Semkina *et al. Research Involvement and Engagement* (2025) 11:32
https://doi.org/10.1186/s40900-025-00702-6

Research Involvement
and Engagement

COMMENT **Open Access**

Developing theoretically grounded strategies to enable and promote patient and public involvement in implementation research studies

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Abstract

Implementation research has emerged as a branch of healthcare research. It studies methods to promote the application of research findings into practice, and, thus, to improve the quality and effectiveness of services and care. Patient and public involvement (PPI) in implementation research is a means of bridging research and practice. However, the progress to achieve greater involvement is slow. The reasons might include potential tensions when including perspectives of stakeholders with diverse skills, backgrounds and experiences, and the risk of reproducing paternalistic clinician-patient relationship tradition of healthcare research, which is incompatible with PPI.

In this commentary we shared the PPI navigation approach that we used in a recent implementation research project, where eight patient and public partners attended three 1-hour sessions to discuss a specific implementation research methodology. On reflection, we categorised the approach into three strategies that aimed to empower patient and public partners and promote their senses of autonomy, relatedness and competence. According to the Basic Psychological Needs Theory, these are principal human needs, fulfilment of which may lead to higher motivation, performance, and well-being. We outlined the process of applying each strategy and used this and other theories to show why this can lead to positive partner and research outcomes. Two patient and public partners provided their perspectives about what worked and what could be further improved. The strategies can be used in future implementation studies, and we provide recommendations for the development of more strategies using the theory-based approach.

Plain English summary

Implementation Science (IS) is now an important part of healthcare research. It can help to increase the quality of patient care by understanding how best to use research findings in everyday healthcare practice. Patient and public involvement (PPI) is key for achieving this goal but has not been used very much in this field. This might be due to lots of reason, including the challenges of knowing the best way to include different ideas and perspectives. But also recognising this relationship is different to some of the clinician-patient relationships in healthcare where the clinician often takes more dominant position. In response to some of these challenges, we share our approach

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to navigating PPI relationships used in a recent project to explore IS methodology. We discussed the methodology used in IS with patient and public partners over three sessions. This project has helped us categorise the strategies we used and how they empowered patient and public partners to be more involved and contribute to IS research. We also used organisational theories to understand these strategies further. To achieve greater PPI, the strategies we describe could be used in future IS research and more strategies could be developed using our theoretical approach.

Keywords Patient and public involvement, Stakeholder engagement, Implementation research, Implementation science, Basic psychological needs theory

Background

Stakeholder collaboration in implementation science

Stakeholder collaboration in research is viewed by funders and researchers as an important means to achieve impact [1]. The major benefits associated with engaging stakeholders include enhanced relevance and usefulness of the research, improved research tools and practices, and better dissemination [2]. In the context of implementation science (IS), stakeholder engagement may pre-empt challenges to evidence-based treatment implementation across all phases of the process [3] and may ensure suitable "fit" of the treatment within the intended context [4]. However, despite perceived benefits, there remain several broad questions about how engaging stakeholders in collaborative work is conceptualised and enacted within IS.

The term 'stakeholder' encompasses everyone who has a direct interest in the process and outcomes of a scientific inquiry [5, 6]. In IS as applied to the healthcare context these have been suggested to include the '7P' categories: patients and the public, providers, purchasers, payers, public policymakers and policy advocates working in the non-governmental sector, product makers, and principal investigators [7]. This selection has the potential to provide a considerable diversity of skills, expertise and experience, interests and motives, educational, occupational, and demographic backgrounds, and values and beliefs. The variety can lead to unique insights. But this will depend on inclusivity of methods to engage the audiences.

One critical stakeholder collaboration in IS research is with patient and public partners. According to the English National Institute for Health and Care Research [8], collaboration with this group can take three forms: involvement (research carried out 'with' or 'by' patient and public partners), engagement (research communicated 'to' them) and participation (research 'of' them). The inclusion of this stakeholder group in healthcare and IS is widely supported by policymakers, researchers, and funding bodies [9]. The arguments that are put forward include normative (i.e., patients have a right to have an input in research on their condition), consequentialist (i.e., there is evidence that involvement improves the efficiency, relevance, safety, dissemination, and value of research), political (i.e., involvement helps to attract resources) and practical (i.e., involvement increases accountability and transparency of research) [10, 11]. However, despite the universal commitment, the progress to achieve greater involvement is slow and inconsistent [12].

Challenges in navigating stakeholder collaboration and patient and public involvement in implementation research

Literature identifies two issues that help to explain inhibitions to greater PPI in implementation research. Collaborative research may imply increased diversity in team members' backgrounds and areas of expertise [13]. Previous research on the effects of diversity on team performance found mixed results. In principle, diversity of skills that stakeholders bring to the table can increase the potential to resolve complex problems more successfully, however the results depend on individual and organisational level moderators (e.g., high openness to experience, reward structure) [14]. Other studies have shown the disruptive effects of diversity, like social exclusion, miscommunication, conflicts, and turnover [15, 16]. At times, collaborators engage in power struggles to gain more resources than others and increase their resource controllability within a team, which influences team performance negatively [17, 18]. Therefore, the challenge of navigating diverse stakeholder collaboration include relational, communicational, and power aspects. To tackle these, more attention needs to be given to the experiences of and relationships within and between different groups involved in collaborative implementation research [19]. In context of PPI, effective (i.e., mutually rewarding) relationships are the baseline without which the collaboration can slow down or stop altogether [20]. Navigating collaborative relationships demands considerable investment of time and resources and is associated with potentially high administrative burdens, communication efforts and interpersonal conflicts [ibid.].

Another challenge that relates specifically to PPI in IS is that, in its development, IS adopted various traditions of the healthcare field and the risks it is exposed to. The healthcare field is sometimes characterised as 'paternalistic' and domineering over patients in the context of care [21]. The essence of the profession is to provide help, which at times means taking control over someone who cannot help themselves, as a loss of health can render the patient more or less dependent on medical professionals [22]. However, this situation may have negative consequences and, for instance, result in overprotective attitudes and behaviours, that can lead to reduction of autonomy, self-efficacy, and capability of the patients [23], which then acts as a self-fulfilled prophecy of disempowerment [24]. In this context, the equalitarian PPI may be antagonistic in two key ways: it challenges the habitual top-down professional/researcher-patient power distribution, and also perturbs the existing knowledge-creation mode, de-privileging supposed objectivity of scientific knowledge over subjective or experiential knowledge. Therefore, in this relationship model PPI is less likely to take equitable (as opposed to tokenistic) forms. For instance, a study by O'Shea and colleagues found that while PPI might have become more integrated into healthcare service development, patient and public partners were unable to permeate healthcare commissioning and procurement at an equal level with professionals [25]. Gray-Burrows et al. study found that the risk of PPI being tokenistic and difficulties in engaging the public were considered higher for implementation research than for clinical research, while clarity of expectations for PPI was lower [26]. Such a scenario represents a risk to (any) research, because not only does it lead to dysfunctional relationships, but it can also contribute to reduced autonomy, self-efficacy, and capability of the patient and public members.

Using interdisciplinary theories to address the challenges

One approach to address the challenges outlined above, is to develop strategies aimed to tackle the issues of potentially dysfunctional and unequitable relationships with, and lack of autonomy and self-efficacy/perceived capability of the patient and public partners. Various theories from the fields of psychology, social psychology, sociology, management, and organisational science provide insights into power dynamics, developing trust and autonomy and facilitating sense of self-efficacy and competence and other relevant issues. Here we argue that such theories can be usefully incorporated into strategy design and delivery– but that this has not been done to-date. In other words, while theories from these disciplines are effectively applied in various implementation research practices [19], they are consistently missing from conceptualisations and practices related to PPI activity in implementation studies. For instance, there is little theoretical focus on examining power imbalances in PPI [12].

The PPI tends to be 'atheoretical' [9] and conceptually confused [12] in its approach, implying the deficiency of PPI approaches that are based on an explanation of how and why specific relationships lead to specific events [19]. Gaps in theorisation may lead to gaps in operationalisation. The outcomes of using PPI strategies developed without the clear conceptual underpinning may be more difficult to predict [19], especially facing the excessive complexity of the collaboration process. In contrast, conceptual frameworks help explain mechanisms (i.e., causal principles) that underpin the process of collaboration [20]. Grounding strategies in analytical principles of how and why specific relationships lead to specific events implies their better predictive capacity (e.g., of effectiveness in achieving their desired outcomes) [19].

In light of the challenges and opportunities outlined above, in this commentary we aim to share how we strategically navigated PPI in an IS project undertaken by our research team, grounded in conceptual frameworks that help explain our approach. The IS research project explored the perspectives of patient and public partners on what it means and requires for implementation measures to be considered 'pragmatic' (i.e., usable) in implementation research [27]. Key criteria for pragmatic measures include importance to stakeholders in addition to researchers, low burden, broad applicability, sensitivity to change, and being actionable [28]. In contrast, when training requirements for using implementation measures are unclear, when using them requires specialized education, when they are too lengthy, or have a time burden to administer, score, and interpret, it makes their use unrealistic in practice [29]. To be usable by different stakeholder groups and ensure wider participation in evaluating implementation, the measures need to feature diverse methodologies. We involved a group of patient and public members as research partners to scrutinise the existing approach to evaluating usability of implementation measures and discuss its broader implications for stakeholders and for the development of IS theory. One of the partners subsequently became a co-author of the study.

A conceptual framework that specifically responds to the negative consequences of challenges identified earlier (i.e., reduced senses of autonomy, competence and relatedness) is *the Basic Psychological Needs Theory* [BPNT, 30]. The theory considers autonomy (the experience of volition and willingness), relatedness (the experience of warmth, bonding, and care), and competence (the experience of effectiveness and mastery, a concept similar to self-efficacy) as the three fundamental human needs, simultaneous satisfaction of which facilitates higher well-being, performance and intrinsic motivation [31]. Being intrinsically motivated means engaging in an activity 'to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn' [31, p.70]. It is a key source of enjoyment and vitality throughout life, and a key predictor of persistence and adherence on complex and creative tasks [32]. The three basic needs relate to the challenging issues in context of PPI in IS, making the theory highly useful for developing strategies to tackle them. It provides a potential explanation of why and how satisfying these needs may lead to positive proximal outcomes of improved perceived relationships, higher perceived autonomy, and perceived self-efficacy; to more distal outcomes of higher well-being, performance, and intrinsic motivation of patient and public partners; and to improved collaborative implementation research outcomes. In a novel way, BPNT can be used to analytically categorise PPI strategies aimed at tackling the challenges identified above and promote partners motivation to get involved and contribute.

It should be noted that multiple theories could be useful for developing PPI navigation strategies that set to improve various outcomes outlined above. For instance, Vroom's Expectancy theory states that motivation to perform is underpinned by perceptions of expectancy (whether effort will lead to a desired performance), instrumentality (whether performance will lead to a desired outcome), and valence (whether the outcome is desirable) [33]. In this way, the theory suggests that an individual's behaviour is motivated by anticipated results or consequences, while the extent of their effort is driven by its perceived influence on the desired outcome [34]. However, this emphasis on the outcomes was less applicable in context of our work because of limited knowledge of the anticipated outcomes of involvement for our partners.

BPNT is the only theory of motivation which brings together the three aspects (of relatedness, competence and autonomy) that we focus on, to positively influence motivation of public partners to contribute, hence our choice to use it as our overarching framework. In addition, there are theories that focus on each of these aspects individually. In particular, Goal-setting theory [35], Job Demand-Control theory [36], and Social exchange theory [37] each help to further clarify the development of senses of competence, autonomy and relatedness and highlight the elements of PPI navigation that we have used. For instance, one strategy was aimed to develop trusting relationships with the partners that would facilitate open and honest communication and knowledge sharing, and thus, a theory of human relations fitted well (e.g., social exchange theory). The three elements are also researched within multiple other theories, which can be used to prospectively design or retrospectively analyse PPI navigation strategies in future research. For instance, autonomy is one of the core job characteristics that Job Characteristics Theory [38] posit as essential for creating fulfilling and motivating work environments. The theory specifies five task conditions (skill variety, task identity, task significance, autonomy, and feedback) which prompt three beneficial mediating psychological states (experienced meaningfulness of work, responsibility for outcomes, and knowledge of work results) which may lead to enhanced employee motivation, job satisfaction, and overall performance (ibid.). Due to relatively large number of variables that we did not focus on in our PPI work, this theory was less applicable to our context.

In this commentary we aim to share three strategies of navigation we retrospectively formulated based on our approach to navigating PPI in the IS project described above, aligned with the key challenges in navigating stakeholder collaboration and patient and public involvement in implementation research, and grounded in BPNT and other theoretical frameworks that help to explain how the strategies function. Each PPI strategy sets to satisfy one of the three needs in BPNT. Other theories are instrumental to explain various aspects of the strategies. The desired outcomes of the strategies include proximal (improved perceived relationships with, higher perceived autonomy, and perceived self-efficacy of patient and public partners); and more distal (higher well-being, performance, and intrinsic motivation of patient and public partners). Evaluating the outcomes of using the strategies is beyond the scope of this commentary, but they could be measured in future research using qualitative and quantitative methods and subjective and more objective measures.

By sharing these strategies we hope to inspire the development of more strategies of PPI navigation, using theoretical frameworks to better predict their effectiveness in generating the desired outcomes. In other words, we strive to add wider interdisciplinary theoretical resources to the field of PPI within IS to help develop effective involvement strategies. Guided by a broader theoretical context, we anticipate it will be easier to develop robust strategies and tactics as per study requirements. This in turn, can support wider and more equitable and meaningful inclusion of patient and public partners in research and facilitate 'theorising' (i.e., inform the development of new theories [39]),, further advancing the field of PPI in implementation research.

Methods

Ethical approval for the project was granted by King's College London Research Ethics Review Office (MRA-22/23-34271). Methodology was developed in line with GRIPP2 guidelines [40]. We recruited eight patient and public partners (i.e., those who have developed expertise through their experience of healthcare systems) using the networks, websites, and social media channels of an applied health and improvement science research

Table 1 Demographic characteristics of the PPI group members

Gender	62.5% female, 37.5% male
Ethnicity	50% White, 37.5% Black, 12.5% Mixed
Age	25%-21-30 y.o., 25%-51-60 y.o., 25%-61-70 y.o., 12.5%-31-40 and 12.5%-80+
Marital status	75% single, 25% in civil partnership
Education	12.5% had A levels, 25% had vocational education diplomas, 37.5% had (or studied towards) BA, 12.5% had a MA and 12.5 had a PhD.
Disability	75% had a disability
Service use experience	75% were current or previous service-users, 62.5% were current or previous carers, and 25% were close to a service-user or a carer.

partnership based in South London, England. The demographic characteristics of the members are presented in Table 1.

The recruitment and preliminary communication with the partners took approximately six weeks. Subsequently, the partners attended three 1-hour online sessions over August-September 2022, and discussed pragmatic concerns in implementation research. During the sessions, we discussed 11 statements that referred to the approaches to evaluating pragmatism (usability) in IS. The statements were loosely based on a pre-existing rating scale to evaluate pragmatic qualities of implementation measures [the PAPERS scale, 29], bringing debatable aspects of evaluation to discussion, and reflecting how various implementation aspects should be measured. Three to four statements were discussed in each session (see the next section for further information). RB facilitated the discussion and AS observed and assisted.

The sessions were recorded and transcribed in Microsoft Teams, checked for accuracy (by AS), and analysed thematically (by RB) in relation to pragmatic philosophy and methodology using NVivo software. The process of interaction between researchers and patient and public partners before, during, in-between and after the sessions was thematically analysed by AS guided by the organisational theories. The theories were applied to organise the key themes (i.e., strategies). In other words, we reflected on the way the communication unfurled through the prism of several organisational theories and retrospectively developed the strategies.

Below we outline three strategies for navigating PPI based on the BPNT framework. These aimed to foster a sense of competence, autonomy and relatedness in the research partners. We outline the main elements of the strategies and rationalise their value through aligning them with analytical principles of relevant theories.

Main body

Facilitating competence through the right level of challenge

Perceived competence can be thwarted if the tasks are perceived as too challenging (e.g., unclear and unfamiliar) by the people that receive them, and positive feedback is lacking. The essence of this strategy was nurturing a sense of competence (a sense of mastery and effectiveness) in our partners through balancing the level of challenge (e.g., clarifying the topic and familiarising the participants with the issues) in supplementary materials, questions we discussed during the workshops and the presentation of the draft of our resulting work to the partners. Materials-wise, we distributed supplementary resources to help the partners immerse themselves in the topic. Firstly, we developed a 7-minute *introductory video presentation* where we presented, visually and auditorily, the rationale and the core challenges of IS, and connected it to the goal of the project and the task (or the input) of the stakeholders avoiding technical language as much as possible and defining it where necessary. Figure 1 shows one of the slides where we have identified two gaps in how implementation measures are evaluated and the difference the involvement of our partners in the project can make.

Visualisations can help to effectively communicate complex and abstract knowledge [41] and bridge the information gap between the researchers, patients, and the public [42]. Further, patient and public partners can be disadvantaged by a lack of clarity around the language [43], so using 'simpler' format (i.e., avoiding scientific and technical jargon, reducing the length of the narrative) is a key tactic for effective knowledge translation across different audiences [44]. This is especially important in the field of IS, which has been described as a 'tower of babel' [45]. We also developed *a 4-page flyer* where we went in more detail about the project (outlined its background, aims, method and potential outcomes).

In summary, we used two knowledge mobilisation strategies: 'Transmedia' strategy, which means that we combined multimodal (oral, written, visual) forms of expression to engage with as many partners as possible (recognising that various stakeholders would be more or less receptive to ideas presented through different forms of media [46]); and 'Layering', which involves strategically determining the level of detail, complexity, and language required to effectively discuss ideas and arguments with the patient and public partners [47].

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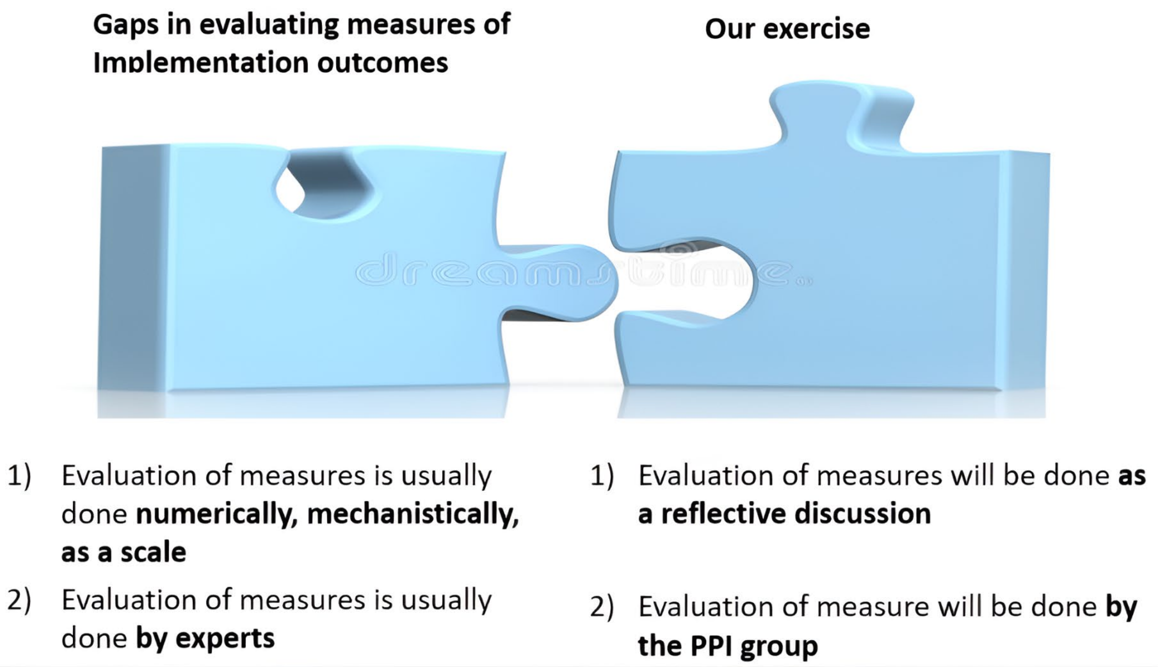

Gaps in evaluating measures of Implementation outcomes

1) Evaluation of measures is usually done **numerically, mechanistically, as a scale**
2) Evaluation of measures is usually done **by experts**

Our exercise

1) Evaluation of measures will be done **as a reflective discussion**
2) Evaluation of measure will be done **by the PPI group**

Fig. 1 A slide from the introductory presentation to the partners

and reflecting how various implementation aspects should be measured. The statements invited partners to discuss *content* of the evaluation items, for instance, '*The low cost of an implementation outcome measure should always be accounted when justifying its superiority*', as well as *method* of evaluation, for example, '*The relative advantage of one measure over another should be rated numerically rather than determined by the specific context it will be implemented into*'.

Generally, we tried to make the statements relevant to our partners who were service users and public members with diverse experiences of using the healthcare system. For instance, with regards to evaluation of acceptability of an outcome measure: '*Staff and service users' opinions should be accounted as one part of a numerical rating exercise rather than being central to the whole rating process– what do you think?*'. We also tried to activate interest and curiosity of our partners, emphasising provocative aspects of the issues, e.g. '*Do you think using quantitative measures (e.g., scales) might lead to over reporting good results over bad results?*'. The questions were sent to the members in advance of the meetings so that they had time to reflect. At one point (before the second meeting) some members asked for additional clarifications for some of the questions; researchers sent additional details and materials.

Once we had written up the draft of the project findings, we sent it to the partners for review, with an accompanying note. Some terms were clarified, and we clearly outlined that we did not expect scientific scrutiny, but rather, the members were asked if the interpretation of the input was in line with their thinking and their lived experience [48].

Overall, in this section we have summarised the ways in which we strived to facilitate the sense of competence in patient and public partners. However, the task of a researcher in PPI co-working is not to reduce the level of challenge as much as possible but rather work to prevent it from becoming overwhelming. In line with *the Goal-Setting Theory* [35], setting a more challenging task for people results in their increased confidence and them setting higher goals for their own performance. This is because setting challenging (although not too challenging) goals communicates one's confidence in them. This phenomenon has been described as 'the Galatea effect': it occurs when high performance expectations are communicated directly and convincingly to the partners, and their performance improves. Therefore, along with our challenge-reduction strategies, we also emphasised that the task was challenging and demanding, yet we hoped it would be manageable for the partners.

Facilitating autonomy through task-related decisions

To cultivate intrinsic motivation, increase well-being and performance we sought ways in which partners could experience autonomy– a form of functioning associated with sense of voluntariness and integration with one's authentic interests and values [49]. In a work context, job autonomy is the degree of freedom and discretion of an employee to make task-related decisions and select work procedures [50]. According to *the Job Demand-Control model*, strain will be highest in jobs characterized by the combination of high job demands and low job control (i.e., low autonomy), however, the jobs characterized by the combination of high job demands and high job control will lead to highest task enjoyment, learning, and personal growth [51]. In other words, job autonomy buffers the impact of task demands on strain and can help enhance employees' job satisfaction with the opportunity to engage in challenging tasks and learn new skills [36].

In our PPI work, our goal was to identify the level of autonomy where the partners were fully engaged, but not overstretched, and apply autonomy-supportive behaviours (i.e., minimised control, affordances of choice and encouragement of self-regulation [31]) within these boundaries. The essence of the strategy was to provide the autonomy to express themselves to other partners, while ensuring psychological safety to do so and while maintaining focus and sufficient structure. Just as higher (but not excessive) levels of challenge are conducive to an increased sense of competence, they are also conducive to feeling increasingly autonomous.

We encouraged the partners to make various task-related decisions (e.g., to approach the topic from the point of their own experience and to explore the meanings of issues based on that, inductively, rather than being 'explained' what the issues meant in line with previous research). To achieve that we provided an overview of the research problem when we discussed the background and aims of the project. We also identified the key issues of debate within the topic. However, we did not lead the discussion to progress in a specific direction. We did not stop members from talking when the example they provided seemed 'too long', when they seemingly 'deviated' from the question, or when they voiced an opinion that contradicted our views. Through the PPI work, due to the real diversity of the background experiences of the partners, a researcher can discover the unordinary and unexpected ways of how people sometimes arrive at what may constitute a highly important insight. It was important to let the narratives develop naturally. We developed a non-prescriptive, semi-structured workshop schedule, which permitted partners to be focused while still giving us freedom to explore and clarify the partners answers in more detail [52].

We sent the discussion questions to the members in advance, so that they would be mindful that we need to allocate time to discuss all of them. We also emphasised that we wanted to offer everyone an opportunity to contribute, so that the members were mindful of providing others the time to speak as well. Therefore, most of the time they successfully regulated themselves time-wise. For instance, the length of their replies would seldom be more than 3–4 min. Nevertheless, participants' responses to this level of autonomy differed throughout the course of the sessions, and some participants tended to speak more than others. To give everyone a chance to have their say, we gently encouraged the latter to voice their opinions as well. Also, content-wise, we focused the discussion around the specific issues, and this was usually enough for the discussion not to go far off course. We assumed, that most of the members thought through the statements in advance and planned their answers prior to the workshops, at least to some extent. Therefore, if one answer deviated from the topic, the next member to speak would usually bring it back. The partners also creatively developed each other's points, because they could relate to what was said, and this added to a friendly atmosphere of the workshops. The interactional, synergistic nature of the group discussions allowed partners to clarify or expand upon their contributions to the discussion in the light of points raised by other partners [53], and it is important to capitalise on this in PPI work.

On the other hand, it was essential to encourage members to voice contradictory or opposing opinions, in this way also fostering autonomy. In all our communications we encouraged the partners to critique and challenge the ideas that they found concerning. For instance, in our instructions:

"What we specifically ask for– is your critical reflection. You might not necessarily agree with the statements and that's ok. We ask you to express your critical view. We don't ask for your validation. We look for gaps and inconsistencies in the measures to improve them." (Presentation).

We tried to make critique a norm rather than a threat, something that is valued, and not considered offensive.

Facilitating relatedness through prioritisation and authenticity-building

The third basic human need in BPNT fostered in our work with the partners was relatedness. Relationally supportive behaviour is the opposite of impersonal and rejecting, and it implies the caring involvement of others [31]. The essence of this strategy was to encourage a sense of relatedness in partners by prioritising the quality of their experience through consistently responding to their needs. We focused on and in some cases prioritised the feelings and concerns of our partners over the research priorities. For instance, before the second meeting some partners expressed the concerns that they needed more examples to understand the task better. As indicated earlier, in addition to responding with reassurance and providing more materials, during the meeting we also devoted extra time in the beginning to go through members' concerns, how they felt about the level of complexity, and what were the confusing elements. In this way, although this discussion was less related to the topic per se, we communicated the message that, for us, the experience of the partners mattered, and we were ready to try and improve it even at the cost of losing some of the precious time intended for the issues in the research focus. Social Exchange Theory [37] posits that actions are contingent on rewarding reactions from others, implying that social interaction or exchange is a two-sided, mutually contingent, and mutually rewarding process. In line with it, our communication with the PPI members could be described as exchange relationships, governed by the norms of reciprocity, which are conditional and relying on the imputed value of the benefits attained [54]. Attributions of authenticity were found to be fundamental in developing and maintaining the quality of exchange relations [55]. For instance, the reciprocity will be stronger if the partners view researchers' actions as being motivated by genuine concern, rather than calculative interest and strategic motivation to encourage discretionary effort [56]. In the management study by Nayani et al. [55], employers were perceived as authentic by employees when they were able to act consistently, to follow up on their promises about concern for employees' interests and to provide useful support. This was possible, when the employers attuned to the employee experience and renegotiated subtle interests shifts, rather than relying on top-down assumptions. Using the authenticity-building strategy can help shift the exchange relationships towards higher mutual commitment and support [55]. In context of PPI, it requires rigorous, visible, and ongoing effort to notice, understand and act to fulfil expressed or implied intentions around partners' interest. Such actions indicate predictability, which is the basis for establishing trust [57]. We tried to signal that we are willing to accommodate our partners' pace and methods of work, to devote effort and time to improve their experience, not to rush them to contribute when they did not feel like it during the meetings, and to create other opportunities for them to express their views (e.g., individually rather than collectively, or in a written form).

Perspectives of patient and public partners

After the study had ended, we had resources to explore with two partners as to their experiences throughout their involvement. Including their perspectives provided a more holistic and equitable account of the involvement process alongside ours. Increased relatedness, motivation and interest were mentioned as the achievements of the collaboration:

> *I think we were all in it together very much both peers and you guys, the researchers definitely. I think we were all motivated, we were all interested. And I think we were all in it for both the work itself and for each other. I think relatedness was very good.*

A partner also emphasised that the researchers managed to communicate the importance of the topic and the importance of involvement of patients and the public in the project. This seemed to drive motivation to contribute:

> *I really did enjoy it. It is a very important thing and I think it's very important to involve people in [it] because we are often closer to the ground truth of things as people with lived experience than people who 'don't inhabit that frontline [] black and white reality.*

Another comment was that the study materials were helpful but could be further expanded to reduce the challenge: '*The video is very clear and well presented. I think it may be very demanding of some PPI [partners]. [] The slides are clear and illustrate in simple ways the background and logic of implementation science. Your commentary is essential. [] The lung cancer screening [in the presentation] is a good example of making it relevant to patients and public members. Is it possible to include another example or two that illustrates where the system is not so straightforward?*'.

One partner mentioned that a clearer definition and framing of the problem in the beginning, and a concrete statement of the expected outcome of work would help them contribute more. This would be in addition to the provided materials, due to the multiple conceptual levels, and therefore increased complexity of the topic:

> *What I think was missing, was a really clear framing of the problem and the task at hand. [] Somehow it wasn't captured as effectively as it might have been. There was that communication problem. [] It's so important, especially in the context of what we were doing, which is kind of meta measurement and as soon as you're talking about meta anything there is the potential for confusion to creep in because it is something which is conceptually more subtle, and [which] people don't usually encounter in our day-to-day lives.*

The same partner raised the issue of subjectivity of clear definition and how it can differ between stakeholder groups:

> *And this is not that you have not given a clear definition. It's just it wasn't perceived as a clear definition.*

Overall, these partners indicated some effectiveness of the strategies to increase the sense of relatedness in collaboration and motivation to contribute and highlighted crucial areas for developing further involvement strategies. We focus on these in the final section.

Conclusions and recommendations

In this commentary, we have shared reflections about our approach to PPI navigation in a recent IS project. We retrospectively categorised the approach into strategies in accord with organisational theories and in response to the common challenges of PPI in IS.

We believe that the added level of predictability which comes with using analytical concepts to explain how and why the strategy leads to the desired outcomes will inspire wider adoption of a more theoretical approach to PPI in general (in IS and beyond), selecting the most suitable theories for the research goals and settings. Wider use of theoretical insights can lead to developing more effective PPI strategies. In context of IS, this can further advance the field, because it can expand the access and meaningful contribution of patient and public partners into classically complex areas of IS. This can help facilitate equity and inclusivity of PPI in IS. Moreover, further inquiry into the interaction of strategic PPI approaches and theoretical underpinnings can inform the development of new PPI theories in IS.

We have attempted for the first time to bring together and align with PPI navigation a unique combination of theories. This novel set is instrumental because it specifically targets the core challenges of stakeholder collaboration and PPI work in IS, including sub-optimal relationships, miscommunication, and power imbalances, as well as reduced autonomy, capability, and self-efficacy of patient and public partners. These challenges, linked to the of lack of equity, motivation and trust have not been sufficiently addressed in IS before [20, 39]. We recommend consideration of these challenges in navigating PPI in IS. Researchers could adopt and adapt the strategies that we shared, or develop new strategies with similar strategic focus for other implementation research studies that seek to involve patient and public partners.

Similarly, we recommend aligning PPI approaches with conceptual frameworks. These could be the ones that we proposed or other that offer alternative angles to analyse PPI process that are not considered by BPNT and other frameworks we used. For instance, PPI can be considered from the viewpoint of McClelland's Theory of Needs [58], which states the needs for achievement, power, and affiliation as the strongest drivers of motivation and performance. Future studies could explore the importance of the need for power (i.e., need for status recognition, opportunity to influence others, personal prestige) as a motivational driver of PPI in research and develop specific strategies that could satisfy the need. This can offer a useful angle to analyse power dynamics in PPI, as BPNT does not directly address it. Foucault's theory of decentralised and relational power also could be valuable for interpreting the PPI process [59]. The author views power as not being held by specific actors and wielded over others in a top-down fashion but co-produced in social interactions through the way people negotiate meanings of what becomes accepted and validated [60]. These theories may be useful to address some of the potential challenges of PPI in IS (i.e., potential power struggles and power hierarchy).

We chose to align our PPI navigation strategies with BPNT because we focused on the empowering and intrinsically motivating potential of increased perceived competence, autonomy and relatedness in our PPI work. However, a complementary perspective could be added if extrinsic motivation (engaging in an activity to obtain an external (e.g., tangible) reward or to avoid punishment) [31] would also be considered. The BPNT is part of the wider Self-Determination Theory (SDT), a macro theory of human motivation which distinguishes between these two types of motivation [61, 62]. There is a general agreement in IS that PPI needs to be adequately compensated with extrinsic perks (e.g [1]).,, but this needs to be done carefully, as intrinsic and extrinsic motivation are not additive [31]. For instance, Deci, Koestner and Ryan [63] found that people's intrinsic motivation might be undermined when people are given extrinsic rewards for an intrinsically interesting activity, possibly, because rewarding was perceived as controlling one's behaviour. However, noncontingent extrinsic rewarding (e.g., not specifically tailored to achieving a standard) tended not to have the detrimental effect [32]. Future research could develop PPI navigation strategies that would also enhance extrinsic motivation (e.g., 'PPI rewarding strategies'). Using SDT can help understand the motivations and expectations of patient and public partners more widely, and future scholars should decide how broad they wish their theoretical lens to be.

The process we have followed has several limitations, which give rise to future research opportunities. Retrospective designs feature inherent limitations in terms of validity. For instance, data that was not collected in a predesigned structure for specific requirements of the study might be missing [64]. Our commentary utilizes qualitative methodology, which is in line with the current movement towards more extensive use of qualitative methods in IS [65]. However, generalisability of the findings of retrospective qualitative work is also limited. Our commentary may be suggestive of the strategies and the theories that can be used in PPI work in IS which are in some ways similar (e.g., similar group size and similar project timeline). However, future studies will need to verify the effectiveness, applicability, and adaptability of the strategies and theories in other research contexts. Retrospective reflections can form the basis on which prospective studies are planned, which is our hope with this commentary.

In this work we did not conduct a formal evaluation of the strategies. While beyond the scope of this commentary, for future research, we recommend conducting a wider evaluation in which strategies informed by different theories and based on different hypotheses about the nature of effective PPI and partner engagement in IS can be comparatively and prospectively tested, possibly including both qualitative and quantitative evaluation approaches. Moreover, the partners noted two areas which need more strategic focus in PPI. Firstly, communication of the importance of the topic/project is a highly motivational approach, which can be fruitfully developed. Secondly, extended focus on clear framing of the problem and the expected outcomes is a potentially powerful tool for PPI effectiveness. We recommend to focus on these areas in more depth and potentially develop creative ways to deliver it. Achieving shared understanding of the problem is a crucial milestone, and it may require more varied communication strategies and materials, additional funding and thorough checking before progressing with the task itself.

These limitations notwithstanding, in this commentary we proposed a link between the field of PPI in IS and interdisciplinary theories from the fields of motivation, human relations, and work performance, which can help to develop strategies to support PPI in implementation research processes. We hope that it will motivate further inquiry into the theoretical groundings which help explain, evaluate, and improve the outcomes. We take the view that collaborative stakeholder inquiry is vital for ethical (e.g., social justice) and practical (e.g., quality improvement) reasons. We aim not to instruct which strategies to use to navigate PPI in IS projects. Rather, we set to provide a starting point and guidance to scholars, who like us believe in the value of patient and public involvement in implementation research and wish to successfully use it in their professional pursuits.

Acknowledgements
We would like to thank the patient and public partners involved in the study for their dedication and important contributions to this project.

Author contributions
AS: idea, conceptualization, writing. RB, NS, FJ, SM: critical editing.

Funding
Applied Research Collaboration (ARC) South London Involvement Fund 2022–2023.

Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
The study was approved by the King's College London Research Ethics Office, reference number MRA-22/23-34271.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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Received: 7 October 2024 / Accepted: 13 March 2025

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