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Better together: mitigating consumer vulnerability risk in healthcare systems through strengthening consumer co-production capacity☆

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ABSTRACT

Service scholars tacitly assume that healthcare consumers, professionals, and researchers possess the requisite capacities and resources for service co-production with healthcare organizations. However, conflicting epistemes may increase experiences of vulnerability during co-production. Our paper aims to explore how healthcare organizations can enable and sustain meaningful consumer involvement in healthcare co-production to deliver transformative outcomes. Our participatory research with young people with type 1 diabetes and family members identified key practices (i.e., constructing, connecting, and co-learning) that support meaningful involvement of consumers in healthcare co-production. We introduce strengthening consumer co-production capacity as a means of mitigating risk of vulnerability and advancing epistemic justice in co-production. We demonstrate that healthcare organizations can and should prioritize continuous strengthening of consumers' co-production capacity, acknowledge and respect differentiated expertise and perspectives, and foster mutual respect to maximize and sustain co-production partnerships.

1. Introduction

Increasingly, there has been a shift toward the co-production of service offerings between healthcare organizations and consumers to pursue transformative service research (TSR) goals (c.f., Carlini et al., 2025; Spanjol et al., 2015). Co-production improves service processes and outcomes (Ostrom et al., 2021) and is central to "creating uplifting changes and improvements in the well-being of individuals, communities, and the ecosystem" (Anderson et al., 2011, p. 3), as well as advancing the United Nations 17 Sustainable Development Goals (c.f., Fisk et al., 2024). While many consumers are willing to engage in co-production to effect change in matters concerning them (Carlini et al., 2025), there is a tacit assumption that *all* consumers are equally positioned within service systems to fulfill the co-producer role.

Delivering TSR outcomes, including improved well-being, through co-production in healthcare systems is not without challenges. Healthcare consumers often encounter barriers to co-production (Ryan et al., 2024) because few healthcare organizations prioritize strengthening consumer co-production capacity, for example, through co-production literacy and patient-centered information, before co-production begins (Eisingerich & Bell, 2008). Without this prioritization, co-production risks becoming tokenistic (Williams et al., 2020) and ultimately perpetuating epistemic injustice (Fricker, 2007), namely, favoring professional knowledge over healthcare service users' or consumers' lived experiences. Furthermore, ill-informed co-production efforts can produce or exacerbate harm for consumers, thus increasing their vulnerability (Mackenzie et al., 2013).

To address such challenges and to optimize co-production partnerships in healthcare service systems, this study aims to explore how healthcare organizations can enable and sustain meaningful consumer involvement in healthcare co-production. This participatory arts-based qualitative study (Ozanne & Saatcioglu, 2008) adopted a strengths-based approach (Raciti et al., 2022), guided by the Lundy Model of Child Participation (Lundy, 2007), to facilitate the purposeful involvement of children and young people in decision-making processes. Our study aimed to establish, facilitate, and train lived experience panels for

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a national pediatric diabetes clinic serving over 300 individuals living with a long-term health condition, prior to co-producing future priorities and healthcare consumer-led processes. Ten young people with type 1 diabetes (T1DM) and 10 family members volunteered to join a lived experience panel designed to strengthen their ability to engage in long-term co-production efforts. Each prospective partner attended three two-hour-long participatory workshops. The findings revealed three key practices for strengthening consumer co-production capacity: connecting, constructing, and co-learning. These practices mitigate the risk of healthcare consumer vulnerability in co-production by advancing epistemic justice (i.e., countering denied credibility and the exclusion of lived expertise).

Our study makes three contributions to strengths-based approaches within marketing and consumer vulnerability theory. First, we advance strengths-based perspectives of vulnerability by reframing consumer vulnerability in healthcare co-production as resulting from and often exacerbated by consumers' unequal positions and power relations in co-production partnerships. This then enables service organizations to examine how to recalibrate and respectfully share power to improve co-production outcomes for all. Second, we introduce the concept of strengthening consumer co-production capacity. We characterize this concept as a strengths-based partnership approach in which service systems acknowledge and address extant power imbalances in co-production to foster mutually beneficial and equitable co-production partnerships. We further delineate key practices for strengthening consumer co-production capacity that actively address power imbalances between healthcare consumers and organizations within co-production partnerships (MacInnis, 2011). Addressing power imbalances within co-production partnerships is important, as mitigating the risk of consumer vulnerability in co-production requires recognizing, valuing, and rewarding experiential knowledge. Third, we demonstrate that facilitating and embedding strengthening consumer co-production capacity advances epistemic justice, builds trust, and supports meaningful and sustained consumer involvement in co-production practices and partnerships. This, in turn, limits tokenism and epistemic injustice in co-production practices and partnerships.

2. Service co-production

Emanating from the field of economics, co-production originally referred to the "process through which inputs from individuals who are not in the same organization are transformed into goods and services" (Ostrom, 1996, p. 1073). This definition challenged the traditional views of consumers as sole and passive recipients of services. Early conceptualizations of co-production in the service domain emphasized consumers' direct participation in service delivery within parameters largely dictated by the organization (Auh et al., 2007). In turn, service-dominant logic positioned co-production as a subprocess within the co-creation of value (Lusch & Vargo, 2006). Service logic, by contrast, characterized co-production as consumers' participation in the organization's production-related activities (e.g., design, development, and delivery), enabling the co-creation of value (Grönroos & Voima, 2012). Service scholars have since advanced understandings of co-production as partnership based (c.f., Carlini et al., 2025), involving shared decision making and knowledge exchange.

2.1. Co-production in healthcare service systems

Co-production in healthcare, the specific focus of this study, refers to the direct involvement of healthcare consumers (i.e., patients) as key actors and co-creators of value at the center of service design and delivery (McColl-Kennedy et al., 2017). Therefore, co-production in healthcare "focuses [on] the establishment of a co-creating partnership between the provider and the user" (Palumbo, 2016, p. 75). Likewise, Williams et al. (2020) characterized healthcare co-production as an egalitarian practice that requires healthcare organizations to relinquish power inherited from historically and structurally dominant epistemes.

In line with service research, healthcare scholarship highlights the substantial benefits and challenges of healthcare co-production. On the one hand, co-production is associated with enhanced care experiences, health outcomes, and subjective health status (Palumbo, 2016). Positive interpersonal interactions with healthcare organizations often elicit open communication and build trust (McColl-Kennedy et al., 2017), encouraging consumers to actively share timely information regarding their health, provide suggestions, and engage in shared care decision making (Auh et al., 2007). Healthcare organizations, too, benefit from co-production through enhanced service innovation and effectiveness, cost savings, and higher consumer satisfaction.

On the other hand, co-production in healthcare is not without its challenges. For example, Azzari et al. (2021) noted that co-production frequently imposes burdensome demands on consumers that resemble job-like efforts (e.g., performing complex tasks, allocating time and resources at a personal cost, and managing intricate relationships). Likewise, Carlini et al. (2025) revealed that systemic barriers, limited co-production skills, and resource constraints create barriers to meaningful co-production and leave consumers susceptible to harm. Related research highlights that conflicting priorities and information asymmetries often render co-production passive, extractive, and alienating (Palumbo, 2016). In such instances, experiences of vulnerability stem from distinct hierarchies between professional and experiential knowledge (Williams et al., 2020). As a result, consumers' experiential knowledge of their illness is often unrecognized, unsolicited, silenced, or marginalized. Thus, a significant gap remains in how consumers can "learn the appropriate role behaviors and develop the necessary skills to become properly socialized to their role as service co-producers to ultimately enhance their well-being" (Guo et al., 2013, p. 560).

2.1.1. Consumer vulnerability in healthcare co-production

Consumer vulnerability, including in healthcare co-production, has been traditionally understood through an individual deficit lens (c.f., Russell-Bennett et al., 2023). That is, vulnerability is characterized as an individual state (e.g., health status), characteristic (e.g., age), or a result of external circumstances (e.g., socioeconomic status) (c.f., Baker et al., 2005; Hill & Sharma, 2020; Mende et al., 2024). In this way, vulnerability is associated with enduring and non-situational personal and ill-health attributes (Mackenzie et al., 2013). As a result, many healthcare consumers living with chronic conditions and accessing curative, recuperative, illness management, or preventative healthcare services are labeled "vulnerable," with the accompanying characterization of being passive, powerless, lacking control, and dependent within healthcare service encounters and systems (McColl-Kennedy et al., 2017).

By contrast, the alternative strengths-based lens defines consumer vulnerability as "subjective perceptions of susceptibility, which are part of the human condition that may come to pass with the passage of time, prompt introspection and give rise to greater strength and resilience" (Raciti et al., 2022, p. 1151). This view recognizes that all consumers experience vulnerability to differing degrees across the various stages of the life course (Hill & Sharma, 2020; Russell-Bennett et al., 2023). A strengths-based approach to co-production partnerships, therefore, deems consumers as "capable, effortful, willing and enabled, to engage the resources from a network of actors within the service provider ecosystem and beyond (including other service providers, other customers, peers, family and friends) to create value" (Johns & Davey, 2021, p. 685). However, there is a tacit assumption that all consumers can identify, assemble, and access the resources they need seamlessly and without difficulty, an assumption we explore in the following section.

2.2. Strengthening consumer co-production capacities

Common to co-production understandings across healthcare and

Table 1
Comparative overview of strengthening consumer co-production capacity and related constructs.

Construct	Aggregated Definition	Distinctive Focus	Illustrative Example
Strengthening Consumer Co-production Capacity	A strengths-based partnership approach in which service systems acknowledge and address extant power imbalances and relations in co-production to facilitate and foster mutually beneficial and equitable co-production partnerships	Partnership-oriented, dialogic, relational development, power-sharing, enabling environments	Co-producing care pathways
Consumer Education	The guidance of consumers toward appropriate behaviors and methods for fulfilling service roles (Burton, 2002)	Consumer compliance, instructional guidance, information dissemination, passive learning	Nurse-led orientation sessions for healthcare consumers
Community Capacity Building	The development of new or enhanced capabilities to improve internal systems, leadership, and workforce capabilities to meet institutional objectives and performance (Bergeron et al., 2017)	Organizational development, system performance, and sustainability	Service quality improvement efforts
Community Participation and Engagement	The participation of consumers in locally embedded activities that promote physical, social, and civic well-being (Gough et al., 2023)	Informal, place-based engagement, incidental interaction, local connectivity	Adapting public spaces for safe interaction during COVID-19
Co-constructed Learning	A pedagogical approach where students and educators actively shape the learning environment (Vespone, 2023)	Shared authorship of content and learning goals, dialogic teaching	Student-faculty design of module curriculum
Health Literacy	The ability to access, understand, and use health information for appropriate decision-making in care (Virlée et al., 2020)	Cognitive processing, interpretation of health content, critical appraisal, foundation for patient enablement	Navigating care systems
Patient Enablement	The acquisition of foundational knowledge and skills required to engage in care decisions and interactions (Hickmann et al., 2022)	Care skills acquisition, informational access, support-seeking, precursor to patient empowerment	Attending health education programs
Patient Empowerment	A process and state through which healthcare consumers enhance their knowledge, skills, attitudes, self-awareness, and confidence to actively control their personal health care (Van De Bovenkamp & Trappenburg, 2009)	Proliferation of individual agency and self-determination through informed, autonomous participation in care, informed choice, goal setting	Asserting preferences in care
Patient Activation	The extent to which healthcare consumers have the confidence, knowledge, and skills to manage specific aspects of their health (Hickmann et al., 2022)	Care-specific engagement, readiness to act, motivation, self-care	Understanding care treatment rationale
Patient Engagement	The ability and willingness of healthcare consumers to actively participate in their care in collaboration with healthcare providers (Higgins et al., 2017)	Sustained therapeutic alliance, personalization of care strategies, shared healthcare goals, consumer commitment	Participation in defining personalized treatment plan
Public and Patient Involvement (PPI)	The involvement of healthcare consumers and members of the public across stages of the research process (Gilfoyle et al., 2022)	Research-oriented, inclusive of consumer expertise, partnership in research design, conduct, and dissemination	Co-designing research priorities

service research is the assumption that consumers have equal access to, knowledge of, skills for, and capacities for co-production (Johns & Davey, 2021). Yet, personal and ill-health attributes, as well as situational, intersectional, and systemic barriers, lead to disparities in who is involved in co-production, how, and to what extent. Mende et al. (2024) argued that service organizations should support consumers in building resilience and agency for co-production. This perspective aligns with a range of related approaches across research, including public and patient involvement (PPI), which acknowledges lived expertise as central to healthcare co-production (Gilfoyle et al., 2022). Table 1 provides a comparative overview of related constructs.

How service organizations can proactively support consumers' meaningful involvement in healthcare co-production to counter epistemic injustice has received little attention in service research to date. That is, merely acknowledging consumers' experiential knowledge is not enough. Ensuring epistemic justice (Fricker, 2007) for co-production necessitates that service organizations and other partners acknowledge and address the structural constraints, emotional burdens, and power asymmetries that persist in healthcare co-production, even in contexts in which lived experience is nominally recognized (Williams et al., 2020). Without this, epistemic injustice endures and acts as a barrier to co-production. We next outline our study of a healthcare organization working to proactively mitigate consumer vulnerability risk by strengthening consumer co-production capacity.

3. Method

3.1. Background research context

T1DM is a chronic condition typically arising in childhood that requires lifelong insulin therapy and ongoing disease management. Service scholars have argued that young people should be viewed as active agents and key informants in matters affecting their healthcare consumption (e.g., Chitakunye, 2012). However, conceptualizing young people as active agents in healthcare co-production is often an exception rather than the norm. Young people often experience vulnerability in healthcare co-production due to ableist assumptions that equate youth with diminished reliability and incapacity (Brady et al., 2023). Such assumptions make it difficult for young people to be meaningfully involved in co-production in ways that reflect their lived experiences and evolving sense of self. A recent systematic review (Leocadio et al., 2023) recommended embedding the experiences of young people with T1DM and family members in developing effective co-production interventions with healthcare organizations. In response, we adopt the use of lived experience panels, a common and pragmatic approach for co-production in healthcare (Brady et al., 2023).

3.2. Research positionality and approach

The transdisciplinary research team comprised four scholars, including a medical consultant practitioner, a social scientist, and two healthcare service scholars and researchers. This collaboration supported transdisciplinary discussions and reflexivity. Through the research, we engaged in regular reflexive debriefing sessions to examine positionality, assumptions, and power disparities and to ensure that panel members' input guided the research. Commencing from a strengths-based perspective (Raciti et al., 2022; Russell-Bennett et al., 2023), we acknowledge lived experience as an endogenous part of co-production.

3.3. Risk management and mitigation

We applied for and secured ethical approval in accordance with the Clinical Research Ethics Committee (CREC) of the university hospital

where the study was conducted. Key ethical considerations included informed consent and assent, voluntary participation, age-appropriate facilitation, and vetting of the research team. Ethical risks were mitigated through debriefing discussions designed to minimize potential distress, protect confidentiality, and support participant well-being. In addition, and as required by CREC, particular attention was paid to mitigating the risks associated with co-production (c.f., Williams et al., 2020), including tokenistic involvement. The research team prioritized respect among partners, distributing opportunities equitably, upholding dignity, and retaining identity (Fisk et al., 2018) to reflect our commitment to power sharing and avoid exclusionary depictions of lived expertise (Mackenzie et al., 2013). That said, we aimed to ensure that all members were given inclusive opportunities for their voices to be expressed, heard, and taken seriously (Lundy, 2007).

3.4. Sampling

Our empirical study focuses on a national pediatric diabetes clinic in a European country. The objective was to establish, facilitate, and train lived experience panels consisting of young people and family members. The clinic is led by a senior medical consultant pediatric endocrinologist and co-author of this study, whose long-term vision is to have the panels recognized, supported, and sustained as a means of embedding co-production as a core clinical practice. Previous research has highlighted the relevance of lived experience panels in improving clinical care quality, consumer safety, and satisfaction, as well as their role in significantly informing medical and research agendas and providing opportunities for personal learning and development (Brady et al., 2023). Involving young people in lived experience panels (YPLEP) requires distinct considerations compared to involving family members, who are adults, in family members' lived experience panels (FMLEP). As such, separate panels were established to prevent adults from overshadowing younger members.

Purposive sampling was used to recruit 10 young people aged 9–16 years with T1DM and 10 family members. Recruitment was conducted through multimedia and poster campaigns with the support of the clinical team, consistent with purposive qualitative sampling techniques. Table 2 presents YPLEP and FMLEP member details and workshop attendance. The criteria for YPLEP included (a) having T1DM, (b) being under 18 years, (c) residing in the Republic of Ireland, and (d) attending in-person workshops. The criteria for FMLEP included (a) being a caregiver of a young person under 18 years with T1DM, (b) residing in the Republic of Ireland, and (c) attending in-person workshops.

3.5. Data collection

We conducted six 90-minute arts-based participatory workshops from November 2023 to March 2024. Table 3 outlines the objectives and outcomes of the workshops. The first author facilitated the workshops, with safeguarding support from another researcher and a healthcare professional. The workshops were underpinned by the Lundy model of child participation (Lundy, 2007), which operationalizes Article 12 of the United Nations Convention on the Rights of the Child and emphasizes young people's right to express their views. During the workshops, members were invited to reflect on and share moments in healthcare and research encounters in which they felt included, dismissed, or marginalized. The workshops principally employed arts-based techniques (e.g., paper craft, doodling, and drawings), supplemented by written outputs (refer to Appendix A for a sample of the drawings). These reflections surfaced experiences of vulnerability and created a foundation for identifying practices for strengthening consumer co-production capacity.

Table 2
Young people and family member lived experience panel list.

Member	Age and Gender	Workshop (WS) Attendance			Individual Requirements
		WS 1	WS 2	WS 3	
Young People Lived Experience Panel (YPLEP)					
JIMMY	9 years old, Male		✔	✔	Travel expenses
JOSH	12 years old, Male	✔	✔	✔	Autistic spectrum disorder, dyslexia, and anxiety
EDEN	12 years old, Female	✔	✔		N/A
ELLA	12 years old, Female		✔	✔	Travel expenses
LIA	13 years old, Female	✔		✔	N/A
ANNA	14 years old, Female	✔	✔	✔	Travel expenses
FRANK	14 years old, Male	✔	✔	✔	N/A
NINA	15 years old, Female		✔	✔	N/A
DAN	16 years old, Male	✔	✔	✔	Travel expenses
PATRICK	16 years old, Male	✔			Travel expenses
Family Member Lived Experience Panel (FMLEP)					
LEE	Male	✔	✔	✔	7-year-old with T1DM. Travel expenses
KATIE	Female	✔	✔	✔	9-year-old and 12-year-old with T1DM. Husband with T1DM. Travel expenses
ALLISON	Female	✔	✔	✔	10-year-old twins with T1DM. Travel expenses
MARY	Female	✔	✔		11-year-old with T1DM. Travel expenses
EVA	Female	✔	✔	✔	12-year-old with T1DM
RYAN	Male	✔	✔		12-year-old with T1DM
JULIA	Female	✔	✔	✔	15-year-old with T1DM
JOEL	Male	✔	✔		16-year-old with T1DM. Travel expenses
BRIGID	Female	✔			16-year-old with T1DM. Travel expenses
DAVE	Male	✔			16-year-old with T1DM. Travel expenses

Note: Pseudonyms are used throughout.

3.6. Data analysis

Our research approach involved iterative cycles of planning, action, observation, and reflection. This enabled collaborative workshop agenda setting and continuous feedback. We employed reflexive thematic analysis, as described by Braun and Clarke (2021). Although the workshops were not audio-recorded to support open engagement between members, discussions were extensively documented through field notes, and all visual and textual materials were preserved to ensure a robust data record. A total of 159 discrete items were analyzed (i.e., 38 feedback forms, 61 Post-it notes and written workshop outputs, 17 researcher reflection notes, 15 flipchart outputs from group discussions, 20 creative outputs combining writing, stickers, and illustrations, 6

drawings/doodles, and 2 paper craft artifacts). All items were photographed and imported into NVivo for preliminary data coding with nodes and categorical attributes.

We conducted multiple iterations of open coding of visual and textual materials, both individually and as a team, grouping related codes to deepen data familiarization. Initial themes were identified, reviewed, and cross-referenced. To support theme development, the research team held debriefing sessions to reconcile interpretations, challenge assumptions, and ensure the trustworthiness and analytical depth of the findings. Table 4 highlights the analytic progression from first-order concepts to aggregate dimensions of visual and textual materials. Field notes, as well as the YPLEP and FMLEP member feedback, indicated a noticeable increase in confidence, awareness of co-production roles, and willingness to engage across the three workshops, which are early indicators of strengthening consumer co-production capacity (see Table 3).

Reflexivity was enacted through regular post-workshop debriefings among the research team and iterative reviews of field notes and reflections. This allowed the team to reflect on and document their own positionality in relation to the evolving research project, discuss challenges and possible solutions, and ensure that members' perspectives and contributions guided data interpretation. Formal post-analysis member checking was avoided to minimize the risk of reinforcing power imbalances, exposing members to emotional distress, and adding further burden (Lloyd et al., 2024). In addition, prolonged engagement with members over multiple workshop sessions allowed for ongoing opportunities for informal check-ins and discussions.

4. Findings

Our findings reveal how healthcare organizations can enable and sustain meaningful co-production by strengthening consumer co-production capacity in co-production partnerships. We introduce and characterize strengthening consumer co-production capacity as a strengths-based approach in which service systems acknowledge and address extant power imbalances and relations to foster mutually beneficial and equitable co-production partnerships. We delineate three practices of strengthening consumer co-production capacity—connecting, constructing, and co-learning—that recognize, leverage, and reward consumer experiential knowledge as a means of reducing consumer vulnerability during co-production. These practices are summarized in Table 4 and discussed in further detail in the next section.

4.1. Constructing

Constructing is the first practice of strengthening consumer co-production capacity. Constructing refers to supporting consumers in defining their own value, perspective, and roles in co-production partnerships. In doing so, consumer involvement shifts from passive to active agency. The research team placed significant emphasis on ensuring that members were well informed regarding workshop objectives, expectations, and outcomes. Information sheets, age-appropriate consent, and assent forms were provided in advance to support informed choice regarding involvement. Members reviewed the nature of their involvement to manage expectations and to understand any potential implications that may arise. All written communication was in plain English for clarity and ease of understanding. Outlining workshop agendas at the start of each session remained essential, even when advance information had been provided, to ensure that members felt oriented and prepared.

Appropriate organizational support was provided to meet specific requirements that might affect members' ability to contribute. Travel reimbursement and accommodations for accompanying carers addressed barriers to co-production and facilitated experiential knowledge exchange. Ensuring that accompanying carers remained nearby aimed at reducing the stress experienced by young members living with a chronic condition. Members appreciated the distribution of such organizational resources and reflected on the relevance of providing ethical and purposeful support as a means of strengthening consumer co-production capacity: "I am grateful for all the information I have received" (Julia, FMLEP). End-of-workshop evaluations recommended that "… more workshops with the relevant bodies present" (Lee, FMLEP) be conducted. Similarly, one member said, "… I want to keep telling other people about [T1DM] and get more people my age involved" (Ella, YPLEP), reflecting the sustainability of partnership efforts.

Appropriate organizational support also ensured that the physical strain of the journey to attend in-person workshops and potential financial burdens were diminished. Financial compensation reimburses members for out-of-pocket expenses and recognizes their time, effort, and expertise. When asked, "What do you need to continue strengthening your voice and involvement?," members repeatedly mentioned financial compensation. Although not all members sought reimbursement, final compensation reflected their commitment. Co-production often requires consumers to take time off school, work, or other personal responsibilities, as indicated in one of the evaluation forms: "… I'm missing training" (Dan, YPLEP).

The role of the knowledge broker emerged as critical within

Table 3
Summary of workshop objectives and outcomes.

Workshop (WS) Title	Objectives	Outcomes	Observed Strengthening Co-production Capacity
WS 1 'Teamwork and Making Your Voice Heard'	Build an agreement on conditions necessary to work together Promote knowledge exchange Ensure a safe, inclusive space and validate individual experiences	Agreed-upon ground rules for partnership working Increased understanding and appreciation for the co-producer role and the benefits involved Theoretical understanding of co-production	*"It is lovely to hear that medical staff want to hear our voice and act on the information"* (Eva, FMLEP)
WS 2 'Research Basics and Involvement'	Introduction to research concepts Address extant power imbalances and highlight experiences of vulnerability in co-production Build a role profile Practice co-production	Improved research literacy and co-production knowledge Articulated individual perspectives for active collaboration Co-produced priorities on oral disease for young people with T1DM Co-produced educational videos for T1DM management awareness	*"When I'm listened to, I feel happy, helpful, involved, like I'm part of a team, respected, mature…"* (Lia, YPLEP).
WS 3 'Making a Difference'	Establish a basis for sustained co-production partnership Support personal development Highlight co-producer impact on research and medical practice	Strengthened relationships and mutual understanding among co-producers Increased confidence and improved collaboration and communication skills Acknowledgement of (new) capacities and knowledge gained	*"…they want to help me, they want me to help them"* (Jimmy, YPLEP).

Table 4
Key strengthening consumer co-production capacity practices.

First-order Concepts	Second-order Themes	Aggregate Dimensions	Key Elements	Implementation
"Welcoming, safe environment… secure amongst people with a common goal…"- Katie (FMLEP) *"… I feel safe… I feel I can talk to them again"*- Eden (YPLEP)	Establishing a safe, inclusive space that fosters openness, trust, and collaboration	Constructing	Informing members of workshop goals and expectations Providing appropriate support Engaging a knowledge broker	Transparent communication Logistical assistance Financial compensation Safeguarding against epistemic injustice
"… apart from my husband, I don't really have anyone …" – Allison (FMLEP) *"We have the right not to answer"* – Frank (YPLEP)	Aligning and developing the shared responsibilities within the co-producer role and defining communal values for equal dialogue and mutual respect	Connecting	Adopting a common purpose and defining principles for partnership working Validation of experiential knowledge Developing research literacy Addressing potential conflicts and biases	Open discussions and reflections on expectations and goals Emphasis on empathy and mutual understanding
"I learned a lot today… we made a difference" – Lee (FMLEP) *"I learned about listening… and being inclusive"* – Dan (YPLEP)	Sharing and creating knowledge through applied learning	Co-learning	Engagement in neutral spaces that promote equal contribution and dialogue Opportunities for practical application	Scenario-based activities, reflective discussions

constructing. In this study, we characterized the co-production knowledge broker as a designated organizational actor responsible for liaising with co-producers to facilitate communication and foster mutual understanding between consumers and the organization. In this study, the lead author, a trained PPI facilitator, performed this role. Specifically, the lead author acted as a liaison between members and the organization, helping to clarify expectations and language and ensuring that their perspectives were understood and acted upon. The knowledge broker helped build trust, reduce perceived power imbalances, and promoted mutual understanding, which are key conditions for purposeful co-production and the mitigation of consumer vulnerability. Members highlighted the importance of the knowledge broker, with one describing them as someone "I connected with … who was very warm and knowledgeable about the focus of the research …" (Katie, FMLEP). Furthermore, the knowledge broker was viewed as "… a middle person between us and the team to represent us and understand their perspectives, too" (Allison, FMLEP). This role addressed challenges associated with co-production, such as unfamiliarity with co-production, uncertainty about the value of experiential knowledge, and limited individual confidence, as reflected in one member's remark: "It is lovely to hear that medical staff want to hear our voice and act on the information" (Eva, FMLEP).

Constructing a responsive and adaptive environment allowed members to overcome the conventional boundaries of knowledge sharing and explore the personal, emotional, and social dimensions often overlooked in clinical discussions. FMLEP members reflected on the emotional impact of knowledge sharing, noting challenges of "emotionally recalling" (Joel, FMLEP), while another shared the positive outcomes of the reflections and discussions, saying, "I feel all of us went home this evening after learning useful information" (Julia, FMLEP). Despite the challenges, members identified several highlights of their workshop involvement. These included appreciating "the honest and engaging conversations" (Ryan, FMLEP), the opportunity to "know new people and see that other people are living with T1DM, too" (Frank, YPLEP), and "being around other people with T1DM …, being able to have an opinion and being understood" (Nina, YPLEP). These reflections illustrate how members were empowered to share their personal experiences without fear of judgment within an enabling environment, reinforcing the value of their contributions and the collaborative nature of co-production. Transparent communication regarding workshop objectives and expectations, availability and distribution of organizational support, and knowledge broker involvement actively mitigated consumer vulnerability in co-production.

4.2. Connecting

The second practice for strengthening consumer co-production capacity is connecting. Connecting mitigates consumer vulnerability by acknowledging, inviting, and validating experiential knowledge, as well as by addressing potential conflicts and biases in co-production partnerships. Connecting begins with a clear delineation of the co-producer role and responsibilities and establishes a common purpose that aligns consumers' objectives with those of the co-production effort. This was facilitated through the exchange of communal values and objectives to ensure that consumers received essential information for co-production partnership work. A common purpose served as a means for consumers to develop a shared sense of belonging and responsibility within the co-production partnership.

As part of the workshops, members were asked to reflect on principles that outlined their individual expectations for partnership work. The YPLEP guiding principles for partnership work included "try not to talk so loud," "listen to one another, let your voice be heard," "give any idea, there are no wrong answers," and "give everyone an opportunity to share." The FMLEP highlighted the guiding principles of "give time to explain and do not be afraid to sound silly," "do not be afraid to be brutally honest," "be open-minded to new ideas," and "give your all." Clearly establishing the co-producer role involved initially agreeing upon principles of partnership that outlined each member's expectations and conditions for working together. The aim of this structural clarity was to promote a greater sense of agency, ownership, and confidence among members by building an agreement on the ideal partnership relationship. These principles were discussed and agreed upon at the beginning of each workshop to foster accountability and reinforce the enabling environment for co-production. One member reflected on the practice of connecting as developing "empathy and understanding for others" (Allison, FMLEP). This sense of equality among co-producers was further reflected in one member's remark: "I think everyone should sit at the same table" (Eden, YPLEP). Thus, exchanging values and objectives better equipped members to contribute effectively and further strengthen their co-production capacity.

Both YPLEP and FMLEP members initially reported being unaware of the significance of their lived experiences as a valuable source of information for healthcare organizations. However, as their experiential knowledge was gradually recognized and validated through the workshops, members reported being valued, capable of making purposeful contributions, and more confident in their co-producer role. The following quote highlights members describing the importance of validation: "When I'm listened to, I feel happy, helpful, involved, like I'm part of a team, respected, mature …" (Lia, YPLEP). However, the

contrast between this reflection and a different experience is evident in another member's reflection: "… I lie, I am not okay" (Josh, YPLEP). This reflection highlights the significance of connecting, as failing to validate experiential knowledge can diminish empowerment. Validation of experiential knowledge guided reflection on members' individual skills and their possible application across various stages of co-production and the research cycle. Another member reflected on how these discussions made them feel "… normal" (Allison, FMLEP) and less isolated in everyday struggles. Highlighting the relevance of their existing experiential knowledge dismantled hierarchical structures and promoted a sense of equality and inclusivity. Being directly asked about their lived experiences boosted members' confidence, as reflected in one member's remark: "… people let you talk" (Josh, YPLEP).

Members also became increasingly familiar with the basic concepts of co-production and the research cycle. The potential pitfalls and challenges faced by healthcare professionals and researchers were likewise discussed. Comprehending these challenges upfront allowed members to better navigate co-production expectations given the divergent theoretical and practical realities. Empathy and mutual understanding are critical aspects of partnerships involving healthcare professionals, particularly given members' existing clinical relationships with them. Clinical relationships often gave rise to guarded dialogue, particularly during the emotional recall of health-related experiences. A FMLEP member shared, "I felt that I connected with other exasperated and frustrated and decent parents trying their best" (Allison, FMLEP), highlighting the shared burden many carry over into the co-producer role. Discussing potential conflicts was an essential element within the practice of connecting. Members often reflected on feeling talked at rather than to during clinical consultations, which gave rise to skepticism toward the intentions and motivations behind co-production. Such skepticism, alongside interpersonal dynamics, organizational constraints, role confusion, and scheduling conflicts, emerged as key barriers to the study's effort to strengthen consumer co-production capacity. These conflicts were often exacerbated by inherent power dynamics and the frequent use of medical jargon. One YPLEP member described working with healthcare professionals as "I like to talk to them, but it's kind of awkward" (Frank, YPLEP). Another member reflected that working with healthcare professionals and researchers could be "fun, but it depends on what they are doing and telling us about" (Dan, YPLEP). This highlights how the use of medical and research jargon risked alienating members and, as one member noted, could "… make it more complicated" (Josh, YPLEP), diminishing the collaborative potential of co-production partnerships. Deliberately, the research team avoided such jargon across all workshop materials and interactions, including slideshows, discussions, exercises, information sheets, consent forms, and recruitment posters. In doing so, the practice of connecting was made accessible and inclusive by reducing the gaps among co-producers. As members returned for subsequent workshops, "respect on both sides" (Lia, YPLEP), "kindness" (Jack, YPLEP), "ear friendly" (Jimmy, YPLEP), and "to be talked to, not at" (Dan, YPLEP) were identified as key factors in YPLEP members' willingness to engage consistently throughout the workshops. Overall, connecting ensured that knowledge exchange in co-production was not dominated by the research team and mitigated vulnerability by validating multiple ways of knowing.

4.3. Co-learning

The third consumer practice for strengthening consumer co-production capacity is co-learning. Co-learning enables the mutual recognition of expertise by transforming the conventional one-way transfer of knowledge into reciprocal exchange. During the workshops, members emphasized the importance of engaging with healthcare professionals and researchers outside hospital settings to allow for equal contributions and mutual respect. Non-clinical environments were viewed as pivotal by members for building rapport, as highlighted in the following: "… meets the diabetes team outside of hospital settings to ensure that voices are heard" (Allison, FMLEP). One YPLEP member captured the value of equal contributions and mutual respect through the simple but telling reflection, "… I am part of a team" (Lia, YPLEP). This demonstrated that knowledge exchange within the co-production partnership was genuinely reciprocal as it allowed members to understand that healthcare professionals and researchers engaging in healthcare co-production "… want to be there for me because they want to help me, they want me to help them" (Jimmy, YPLEP). Co-learning enabled members to gain confidence in their roles by knowing that their contributions were equally valued and viewed as credible sources.

Co-learning was also demonstrated through applied learning opportunities involving scenario-based activities that facilitated knowledge exchange among healthcare professionals, researchers, YPLEP, and FMLEP members. Scenario-based activities involved ideation techniques for two distinct purposes: co-producing educational resources for T1DM awareness alongside a pediatric clinical team, and working with researchers to co-produce patient priorities for infographics addressing oral disease prevention for young people living with T1DM. The hands-on experience provided members with a tangible understanding of what co-production entails. During reflective discussions, members described the opportunity to learn and contribute as feeling like "a voice at the table hoping to make a positive impact …" (Eva, FMLEP). Engaging with co-producers in spaces that promote equal contribution and dialogue, as well as incorporating applied learning for strengthening consumer co-production capacity, facilitated a collective assessment of co-production, including the underlying reasons for current practices, potential solutions, and what can realistically be achieved. Even a modest sense of individual or communal impact proved significant in fostering knowledge sharing and creation, as well as mitigating vulnerability, as reflected in one member's remark: "I feel I made a little impact with my voice" (Katie, FMLEP).

5. Discussion

While prior research has called for greater consumer inclusion (Fisk et al., 2018) and a deeper understanding of consumer–service collaborations (Azzari et al., 2021), guidance on how to purposefully co-produce and mitigate vulnerability in co-production partnerships has remained largely absent. Our study seeks to address this gap by exploring how healthcare organizations can enable and sustain meaningful consumer involvement in healthcare co-production to deliver transformative outcomes for consumers and service systems alike. Overall, we make three contributions to consumer vulnerability and co-production research. First, we reframe consumer vulnerability in healthcare co-production as resulting from consumers' positioning within unequal co-production partnerships that constrain agency, compromise safety, and limit preparedness. Second, we delineate key practices that actively address power imbalances and relations between healthcare consumers and organizations for co-production partnerships (Fig. 1). Third, we demonstrate that facilitating and embedding these practices deliver epistemic justice and mitigate the risk of consumer vulnerability in co-production. We outline each contribution in detail below.

First, this study conceptualizes consumer vulnerability in healthcare co-production as emerging from imbalances in co-production partnerships that restrict individuals' agency, undermine their sense of safety, and limit their ability to adequately prepare and participate. While prior research has emphasized the role of consumers in improving service offerings (Anderson et al., 2011), service scholars and funding bodies have increasingly pursued impactful co-production and service inclusion (Fisk et al., 2018). Nevertheless, healthcare co-production remains characterized by power imbalances (e.g., patient–clinician dynamics) that place consumers within unequal partnerships and exacerbate experiences of vulnerability (c.f., Palumbo, 2016). While recent service research highlights the increasing relevance of consumer assets (Russell-

Bennett et al., 2023), our study challenges accounts of co-production assuming that vulnerability is solely situational and can be adequately mitigated through inclusion alone. Drawing on feminist perspectives of vulnerability (Mackenzie et al., 2013), our findings highlight that vulnerability in healthcare co-production is both situational (i.e., context specific) and relational (i.e., produced and shaped through interactions, power relations, and institutional arrangements). As such, power relations in co-production partnerships must be actively identified and addressed. In this study, we extend consumer vulnerability theory (Baker et al., 2005) by shifting from a deficit view of vulnerability in co-production (e.g., lack of skills for co-production) to a relational-oriented understanding (e.g., restructuring of interactions, roles, and power relations). We call for a strengths-based view of healthcare co-production that acknowledges consumers' marginalized position within extant power hierarchies, as well as the structural dependencies that arise from it, to advance TSR goals of improving well-being at both individual and community levels (Anderson et al., 2011).

Second, we outline and delineate key practices (MacInnis, 2011) that actively address power imbalances and relations between healthcare consumers and organizations for co-production partnerships. Delineating these practices is important, as mitigating the risk of consumer vulnerability in co-production requires recognizing, valuing, and rewarding experiential knowledge. To address this, we introduce the concept of strengthening consumer co-production capacity, characterizing it as a strengths-based partnership approach in which service systems acknowledge and address extant power imbalances and relations to foster mutually beneficial and equitable co-production partnerships (please refer to Table 5 for an overview of practices and mechanisms for strengthening consumer co-production capacity to mitigate the risk of vulnerability and advance epistemic justice). Given that consumers are frequently conceptualized as "partial [co-production] employees" (Azzari et al., 2021, p. 522) but often lack adequate training to effectively fulfill their roles, practices for strengthening consumer co-production capacity are designed to support consumers in purposefully integrating their expertise. This extends Hill and Sharma's (2020) critique of existing norms in service systems that marginalize consumer contributions to co-production. In summary, practices for strengthening consumer co-production capacity (i.e., constructing, connecting, and co-learning) support "the cultivation and use of transferable knowledge, skills, systems, and resources that affect community- and individual-level changes consistent with (public) health-related goals and objectives" (Rogers et al., 1995, p. 259; refer to Fig. 1 for our proposed strengths-based partnership framework for healthcare co-production). We adopted this framework, as it aligns with the principles of authentic co-production (c.f., Knowles et al., 2021), including responsiveness and adaptability. Our approach represents how the three practices for strengthening consumer co-production capacity work in tandem and iteratively reinforce one another over time. For example, as a consumer's experiential knowledge is legitimized and valued (constructing), they may feel more willing to engage with others (connecting), which in turn supports deeper mutual learning among co-producers (co-learning). In other words, progress in any one practice strengthens and is strengthened by the other practices, giving rise to greater consumer confidence, agency, and clarity of purpose within co-production.

Third, we reveal that facilitating and embedding practices for strengthening consumer co-production capacity deliver epistemic justice and mitigate the risk of consumer vulnerability in co-production (refer to Fig. 1). Unfamiliarity with co-production or partnership work can make it challenging for consumers to articulate their experiential knowledge or ask relevant questions, leaving them susceptible to harm and vulnerability risks within co-production partnerships. Other

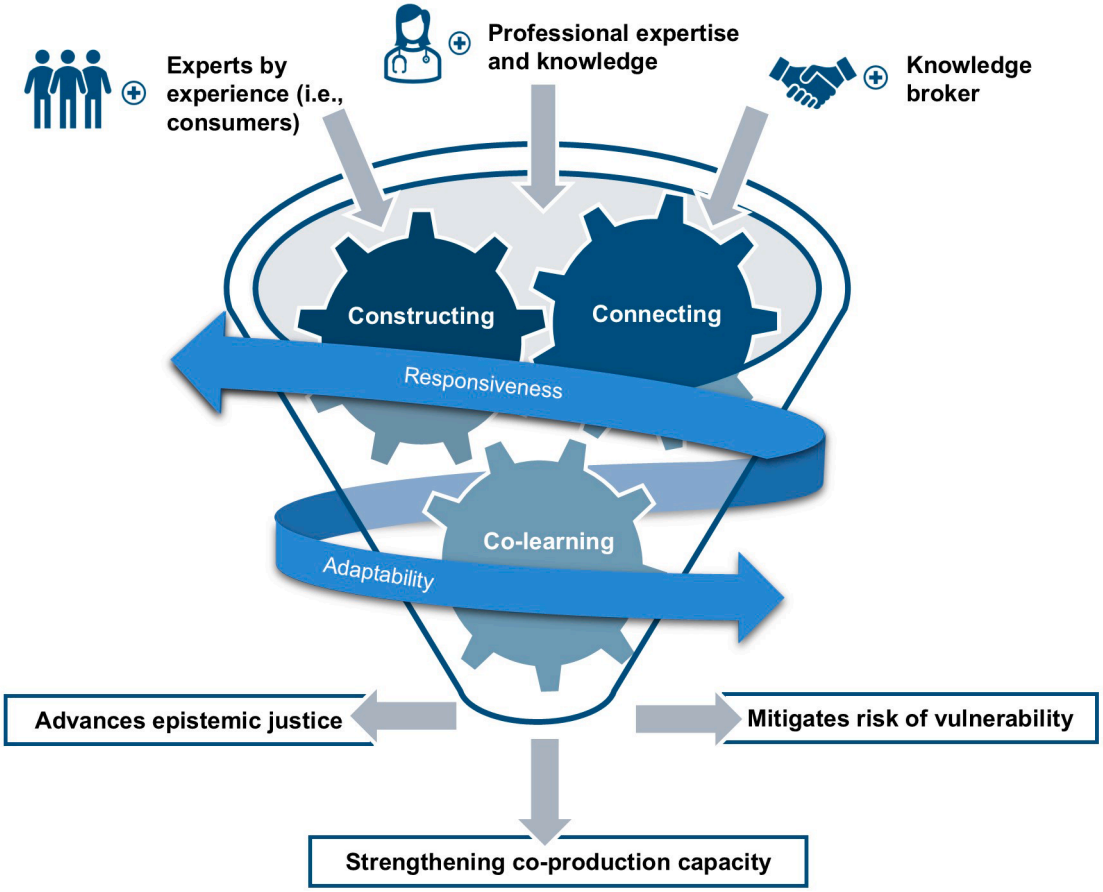

Fig. 1. A strengths-based partnership framework for healthcare co-production: strengthening consumer co-production capacity.

Table 5
Overview of practices and mechanisms for mitigating risk of vulnerability and/or advancing epistemic justice.

Strengthening Consumer Co-production Capacity Practices	Mechanisms	Value	Outcomes
Constructing	Legitimacy of experiential knowledge, psychological safety	Reduced dismissal of experiential knowledge (e.g., acknowledgement as an expert), increased perceived agency	Enables consumers to feel respected, recognized, and able to contribute without fear of being dismissed
Connecting	Shared purpose, reciprocity	Collective efficacy, shared responsibility	Reduce marginalization and isolation, and foster a sense of belonging and collaboration
Co-learning	Mutual learning and recognition/value of expertise, shared language	Reduced knowledge hierarchies, adaptive sense-making	Power asymmetries are softened and experiential knowledge is rewarded

potential consumer vulnerability risks that are inherent in co-production partnerships include healthcare organizations "professionalizing" consumers (Van De Bovenkamp & Zuiderent-Jerak, 2015), namely, training consumers to adopt institutional languages, processes, and priorities that align with organizational perspectives. Consequently, consumers become alienated from the very communities they purport to represent (Mackenzie et al., 2013). In line with Hutton and Cappellini (2022), our research reveals that epistemic justice can be advanced by service organizations by enabling the articulation of experiential knowledge in ways that affirm its value. In our study, YPLEP and FMLEP members gained familiarity with co-production and retained their experiential voice and lay perspective. This preserved the authenticity and situated value of their contributions. In line with service research priority #4—consumer proactivity for well-being (see Ostrom et al., 2021)—practices for strengthening consumer co-production capacity work to flatten extant hierarchies (Hutton & Cappellini, 2022) by recognizing, valuing, and rewarding consumers' inherent attributes, thereby mitigating consumer vulnerability and advancing epistemic justice. Knowledge brokers and service organizations must ensure that experiential knowledge is respected and valued regardless of the source, social status, or developmental stage of the consumer sharing it; this precludes the dismissal or questioning of experiential knowledge (Williams et al., 2020) and prevents suboptimal co-production outcomes (Vlahos et al., 2022). This further aligns with Johns and Davey (2019), who consider transformative service mediators integral to facilitating consumer empowerment and autonomy. The healthcare literature also positions knowledge brokers as facilitators of knowledge translation and relational understanding across organizational boundaries (Lomas, 2007). Thus, service organizations bear a responsibility to ensure that consumers are not harmed or negatively affected by their involvement in co-production.

6. Managerial, policy, and research implications

Many national and international organizations, charities, and funding bodies mandate co-production across services, research, and policy development (c.f., Gilfoyle et al., 2022 for a comprehensive review). However, there remains limited guidance on how organizations can enact healthcare co-production in ways that are meaningful, attentive to power, and protective against consumer vulnerability. First, our study highlights the need for healthcare organizations to engage with consumers to leverage their strengths for co-production, including strengthening consumer co-production capacity, which has a number of managerial implications (see Table 6 for a summary of managerial implications and future research). For example, to support practical implementation, healthcare organizations must integrate constructing, connecting, and co-learning practices into existing initiatives, such as consumer involvement in organizational decision making, role onboarding and training, and regular service quality improvement efforts. While our study is grounded in healthcare, we propose a strengths-based partnership framework (Fig. 1) that may be relevant to co-production efforts across different contexts in which similar dynamics of involvement are valued. For example, beyond healthcare organizations, our findings are relevant to advocacy groups, community health centers, and nonprofit organizations. Strengthening consumer co-production capacity may enable individuals to move beyond their co-producer role to influence policy and lead peer-based interventions. Future research should implement and test these practices across different organizational and service settings and quantitatively assess their outcomes, for example, in relation to inclusive engagement quality and meaningful co-production practices. However, this requires organizational willingness, leadership buy-in, supportive structures, and purposeful involvement. In the absence of organizational responsibility and adaptability, co-production risks becoming consultative or symbolic (c.f., Williams et al., 2020), affording consumers limited influence over key decisions that affect their daily lives (Carlini et al., 2025).

Second, we reveal the instrumental role of transformative service mediators (Johns & Davey, 2019) and knowledge brokers in dismantling hierarchical structures in healthcare co-production. Service organizations seeking to optimize co-production might invest in dedicated facilitation to support clarity of role, expectations, and safety among co-production partners. Another useful tool is the Lundy model of child participation (Lundy, 2007), which can also be used with adult co-production partners, to purposefully structure voice, space, audience, and influence. However, the model requires flexible application to avoid becoming a procedural tick-box exercise.

Third, strengthening consumer co-production capacity must be approached with caution so as not to alienate consumers from their lived experiences, as this may paradoxically diminish their position to contribute (Van De Bovenkamp & Zuiderent-Jerak, 2015). We argue that consumers must be supported in partnering for co-production through practices that attend to their varying capacities and needs. Healthcare organizations can mitigate vulnerability by ensuring that consumers, like any employee, have adequate organizational resources to perform their roles effectively, including support for navigating scrutiny of their lived experiences. This may include providing clear guidance on co-producer roles to ensure that consumers feel empowered alongside healthcare professionals and researchers (Guo et al., 2013). Most critically, experiential knowledge must be treated as equally important as professional expertise, and consumers' individual contexts and circumstances should be recognized.

Finally, this study offers important implications for the policy and service systems level, including practical means of operationalizing growing mandates for PPI and participatory approaches (c.f., Gilfoyle et al., 2022) through our strengths-based partnership framework (Fig. 1). This requires policies that fund knowledge broker roles and mandate structural support. Policymakers and regulatory bodies should support strengthening consumer co-production capacity through funding mechanisms, structural incentives, and accreditation standards. National organizations may consider establishing best-practice

Table 6
Managerial implications and future research questions.

Theoretical Contribution	Managerial Implications	Future Research
Strengthening Consumer Co-production Capacity	Implement training and support systems to strengthen consumers' co-production capacities, ensuring they feel empowered	How can healthcare organizations collaborate with consumers to identify consumer strengths and assets that are utilized and necessary for healthcare co-production partnerships?
Leveraging Consumer Experiential Knowledge	Prioritize practices of constructing, connecting, and co-learning for purposeful inclusion, mutual understanding and respect, and knowledge exchange for co-production practice	How can healthcare organizations further integrate practices of constructing, connecting, and co-learning to ensure equitable and purposeful partnerships during strengthening consumer co-production capacity?
Reducing Consumer Vulnerability and Epistemic Injustice through Strengths-based Approaches	Shift from viewing consumers as vulnerable to empowering them as valuable contributors and co-producers	What roles do strengths-based approaches play in sustaining consumer involvement in healthcare co-production? How can healthcare organizations develop additional practices to reduce power disparities, such as epistemic injustice, during healthcare co-production?

guidelines to support the integration of programs that strengthen consumer co-production capacity and orient consumers to their co-producer role. Incorporating criteria for strengthening consumer co-production capacity into healthcare evaluations could institutionalize such inclusive practices. Such criteria might assess whether organizations provide adequate resources, compensation, or education to support co-production partnerships. Ultimately, advancing epistemic justice and mitigating consumer vulnerability for co-production requires system-level change.

7. Limitations

First, our findings are illustrative rather than prescriptive. As this is a qualitative study, our findings may not apply broadly across service systems, given that co-production and consumer vulnerability risk in co-production are context dependent. However, we argue that principles for strengthening consumer co-production capacity and partnering, such as establishing trust, clarifying roles, and valuing experiential knowledge, are likely transferable across contexts. Second, translating our findings into routine practice may be constrained in settings characterized by limited opportunities to act on experiential knowledge, the absence of dedicated facilitators, or restricted infrastructure. Securing leadership buy-in, cultivating a supportive organizational culture, and allocating resources are likely preconditions for broader implementation. Scaling the approach requires additional adaptation of the framework for diverse populations and health conditions. Finally, our study may also be subject to self-selection bias, as members of YPLEP and FMLEP may have experienced greater health stability, higher confidence, and a stronger sense of agency in healthcare and research settings at the time of their involvement.

CRediT authorship contribution statement

Paula Leocadio: Writing – review & editing, Writing – original draft. **Carol Kelleher:** Writing – review & editing, Supervision. **Eluska Fernández:** Writing – review & editing, Supervision. **Colin P. Hawkes:** Writing – review & editing, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

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