing priorities and expectations between researchers and knowledge users can create tension.[5, 11] To establish and maintain strong partnerships, researchers must draw on specific relational competencies, such as feedback and facilitation skills, conflict resolution, valuing different types of knowledge, and demonstrating appropriate attitudes when working with equity-deserving populations.[12, 13] Despite the importance of IKT in research, there are many institutional barriers to this approach, including those related to time and funding.[5, 11] Academic institutions, in particular, create distinct challenges for graduate-level trainees that current IKT literature does not address.

Trainees are graduate students and postdoctoral fellows working to enhance their research skills through involvement in research under the supervision of an independent researcher.[14] Studies on graduate-level research demonstrate that using collaborative approaches, such as IKT, can be mutually beneficial for trainees and knowledge user partners.[6, 15] These approaches enhance research quality and offer opportunities for personal and professional learning.[6, 15] Although academic institutions and funding agencies have begun to recognize the value of IKT in trainee-led research, structural tensions

persist between degree requirements and expectations of trainees to use collaborative research processes.[16]

Trainee-led research has many unique constraints, including limited timelines and institutional policies. Most graduate-level research programs do not equip trainees with the knowledge or skills needed to establish relationships with knowledge users in the health system, conduct IKT research collaboratively, and effectively translate evidence into practice.[6, 17] Health leaders have identified that a lack of researcher preparation to engage with knowledge user partners is a barrier to collaborative research.[18] Further, most trainee exposure to collaborative research methods is dependent on access to supervisors or mentors with IKT expertise.[19] Therefore, graduate trainees have called for more equitable access to IKT capacity building opportunities.[19, 20] These findings were particularly evident in our recent knowledge syntheses.[6, 16] Our environmental scan of IKT guidelines for trainees in health research identified no documents specific to IKT and only three related broadly to collaborative research methods.[16] Our scoping review revealed gaps between trainees' individual motivation to engage in research partnerships and institution-level opportunities that support using these approaches in graduate and postgraduate research.[6] There is a need to better understand trainee-led IKT health research within academic institutions.

Overall, existing IKT literature has largely focused on academic researchers and their knowledge user partners.[11, 18, 21–23] To date, there has been little empirical research that explores trainees' experiences with IKT and how supervisors and knowledge users engage in IKT with research trainees.[6, 16] Given that IKT is inherently relational and shaped by power dynamics, it is important to explore lived experiences from multiple perspectives, institutional norms, and perceived roles and expectations.[9, 24] A qualitative approach is needed for in-depth examination of the complex, relational processes of IKT among trainees, supervisors, and knowledge users. As such, the purpose of this qualitative study is to explore the experiences of trainees, supervisors, and knowledge users engaging in trainee-led IKT research.

Methods

Design

This research study falls within an overarching research project that aimed to address the following objectives:

1. Understand the experience of using an IKT approach in trainee-led research from the perspective of trainees, academic supervisors, and knowledge users; and
2. Co-design the content and format of a guide for trainees, academic supervisors, and knowledge users to use when applying an IKT approach in trainee-led research.

The project was guided by the design phases of the Generative Co-design Framework for Healthcare Innovation[25]: pre-design, co-design, post-design. This current research study presents the findings

related to Objective 1 and the pre-design phase of the project. We used a qualitative descriptive design with multiple qualitative methods.[26] Qualitative descriptive design is a qualitative research design grounded in a naturalistic paradigm, with the goal of describing individual experiences in a language that is easily understood.[27] The reporting of this study adhered to the Standards for Reporting Qualitative Research (SRQR) (Additional File 1).[28] Findings related to Objective 2 and the co-design and post-design phases of the project will be published separately. Research Ethics Board approval was received from a university level board (REB # 2023–6994).

Participants

We recruited three main groups: trainees, academic supervisors, and knowledge users (Table 1). We recruited through the Integrated Knowledge Translation Research Network (IKTRN) and snowball sampling. [29] The IKTRN was strategically selected given the international reach and diverse membership that included researchers, knowledge users, and trainees who use and study IKT approaches. An informational email with the study's purpose and activities was sent out to prospective participants with an invitation to email the research coordinator (RC; SMG) if interested. The RC followed up with more details regarding the project and eligibility and received written consent from each participant for study activities.

Table 1
Participant inclusion and exclusion criteria

Group	Inclusion criteria	Exclusion criteria
Trainees	• Current or past trainee member of the IKTRN (masters, doctoral, or post-doctoral) • Used an IKT approach in their master's, doctoral, and/or post-doctoral training • Able to read, understand, and communicate in English	• Past IKTRN trainee member who is now an academic supervisor
Academic supervisors	• Current member of the IKTRN • Current appointment with an academic institution • Experience being the primary academic supervisor for at least one masters, doctoral, or post-doctoral trainee using an IKT approach in the last 5 years • Able to read, understand, and communicate in English	
Knowledge users	• Health system leaders, decision-makers, healthcare providers, patients, caregivers, etc. (i.e., someone who would use research results to inform their decisions) • Must have been a partner (research team member) working on a trainee IKT study in the last 5 years • Able to read, understand, and communicate in English	• Knowledge users who are also academic supervisors

Data collection

Our data collection was completed in Spring and Fall of 2024 through two sequential steps. In Step 1, we hosted semi-structured interviews and focus groups to explore trainee, academic supervisor, and knowledge user experiences with IKT. In Step 2, we conducted a mixed-focus group with a sub-set of Step 1 participants to dive deeper into the findings from the initial interviews. All participants completed a consent form via email prior to their participation in the interview process. All interviews and focus groups were audio-recorded and transcribed using Microsoft Teams and a transcriptionist. Participants also completed a sociodemographic form to collect information on their gender, role, and level of experience with IKT.

Step 1. Group-Specific Interviews and Focus Groups

First, we conducted semi-structured interviews (focus group and one-on-one interviews, depending on participant choice and availability) with IKT trainees (i.e., masters, doctoral, or post-doctoral trainees),

academic supervisors, and knowledge users. Our semi-structured interview guide was informed by our 2024 scoping review exploring trainee experiences with IKT and aimed to explore the experience in using an IKT approach to trainee led health research.[6] This included questions related to concepts such as how the IKT approach was initiated, challenges and supports/recommendations in using an IKT approach to research, competencies in learning and using an IKT approach to research, and the values or drawbacks in using an IKT approach. Interview and focus group participants were asked if they were interested in being contacted for a follow-up focus group to review the initial findings.

Step 2. Mixed Focus Group

Following the individual interviews and focus groups based on role (trainee, academic supervisor, knowledge user), we hosted a mixed focus group with participants from all three roles to examine common themes identified throughout role-specific focus groups. All Step 1 participants were offered participation in the mixed focus group. The goal of the mixed focus group was to share preliminary findings from the interviews to help with further interpretation of experiences. Participants reviewed a three-page document summarizing key findings from step 1, prior to the mixed focus group. The mixed focus group created a rich dialogue between the IKT Triad (trainee, academic supervisor and knowledge user), supporting depth in our interpretations of experiences.

Data Analysis

We conducted inductive thematic analysis of our interview and focus group data. Our approach described below, follows the inductive steps outlined by Braun and Clarke (2021) [30]. Two independent team members (SMG and GM) reviewed the Step 1 interview and focus groups transcripts, noting memos in the side bars, and inductively created initial codes related to trainees', academic supervisors', and knowledge users' experience using an IKT approach to research. Team members met to discuss the transcripts and grouped similar codes into broader themes. We compared themes within and across participant groups to identify patterns of convergence and divergence in perspectives. Next, we created a 3-page document highlighting the inductive analysis of the trainee, academic supervisor, and knowledge user experience. We presented these initial findings at the Step 2 mixed-focus group with trainee, academic supervisor, and knowledge user participants. We used findings from the mixed-focus group and reflexive dialogue among team members to refine the final themes.

Researcher Positionality

Our author team is comprised of one academic supervisor (CC) and three trainees at the time of data collection (SMG, GM, JR), all of whom have used an IKT approach in their own research. CC conducted graduate research using an IKT approach and now supervises trainees engaged in IKT work. SMG, GM, and JR are currently completing or have recently completed graduate training in which they have partnered with knowledge users. As such, we approached this study as insiders to the phenomenon of

IKT. Our own experiences of building and sustaining partnerships during graduate training informed the development of the interview guide, the questions we probed during data collection, and our interpretation of participants' experiences.

This positioning carried both benefits and risks. Shared experience and vocabulary allowed us to recognize tensions that participants described, particularly around power and the relational work of maintaining research partnerships. Further, our collective investment in an IKT approach means we approached this study with a preexisting positive view of the phenomenon. Further, given our involvement in the IKT Research Network, some participants were known to members of the author team. We acknowledge that this familiarity may have shaped what participants felt able to disclose, particularly among trainee participants. No author held a supervisory or evaluative relationship with any participant.

Results

Our sample included seven academic supervisors, five trainees, and four knowledge users from across Canada and with a range of experiences. Participants completed a questionnaire with open- and closed-ended questions related to demographics and experience with IKT (Table 2).

Table 2
Participant demographics

	Characteristic	Result n= (%)
Academic Supervisors n = 7	Gender identity	
	Man	0(0.0%)
	Woman	7(100.0%)
	Levels of supervisory experience	
	Masters	4(57.1%)
	PhD	7(100.0%)
	Postdoctoral fellowship	3(42.8%)
	Geographical location	
	British Columbia	2(28.6%)
	Ontario	5(71.4%)
	How knowledgeable are you about how to use an IKT approach?	
	Extremely knowledgeable	3(42.8%)
	Very knowledgeable	4(57.1%)
	How confident are you about how to use an IKT approach?	
	Extremely confident	2(28.6%)
	Very confident	5(71.4%)
Trainees n = 5	**Gender Identity**	
	Man	1(20.0%)
	Woman	4(80.0%)
	Level of training recently completed or currently completing	
	Masters	2(40.0%)
	PhD	2(40.0%)
	Postdoctoral fellowship	1(20.0%)
	Geographical location	
	Nova Scotia	1(20.0%)
	Ontario	3(80.0%)

	Formal training	
	IKT or research coproduction	4(80.0%)
	Other collaborative approaches (e.g., community-based participatory action research)	3(60.0%)
	Knowledge translation	4(80.0%)
	Implementation research	2(40.0%)
	Implementation practice	1(20.0%)
	Experience with IKT outside of primary project	
	Yes	3(60.0%)
	No	2(40.0%)
	How knowledgeable are you about how to use an IKT approach?	
	Extremely knowledgeable	1(20.0%)
	Very knowledgeable	2(40.0%)
	Moderately knowledgeable	2(40.0%)
	How confident are you about how to use an IKT approach?	
	Extremely confident	1(20.0%)
	Very confident	2(40.0%)
	Moderately confident	1(20.0%)
	Slightly confident	1(20.0%)
Knowledge users	**Gender identity**	
n = 4	Man	1(25.0%)
	Woman	3(75.0%)
	Geographical location	
	British Columbia	1(25.0%)
	Manitoba	1(25.0%)
	Nova Scotia	1(25.0%)
	Ontario	1(25.0%)
	Self-identified knowledge user role(s)	
	Family member/caregiver	1(25.0%)

Healthcare system administrator/manager	1(25.0%)
Patients	2(50.0%)
Practitioner/clinician	1(25.0%)
How many trainee-led research projects have you engaged in ?	
1	1(25.0%)
6	1(25.0%)
10	1(25.0%)
20	1(25.0%)
At what level of training were the trainees you partnered with ?	
Masters	2(50.0%)
PhD	3(75.0%)
Postdoctoral fellowship	1(25.0%)
Unsure	1(25.0%)
Formal training	
IKT or research coproduction	1(25.0%)
Other collaborative approaches (e.g., community-based participatory action research	2(50.0%)
Knowledge translation	3(75.0%)
Implementation research	1(25.0%)
How knowledgeable are you about how to use an IKT approach?	
Very knowledgeable	2(50.0%)
Moderately knowledgeable	2(50.0%)
How confident are you about how to use an IKT approach?	
Extremely confident	1(25.0%)
Very confident	1(25.0%)
Moderately confident	2(50.0%)

Table 2. Participant demographics

Perception of IKT as an Approach

We explored perceived values and drawbacks of using IKT as an approach to trainee-led research, from the perspective of trainees, supervisor, and knowledge user participants (Fig. 1). Values of IKT were clustered into three core groups: promotes mutual learning, humanizes research, and maximizes impact. Drawbacks are aspects of IKT that trainees, supervisors, and knowledge users viewed as disadvantages that may deter trainees from considering engaging in an IKT approach. Drawbacks were related to costs and investment and institutional and partner readiness.

Value: Promotes Mutual Learning

Participants discussed how IKT promotes bidirectional learning, resulting in a mutual benefit for trainees and their knowledge user partner(s). Trainee, supervisor, and knowledge user participants expressed that they value IKT for how it exposes trainees to new perspectives. Working with and learning from different partners has a ripple effect. For trainees, IKT immediately informs the direction of their research project and shapes how they approach research over time. For example, one trainee shared:

"I've noticed I started asking myself different questions as I've kind of moved on through my degree, and when I am writing these kinds of things, because **now I have like our patient partner's voice in my head all the time as I'm writing things**." – *Trainee*

IKT also promotes mutual learning through fostering engaged and empowered trainees and knowledge user partners. Supervisors shared that trainees who use an IKT approach learn to appreciate the iterative nature of research and the importance of partnerships for more responsive research. In turn, supervisors have observed that these trainees build strong careers. Knowledge user participants described how, by bridging the worlds of research and frontline healthcare, IKT gives these partners a role as active participants and makes them feel heard. Participants reflected on how trainees and knowledge users grow together through this partnership, sharing knowledge and skills. One knowledge user shared their experience of the mutual benefits of IKT and the solid foundation it can build for trainee researchers:

"I just find it's a dual benefit. I mean **I was able to hone some of my research skills, and my colleague was able to appreciate new clinical perspectives**. *I mean it's just that that back and forth and that professional growth. And I think there's a lot of value for trainees in getting that early in their career." – Knowledge User*

Value: Humanizes Research

Participants reflected on how IKT is valued for its role in humanizing the research process. First, participants discussed how IKT is pragmatic and action-oriented. They viewed the outputs of IKT trainee-led research as more useful and more easily implemented and sustained in real-world settings. One academic supervisor shared how IKT grounds trainees' research in the realities of clinical practice:

"It makes it very practical. … **I think IKT students don't have that disconnect from reality, or that ivory towerness that other students might**. *That, you know, I'm doing important work, but I have no idea about the real world and how this is really going to impact. Because you're in it, you know, and you're seeing like immediate impacts as you're going along." – Academic Supervisor*

Participants also discussed how IKT humanizes research by being more responsive and relevant, ensuring research aligns with partners' needs and priorities. Trainees expressed how producing research with knowledge user partners is motivating as it helps them see the direct value and impact of their work. For example, one trainee shared how this shapes their approach to research:

"But [IKT] reminds you and brings you back to who's actually potentially going to be benefitting from this, and why do I need to keep them in mind? **You have like a human face and voice in front of you as you're even just thinking through your results**." *- Trainee*

Value: Maximizes Impact

Participants identified several ways in which an IKT approach maximizes the impact of trainee-led research. These impacts include better quality data, less research waste, and improved dissemination. Participants explained that the trainee-knowledge user partnership sets up a direct pathway to impact. Trainees described how using an IKT approach has a layered influence on their research. It informs appropriate data collection tools and analysis, leading to more reflective data, and long-term relationships with partners. One trainee shared their perspective on the value of an IKT approach on research waste:

"It's expensive, and it takes time. But I think in the end, you definitely get that money and time back because hopefully you've saved time in the translation, and **you saved research waste because what you're delivering is actually what people want and what they need**." *- Trainee*

Drawback: Institutional and Partner Readiness

Participants highlighted that a key drawback is the lack of readiness of academic institutions, community partners, and organizations for IKT partnered research. Trainees using an IKT approach are situated within a very dynamic research practice environment where they often come up against constraints beyond their control, such as graduate program policies and challenges obtaining ethical approval. Trainee participants shared experiences having to negotiate using IKT within academic systems where they feel it is not valued or supported. For example, one trainee described their experience trying to use an IKT approach:

"And so you have to kind of find a way to make [IKT] work within something that's like valued, even though it might not be of interest. And you have to like go outside **because [IKT] doesn't exist in there. In academia**" *- Trainee*

The lack of support for IKT research extends beyond academic institutions. Trainee and supervisor participants discussed the challenge of maintaining organizational and community partners' excitement and engagement in IKT research. In the mixed focus group, one knowledge user expanded on this, sharing their experience working within a health system organization that does not have the structures in place to support this type of partnered research:

“I mean I hear all the time, every day, [tertiary care site] is a trainee-focused institution. You will encounter trainees and med students and residents and students of all different disciplines. But there's research trainees and research students as well. And so **I don't necessarily see that we as an organization have the structures in place to equally support trainees** *in research that we do in the clinical area.” – Knowledge User*

Drawback: Cost and Investment

Participants discussed the costs of an IKT approach, including time and financial expense and the emotional toll. Although an IKT approach requires more investment from all parties involved and can slow the research process, it is worthwhile. One trainee shared:

“So it's a more effortful process, I think. And sure, **it would be easier for me to just do it all on my own**, *and, you know, use my own perspective. I could save time potentially that way. And again, I think it comes back to the trade off of is that really worthwhile?” - Trainee*

Participants also emphasized the emotional toll of nurturing the relationships between trainees, knowledge user partners, supervisors, and thesis committee members. Supervisors described the distress they experience when mediating complex dynamics between different interest-holders involved in a trainee’s research. For example, in the mixed focus group, one knowledge user described the tradeoff of investing in IKT partnerships:

“Because **although there's a degree of emotional toll and investment in any relationship, there's also a lot of benefit**, *emotional and interpersonal benefit, to having a good relationship with a trainee in an IKT partnership.” – Knowledge User*

Factors Influencing Engagement in IKT

Drawing on participants’ experiences being involved in trainee-led research, we explored barriers and facilitators to using an IKT approach. These determinants span individual, interpersonal, and organizational levels (Figs. 2 and 3). The most commonly identified barriers to using an IKT approach in trainee-led research are discussed first, followed by facilitators.

Barriers to IKT in Trainee-Led Research

Individual Level Barriers

Trainee and supervisor participants emphasized that a lack of knowledge is a key barrier for trainees to know how to do IKT. Participants described that traditional research training does not equip trainees with the procedural and interpersonal knowledge needed to conduct partnered research. Supervisors warned that using an IKT approach without adequate knowledge can result in tokenism. For participants who had not been exposed to the IKT in practice and did not have role-models to learn from, it was more difficult to acquire this knowledge. Trainees shared how IKT forced them to immerse themselves in unfamiliar ways of knowing and doing:

"*I think for me, that was like the first challenge -* **trying to be comfortable with being uncomfortable.** *Which is often the thing with participatory research. It's characterized by messiness. And getting comfortable with that was a little challenging as a beginner in the space." - Trainee*

" **Foundational training is counterintuitive to IKT.** *We're trained in a way that researchers get to control the world when we're pursuing our research. But then when we actually enter the world, we have very little control." - Trainee*

Lack of trainee confidence was another commonly reported barrier by trainees, supervisors, and knowledge users. Participants described how trainees' initial interest in an IKT approach is often self-driven or encouraged by their supervisors. One trainee expressed how having an interest in IKT is different than having the confidence to apply it in practice:

*"Like it's one thing, I think, to know that something is supported and something's happening around you, and that you're being supported to do it. But then I think***to actually take it upon yourself and have to, you know, operationalize something and actually implement the practice in your research is a very different story**." *- Trainee*

Relatedly, participants discussed how trainees can be uncomfortable giving up power over the research process. Supervisor and knowledge user participants shared the implications that arise when trainees lack an innate passion for engagement and partnered research:

*"[Trainees] have to find the pathways to explicitly value those contributions, that shared decision-making, the common vision. And I think sometimes***the idea that you're not in control and don't have a very pre-determined pathway is very scary for trainees.***And it's very scary for many researchers. And that's where we see the tokenistic kind of application, is where people are not truly prepared to kind of follow that shared decision-making process…" – Academic Supervisor*

*"[Trainees] may potentially be encouraged to do that or nudged to do it by somebody above them. And maybe they're not really feeling comfortable in that space, and they don't have the appropriate training, and you're just kind of like putting them out there in the world.***And, you know, if they start off on a bad foot, it's hard to regain the trust of the person***"- Knowledge User*

Interpersonal Level Barriers

Participants identified a lack of interpersonal skills as a common barrier for trainees to establish and maintain meaningful partnerships. One knowledge user shared:

"Because **a lot of it is common sense**. *It's compassion, it's empathy. And a lot of that is not taught" – Knowledge User*

Supervisors described how trainees must be open to learning IKT through doing and self-reflection, not just methodological training:

"You know, just to build on the really real theme of vulnerability in students who are engaging in this kind of work, in this collaborative work, is **not only are they learning, you know, the rigour of the research process, but also the approach and the building of relationships***" – Academic Supervisor*

"And we've had to work a lot on feedback and their ability to take feedback. Because I'm not just giving them feedback on their paper or their method, **I'm giving them interpersonal feedback, which requires a lot of humility***" – Academic Supervisor*

When it comes to the relationship between trainees and knowledge user partners, participants emphasized the impact of poor communication. Knowledge user participants expressed that it can be difficult for them to engage with trainees when there is a lack of transparency about the intended outcomes, values and beliefs, expectations, and benefits of the partnership. One trainee shared:

*"But I think that sometimes***it was challenging to communicate***the goal of what I wanted people to…like what type of expertise I was looking to have them contribute, or what perspective I was hoping to have them contribute" – Knowledge User*

Participants discussed how the relationship between trainee and knowledge user partners can be challenged by differing priorities and timelines. One academic supervisor shared about balancing the tensions between student and community needs:

"So I have one student that is partnered in community, and the community really wants to move forward fast. And perhaps the value of the academic process is not… **You know, the outcome is so needed in community that, you know, that can end up as a push and pull**.*" – Academic Supervisor*

Trainees and supervisors shared how project timelines constrain trainees' ability to foster meaningful connections with knowledge user partners:

"Obviously, I think **one of the biggest issues is the time to build meaningful partnership** *with people, you know, to actually do this work well. And I find that the four years or whatever you have is actually really tough. Because you have to come in from the start with a sort of research agenda. So it's really hard to start from like the ground up with partners." – Trainee*

"I think the relationship building, the trust building, mutuality, and those pieces take time. And so I think, you know, **time is not always something that students have a lot of in a program that's heavily prescriptive***" – Academic Supervisor*

Another barrier identified by trainee and knowledge user participants is how trainees may lack experience in professional roles. They explained that this can negatively impact trainees' credibility with health system partners. Some trainees worry about how this may affect their ability to connect with their knowledge users and participants, and subsequently impact the quality of their research:

“So as a student, I felt like **I was lacking that piece of not understanding what a practitioner would go through.** *And I was worried I wouldn't be able to understand their perceptions of what the issue we were studying was.” - Trainee*

Organizational Level Barriers

Most barriers identified by participants were situated at the organizational level. This included academic institutions and knowledge user organizations. Participants described barriers arising from the prescriptiveness of institutions, including policies related to committee membership, intellectual property, and ownership. Knowledge user and trainee participants shared about how the rigidity of university regulations does not allow for IKT approaches to trainee-led research:

“ **The university can be a barrier.** *So on my first experience on a thesis advisory committee, I was not allowed to be an official member of the committee. So I couldn't vote, and I didn't attend the meetings with the full committee. I attended all my meetings separately” – Knowledge User*

“So like **collective ownership is very challenging**. *It's one of the guiding principles of a more participatory approach, say. But how do you have collective ownership when you have to be the sole…like you have to have independent intellectual like leadership over the material? You're right there from the outset creating some sort of like power dynamic or barrier.” – Trainee*

Trainee and supervisor participants also expressed challenges related to the culture of academic institutions. They discussed how the traditional expectations and currency of academia do not align with partnered research. Trainees perceive that this could impact how outputs of their work are valued:

*“So like working in partnership is slower and it takes longer. And so what the outcome of that is that our***academic institutions still value traditional academic outputs**. *Publications, that is still what we’re measured against, right. So if I'm going up against someone who say didn't do that, we don't… There's no criteria that's like, Oh, how did you work meaningfully in partnership with people?” - Trainee*

Likewise, challenges obtaining ethical approval for IKT trainee-led research are closely tied to the traditional culture within academic institutions. Participants described how research ethics boards are not accustomed to approving partnered research approaches:

“So sometimes they think if the person's on the team, we need ethics approval and consent for them to be on the team. And I’m like, No, no, no, they're part of the team. They're just like a researcher on the team. I don't get consent for them to be on the team. **And Ethics, like they don't understand**.” *– Academic Supervisor*

Participants also described how there can be challenges related to knowledge users’ capacity for engagement. Their capacity can be impacted by turnover rates within organizations, protected time, and the volatility of health policy contexts. One academic supervisor described how trainees must manage these fluctuations:

“Some knowledge user organizations are all in, some thought they were all in, some were all in at the beginning and then have big staff changes and are no longer all in. …. I think with policy, if you're doing health policy research, I find it much more volatile because people come and go at a faster…at a higher rate. … That's part of what the trainee is training for, is to understand that sort of volatility of not just the relationship with the organization, but within the organization itself.”-Academic Supervisor

There is a lack of resources to support trainees as they problem-solve challenges related to partnered research. Participants described resources as access to funding to compensate knowledge users for their involvement, and capacity-building initiatives to support trainees’ development in IKT approaches. One trainee described a lack of access to practical resources about IKT:

“I read all the papers. **But there was a real lack of practical guidance.** *They sort of talked about this is what IKT is, but not really about the nitty gritty of this is how you could do it. And I think the challenge with that is because IKT is an approach, it's not a method” - Trainee*

Facilitators of IKT in Trainee-Led Research

We explored facilitators for trainees across each role including the point of view of trainees, supervisors, and knowledge users. Facilitators are organized at the individual, interpersonal and organizational level.

Individual level

At the individual level we heard that building a foundation as a trainee is essential for engagement in an IKT approach. It is important for trainees to fully appreciate both theoretically and practically what an IKT approach was. This process may involve learning and unlearning. For example, one academic supervisor shared:

“Or even I find in their research methods, it hasn't been touched on, or that positionality in thinking about power, privilege, positionality and [knowledge translation] hasn't been addressed in their research methods. **So we sometimes have to do some learning and unlearning at an individual level there**.*” - Academic Supervisor*

Additionally, participants emphasized the need for personal discovery at an individual level with reflection on communication skills and decision-making skills. They highlighted the importance of building a solid foundation of self-awareness and then building this foundation through engagement in learning opportunities related to IKT. One academic supervisor described the need for trainees to be “humble learners”, they shared:

*“I think one of the top recommendations or guiding principles that I would suggest for the students would be to just be***a humble learner throughout this, and approach the whole process with humility**, *knowing that the knowledge users are coming at this with an intimate knowledge of the context in which the research and the project is occurring. And so remaining open to what the knowledge users have to offer and share, and the guidance that they offer can lead to a positive process.” – Academic Supervisor*

Interpersonal level

At an interpersonal level, partnerships were emphasized as being foundational to an IKT approach. This included the importance of building meaningful partnerships. Building these partnerships requires making connections or leveraging connections, along with acknowledging when power dynamics exist. To ensure sustainability and meaningful engagement, participants recommended having clear terms of governance to develop a shared understanding of roles, expectations and responsibilities of all members involved in the team. One trainee shared:

"focusing on relationship building is probably the utmost kind of important philosophy that you could adopt for the purpose of maintenance and sustainability of any [IKT] projects." - Trainee

In addition, many participants shared the importance of choosing a supervisor who understands the importance of IKT, values mentorship and has experience using IKT as a research approach. Participants highlighted the importance of trainees having mentors who value IKT, both as supervisors and as members of their supervisory committee. Having individuals on the supervisory team who understand what it takes to engage in an IKT approach can help ensure the proposed IKT plan is both feasible and adequately supported throughout the project. One trainee shared:

"But also I think from a little bit of an advocacy point of view, too, I wanted someone in my corner who was going to stand up with me when I wanted to propose, you know, having this expert panel assembled to be involved in each of these study phases from all those different stakeholder perspectives. I wanted someone who I knew was going to see the value in that, and just kind of fight with me for it, if we needed to" – Trainee

Organizational Level

At an organizational level, most participants shared the importance of being realistic with themselves and their knowledge user partners about the dissertation timeline and available funding. IKT timelines are complex and limited by organizational structures. Trainees need to take time to consider their timeline and have an open discussion about remuneration, compensation, values, beliefs, expectations, and priorities. One participant shared that trainees' ability to implement IKT best practices at individual or interpersonal levels is largely impacted by the organizational structure:

"Because I feel a lot of these recommendations are contingent upon organizational structures and capacity building initiatives that exist or do not exist." – Participant of Mixed Focus Group

Some participants shared how the nuances of an IKT approach take time. As such, trainees need to consider this when planning their timeline. Participants emphasized the importance of leveraging partnerships with knowledge user organizations, along with seeking out specific funding opportunities within organizations such as the IKTRN, as ways to ensure feasibility within their IKT plan and timeline. One participant shared the importance of building a feasible plan with adequate funding:

"And you need realistic timelines. *IKT can take a very long time. So you need someone… And that's part of the reason you need someone with experience. You need to make sure that when you're developing it… One of the big things that we did do well was that focus on feasibility all through, from the beginning throughout. Because, you know, I mean ideally you'd have all the engagement. But that blows out the resources and the time. So really, getting that balance right is really important to make it feasible." – Trainee*

Discussion

This qualitative descriptive study provides an in-depth exploration of trainee-led research using an IKT approach from the perspectives of trainees, academic supervisors, and knowledge users. We found that IKT is highly valued across all three roles; however, participants simultaneously named several drawbacks. Participants described barriers and facilitators to using an IKT approach spanning individual, interpersonal, and organizational levels with most determinants at the organizational level. Trainees experienced these challenges while operating within a unique position, given their limited power and credibility, yet expectation to manage substantial relational work with knowledge users without clear supports.

A key finding from all three participant groups was the structural tension between graduate training and using an IKT approach. The growing body of knowledge on IKT highlights the flexibility, relationship building, and shared decision-making needed to support IKT.[2, 4, 13] This is often in direct opposition to graduate and postdoctoral training that requires concrete timelines and milestones, clear ownership for trainees, and traditional academic productivity. Our participants described several challenges at the academic institutional level with using an IKT approach such as prescriptive timelines in graduate training, committee membership stipulations, and lack of funding supports for partnership work. These barriers to IKT are consistent with previous literature exploring trainees' experiences with using co-production approach to research, which highlights a mismatch between the fixed timelines of a doctoral program versus the more iterative pace of partnership building.[15, 31] Study participants also described traditional academic outputs (e.g., peer-reviewed publications) as a significant motivator for trainees; however, these outputs were not viewed as a priority by knowledge users. Trainees are being pulled toward publications and conference presentations because those traditional academic metrics are what the broader academic system rewards.[32] It is clear from our findings and the supporting literature that trainees are expected to lead partnership-based research within systems optimized for individual-level academic achievement.

This study highlights how interpersonal factors among the 'IKT triad' of trainees, supervisors, and knowledge users influence the use of an IKT approach. Within our study, trainees described power differentials and feelings of vulnerability in their partnership experiences. This reflects their unique position: not yet fully independent researchers but responsible for initiating and managing research partnerships. The importance of power in IKT is gaining traction in the literature, with recent work demonstrating how power inequities can undermine effective research partnerships with knowledge users.[9, 31] However, this literature focuses primarily on power differentials among established

researchers and knowledge users, and does not include the trainee experience. Kothari and colleagues[9] have called for the development and testing of empirically based strategies, through which the dimensions of power in IKT can be navigated. Our findings extend this call to trainees who must navigate power hierarchies across multiple layers of academic, institutional, and practice- and/or community-based settings. Our findings also point to the role supervisors play in facilitating an IKT approach and navigating power hierarchies. Cox et al.[33] led a co-produced ethnography of consumer partnerships during a doctoral study and found that trainees are the centre of these partnerships but dependent on supervisory supports. Supervisors are needed to support legitimacy, facilitate access to knowledge users, and balance power differentials within the IKT triad. Together, these findings indicate that supporting trainee-led IKT requires more than skills-based training in graduate programming.

Participants across all three roles described the emotional toll of managing and maintaining research partnerships when using an IKT approach in trainee-led research. Trainees described challenges with the sustained effort needed to maintain knowledge user engagement, while supervisors described their own distress when mediating dynamics among trainees, knowledge users, and thesis committee members. These findings point to the emotional and relational labor of IKT, which is often an invisible phenomenon within collaborative research approaches. This concept is starting to be explored in the IKT literature,[34, 35] including Faulkner et al.'s work that identified emotional labour as a distinct and unrecognized category of work in mental health co-production.[34] Oliver and colleagues[36] describe personal risks to researchers, such as burnout and stress, as costs of doing IKT work. However, as described above, trainees experience this emotional labour from a position of limited power and without the supports of established researchers.[37] Faulkner et al found that funders and academic institutions fail to recognize the work involved in supporting co-production.[34] Our study findings extend this to graduate training: relational labour is not considered in academic activities nor supported by institutional structures and resources.

Implications

Our findings indicate that effective trainee-led IKT is not solely dependent on trainee competence; it requires coordinated support across trainees, supervisors, knowledge users, and the institutions supporting them. Our previous scoping review similarly called for multi-level strategies to support an IKT approach in trainee-led research.[6] Building on that review, we outline implications for each of these roles.

First, IKT support should be embedded formally within graduate programs but extend beyond skills and competency training. The relational and structural dimensions of IKT that our findings show are not addressed by competency training alone. For instance, alongside interpersonal training related to IKT, graduate programs should encourage trainees to engage in explicit discussions of power, positionality, and role clarity. Support at the institutional level requires supportive infrastructure for trainees to engage in research partnerships. Examples include: funding mechanisms for trainee partnerships, including honoraria for knowledge users; structured and protected time for partnership development; flexibility

within otherwise fixed thesis and dissertation timelines; and recognition of IKT outputs that differ from traditional publications and presentations. These enabling conditions would reposition academic institutions as active partners in trainee-led IKT rather than constraints to be worked around.

Second, within this supportive infrastructure, academic supervisors play a key role in facilitating trainees' access to research partnerships and ongoing learning opportunities. When supervisors model an IKT approach in their own work, trainees learn co-production through doing. Supervisors are also positioned to facilitate difficult conversations with knowledge users, navigate potential power imbalances within the IKT triad, and offer transparency around feasibility and timelines.

Third, engaging knowledge users early to establish clear roles and expectations helps the team to understand what each member (trainee, supervisor, and knowledge user) brings to the research. Knowledge users can be a supporting role in this partnership by recognizing the constraints of a trainee's individual project versus responsibilities that may sit within the supervisor or a broader research program partnership.

Overall, these implications are interdependent. No single team member can conduct IKT trainee-led research alone. As a starting point, guidance developed for and with trainees, supervisors, and knowledge users may make these shared responsibilities concrete. To understand existing resources for graduate students, we recently conducted an environmental scan of guidelines to support trainees to engage in an IKT approach and identified a lack of trainee specific resources[16]. This current study's findings reiterate that guidance would be helpful for trainees in successfully and sustainably engaging in an IKT approach in their graduate level research.

Contribution to the IKT Literature and Future Research

To date, the IKT literature has largely focused on established researchers and their partnerships with knowledge users, highlighting the principles, benefits, and more recently the power dynamics and costs of co-production. However, existing evidence does not address the trainee experience within the constraints of graduate training. This study moves the existing IKT literature into the graduate training context by bringing in multiple perspectives from trainees, supervisors, and knowledge users. We highlight the challenges of existing structures while reiterating the need to move beyond capacity building. Our findings set the stage for future IKT research in this area. Further longitudinal study of trainee experience with IKT research would offer additional insights into the journey of IKT through graduate and postdoctoral training. Efforts are needed to design and implement interventions to facilitate trainee-led IKT. While trainee-focused interventions are necessary, researchers should also consider designing interconnected supervisor and knowledge user interventions to support IKT activities. Empirical testing of these interventions would contribute to the IKT literature on evaluation which is currently understudied.

Strengths and Limitations

A key strength of this study is our multi-perspective sample. By including trainees, academic supervisors, and knowledge users, we were able to examine trainee-led IKT from all three members within a partnership rather than relying on a single account of a shared experience. This design allowed us to identify where perspectives converged and diverged. Further, our mixed focus group provided a space to explore these differences directly with participants. Our sample also included participants from four provinces, with two participants having experience with IKT approaches in the United Kingdom, which allowed us to capture a range of institutional and health system contexts across Canada.

This study also has several limitations. Our sample was small (n = 16), with uneven representation across the three groups, and knowledge users were the smallest group. Participants were recruited through the IKTRN, and this self-selection likely resulted in an overrepresentation of individuals who are already knowledgeable about, and favourably disposed toward, an IKT approach. Most participants reported moderate to high knowledge and confidence in IKT. As such, our findings may underrepresent the experiences of trainees who attempted an IKT approach and abandoned it, or who were never exposed to it, as well as knowledge users whose partnership experiences were sufficiently negative that they disengaged from partnered research. Finally, our sample was drawn primarily from a Canadian context, and the institutional and funding structures described here may not transfer to other jurisdictions.

Conclusions

This study examined trainee-led IKT from the perspectives of trainees, academic supervisors, and knowledge users, and found many benefits and value to using an IKT approach. Several structural challenges were also described with trainees being expected to build and sustain research partnerships

limited power and institutional support. Effective trainee-led IKT therefore requires coordinated, multi-level support that extends beyond individual competency training. Our findings highlight the need for institutional infrastructure and resources that support the pace and outputs of IKT research, supervisors who model IKT and actively mediate power imbalances, and expectations discussed openly among all three partners. Future research is needed to develop and evaluate interventions that address the interconnected roles within the IKT triad of trainees, academic supervisors, and knowledge users.

Abbreviations

IKT
Integrated Knowledge Translation
IKTRN
Integrated Knowledge Translation Research Network

Declarations

Ethics approval and consent to participate: This study was approved by the Dalhousie University Research Ethics Board (File Number: 2023-6994)**.** All participants provided written consent to participate and publish de-identified results from this study.

Consent for publication: Not applicable.

Availability of data and materials: The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests.

Funding: This work was supported by the Integrated Knowledge Translation Research Network, which is funded by a Canadian Institutes of Health Research Foundation Grant (CIHR FDN #143237). The funder had no role in the design, preparation, review, or approval of this paper.

Authors' contributions: CC, SMG, and JR contributed to the conceptualization, study design, and development of data collection materials. SMG and GM contributed to data collection and analysis. CC, SMG, and GM contributed to data interpretation and manuscript writing. All authors critically revised the manuscript and approved the final version for publication.

Acknowledgements: We wish to thank Ian D. Graham, Anita Kothari, and Chris McCutcheon from the IKTRN for their input on the study protocol and for facilitating access to IKTRN trainees, supervisors, and knowledge user members. We would like to thank Emily Giroux and Alanna Shwed for their support in recruitment and early planning for this project.

References

1. Kothari A, McCutcheon C, Graham ID. Defining Integrated Knowledge Translation and Moving Forward: A Response to Recent Commentaries. Int J Health Policy Manag. 2017;6:299–300. https://doi.org/10.15171/ijhpm.2017.15.
2. Nguyen T, Graham ID, Mrklas KJ, Bowen S, Cargo M, Estabrooks CA, et al. How does integrated knowledge translation (IKT) compare to other collaborative research approaches to generating and translating knowledge? Learning from experts in the field. Health Res Policy Syst. 2020;18:35. https://doi.org/10.1186/s12961-020-0539-6.
3. Jull J, Giles A, Graham ID. Community-based participatory research and integrated knowledge translation: advancing the co-creation of knowledge. Implement Sci IS. 2017;12:150. https://doi.org/10.1186/s13012-017-0696-3.
4. Kothari A, Sibbald SL, McCutcheon C, Berta W, Urquhart R, Horsley T, et al. How does integrated knowledge translation work? A realist review. Health Res Policy Syst. 2025;23:102. https://doi.org/10.1186/s12961-025-01374-0.
5. Gagliardi AR, Berta W, Kothari A, Boyko J, Urquhart R. Integrated knowledge translation (IKT) in health care: a scoping review. Implement Sci IS. 2016;11:38. https://doi.org/10.1186/s13012-016-

0399-1.

6. Cassidy CE, Shin HD, Ramage E, Conway A, Mrklas K, Laur C, et al. Trainee-led research using an integrated knowledge translation or other research partnership approaches: a scoping review. Health Res Policy Syst. 2021;19:135. https://doi.org/10.1186/s12961-021-00784-0.
7. Government of Canada CI of HR. Types of grants - CIHR. 2024. https://cihr-irsc.gc.ca/e/54066.html. Accessed 28 July 2026.
8. Government of Canada CI of HR. CIHR Grants and Awards Expenditures - CIHR. 2020. https://cihr-irsc.gc.ca/e/51250.html. Accessed 28 July 2026.
9. Kothari A, Holmes BJ, Lang I, McCutcheon C, Comer L, Graham ID. It is time to acknowledge and act on the importance of power in integrated knowledge translation. Health Res Policy Syst. 2025;23:78. https://doi.org/10.1186/s12961-025-01353-5.
10. Richards DP, Poirier S, Mohabir V, Proulx L, Robins S, Smith J. Reflections on patient engagement by patient partners: how it can go wrong. Res Involv Engagem. 2023;9:41. https://doi.org/10.1186/s40900-023-00454-1.
11. Nyström ME, Karltun J, Keller C, Andersson Gäre B. Collaborative and partnership research for improvement of health and social services: researcher's experiences from 20 projects. Health Res Policy Syst. 2018;16:46. https://doi.org/10.1186/s12961-018-0322-0.
12. Dougherty M, Bhatti J, Dalo S, Dong M, Licskai C, Ferrone M, et al. Feedback as a key process in effective integrated knowledge translation. JBI Evid Implement. 2026;24:1–8. https://doi.org/10.1097/XEB.0000000000000610.
13. Yeung E, Scodras S, Salbach NM, Kothari A, Graham ID. Identifying competencies for integrated knowledge translation: a Delphi study. BMC Health Serv Res. 2021;21:1181. https://doi.org/10.1186/s12913-021-07107-7.
14. Government of Canada CI of HR. Glossary of Funding-Related Terms - CIHR. 2007. https://cihr-irsc.gc.ca/e/34190.html. Accessed 28 July 2026.
15. Curry J, Bowers SP, Wray A, Fearfull A, Roberts H. Patient and public involvement in health and social care doctoral research: recommendations co-produced by doctoral researchers, public contributors, and a public involvement coordinator. Res Involv Engagem. 2026;12:95. https://doi.org/10.1186/s40900-026-00887-4.
16. Gallant SM, Cassidy C, Al-Rassi J, Moody E, Shin HD, Best S, et al. Integrated knowledge translation guidelines for trainees in health research: an environmental scan. Health Res Policy Syst. 2023;21:74. https://doi.org/10.1186/s12961-023-01024-3.
17. Barratt H, Shaw J, Simpson L, Bhatia S, Fulop N. Health services research: building capacity to meet the needs of the health care system. J Health Serv Res Policy. 2017;22:243–9. https://doi.org/10.1177/1355819617714815.
18. Bowen S, Botting I, Graham ID, MacLeod M, de Moissac D, Harlos K, et al. Experience of Health Leadership in Partnering With University-Based Researchers in Canada– A Call to "Re-imagine" Research. Int J Health Policy Manag. 2019;8:684–99. https://doi.org/10.15171/ijhpm.2019.66.

19. Chisholm A, Gilfoyle M, MacNeil M, Melro C. Shaping the future of primary care in Canada: trainee insights on patient and public engagement in health system transformation research. Health Res Policy Syst. 2025;23:98. https://doi.org/10.1186/s12961-025-01366-0.
20. Medeiros P, Laur C, Nguyen T, Gilfoyle M, Conway A, Giroux E, et al. Building capacity for integrated knowledge translation: a description of what we can learn from trainees' experiences during the COVID-19 pandemic. Health Res Policy Syst. 2022;20:100. https://doi.org/10.1186/s12961-022-00900-8.
21. Zych MM, Berta WB, Gagliardi AR. Conceptualising the initiation of researcher and research user partnerships: a meta-narrative review. Health Res Policy Syst. 2020;18:24. https://doi.org/10.1186/s12961-020-0536-9.
22. Zych MM, Berta WB, Gagliardi AR. Initiation is recognized as a fundamental early phase of integrated knowledge translation (IKT): qualitative interviews with researchers and research users in IKT partnerships. BMC Health Serv Res. 2019;19:772. https://doi.org/10.1186/s12913-019-4573-4.
23. Sibbald SL, Kang H, Graham ID. Collaborative health research partnerships: a survey of researcher and knowledge-user attitudes and perceptions. Health Res Policy Syst. 2019;17:92. https://doi.org/10.1186/s12961-019-0485-3.
24. Kothari A, McCutcheon C, Graham ID. Beyond the horizon: new directions in research coproduction. Health Res Policy Syst. 2026;24:58. https://doi.org/10.1186/s12961-026-01510-4.
25. Bird M, McGillion M, Chambers EM, Dix J, Fajardo CJ, Gilmour M, et al. A generative co-design framework for healthcare innovation: development and application of an end-user engagement framework. Res Involv Engagem. 2021;7:12. https://doi.org/10.1186/s40900-021-00252-7.
26. Doyle L, McCabe C, Keogh B, Brady A, McCann M. An overview of the qualitative descriptive design within nursing research. J Res Nurs JRN. 2020;25:443–55. https://doi.org/10.1177/1744987119880234.
27. Fain J. Reading, Understanding, and Applying Nursing Research. 7th edition. F.A. Davis Company; 2025.
28. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med J Assoc Am Med Coll. 2014;89:1245–51. https://doi.org/10.1097/ACM.0000000000000388.
29. IKT Research Network. IKT Research Network. https://iktrn.ohri.ca.
30. Braun V. Thematic Analysis: A Practical Guide. 2021;:1–100.
31. Cameron J, Kothari A, Fiolet R. Addressing power imbalance in research: exploring power in integrated knowledge translation health research. Res Involv Engagem. 2025;11:35. https://doi.org/10.1186/s40900-025-00706-2.
32. Trueblood JS, Allison DB, Field SM, Fishbach A, Gaillard SDM, Gigerenzer G, et al. The misalignment of incentives in academic publishing and implications for journal reform. Proc Natl Acad Sci. 2025;122:e2401231121. https://doi.org/10.1073/pnas.2401231121.

33. Cox R, Molineux M, Kendall M, Tanner B, Miller E. 'Learning and growing together': exploring consumer partnerships in a PhD, an ethnographic study. Res Involv Engagem. 2023;9:8. https://doi.org/10.1186/s40900-023-00417-6.
34. Faulkner A, Thompson R. Uncovering the emotional labour of involvement and co-production in mental health research. Disabil Soc. 2023;38:537–60. https://doi.org/10.1080/09687599.2021.1930519.
35. Liabo K, Asare L, Ruthen P, Burton J, Staunton P, Day J. Emotion in public involvement: A conceptual review. Health Expect. 2024;27:e14020. https://doi.org/10.1111/hex.14020.
36. Oliver K, Kothari A, Mays N. The dark side of coproduction: do the costs outweigh the benefits for health research? Health Res Policy Syst. 2019;17:33. https://doi.org/10.1186/s12961-019-0432-3.
37. Lambley R. The challenges of navigating participatory research: the perspective of a doctoral student who co-ordinates a team of researchers with lived experience of mental health challenges. Educ Action Res. 2025;33:143–52. https://doi.org/10.1080/09650792.2024.2429444.

Figures

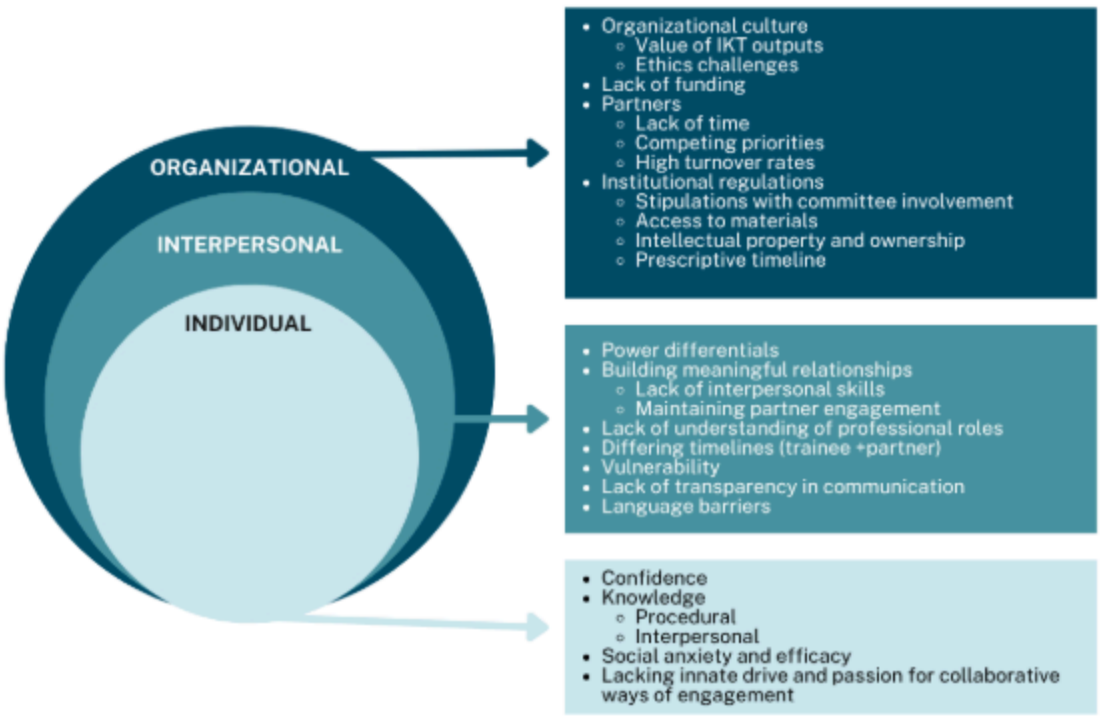


Figure 2

Barriers to using an IKT approach in trainee-led research

Supplementary Files

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

- AdditionalFile1complete1.pdf