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Relational work in implementation: a qualitative analysis of intra- and inter-professional strategies leveraged in genomic multidisciplinary teams

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Abstract

Background Relationships are foundational to successful implementation of innovations in healthcare. In genomic medicine, multidisciplinary teams with good communication are most effective to provide safe genomic care; however, working together could be challenging due to the distinct work culture, worldviews, and clinical approaches held by different professional groups. In this paper, we explored the various strategies used to build relationships and foster collaboration as part of a Change program that supported the use of genomic testing and counselling in specialty areas.

Methods Qualitative interviews were conducted with 36 participants across 3 professional categories (genetic counsellors, medical specialists, and nurses/allied health workers) to ask about their experiences working together in innovative models of genomic care across 7 clinical specialties. Data analysis was conducted through a two-staged inductive and deductive coding process: firstly to identify the categories based on the attributes of the Relational Theory and then coded against the Theoretical Model for Trusting Relationships and Implementation (the 'Model').

Results Eight out of nine strategies to build/strengthen relationships described in the 'Model' were identified in the interview data. They included three technical strategies and five relational strategies. The inter-connections were present between relational and technical strategies, as well as within the relational category, whereby some served to reinforce one another. Two additional strategies emerged from the interview data but were not included within the 'Model', including: *negotiating boundary work* and *accepting differences* used at inter-professional level. Specifically, genetic counsellors either reconstructed the professional boundary by taking over tasks beyond their role or adopted a boundary-preserving strategy to balance the social order within the team.

Conclusions Our study highlights how relationship-building strategies can be leveraged in genomic multidisciplinary teams and can inform decisions about creating conditions that promote positive relationships and relational competence, ultimately leading to successful implementation of innovations into organisations/systems.

Contributions to the literature

- This study attends to relational exchanges and how the strategies to build relationships and collaboration were leveraged at intra-professional and inter-professional levels to enable change and innovations in genomic healthcare.

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- We drew on the Relational Theory and the Theoretical Model for Trusting Relationships and Implementation (the 'Model') to code qualitative interview data and identified the use of three technical strategies and five relational strategies among the participants. Applying a two-staged inductive and deductive coding process allowed the analysis to capture the strategies that were not included in the 'Model' but emerged from the interview data.
- We note a limitation of the Model regarding the binary categorisation of relational and technical strategies without acknowledging the fluidity of those conceptualisations, as some strategies could play out in both categories.
- Attending to the unique context of genomic healthcare offers a more nuanced understanding of the different forms of interactions and exchange that may occur on a continuum rather than a binary divide.

Introduction

The growing relevance of genomics across healthcare has created new opportunities for professionals from different disciplines and knowledge backgrounds to work together to facilitate use of genomics outside of clinical genetics services where genomics is traditionally practiced [1–3]. To provide genomic care in a safe and effective manner in non-genetic specialty areas, it is important to bring together teams that cross sociotechnical boundaries. A successful multidisciplinary team that includes genetic and non-genetic health professionals is essential to ensuring higher diagnostic rates and improving patient management [4, 5]. However, working together in multidisciplinary teams can be challenging due to the differences in the social position of professional groups, the distinct work culture, paradigms, priorities, and clinical approaches, resulting in conflicts, fragmentation, and disconnection [6–9].

Trusting and supportive working relationships are essential to address power differentials, overcome relational challenges and conflicts, navigate the complexities of implementation, and ensure a smoother process of introducing evidence-based practice and initiatives [10–12]. Positive relationships and strong collaboration facilitates the achievement of implementation goals; ensuring that all voices are heard and considered throughout the process leading to more acceptable and effective implementation strategies [12]. Data have also shown that strong relationships can improve patient experiences and quality in healthcare [13, 14]. This is realised through enabling effective reflection, sensemaking, and learning within the care team and

the organisation [15], replacing bureaucratic and formal control methods to allow for distributed leadership [16], and accelerate the implementation of change [17]. In contrast, a lack of strong collaboration and mutual understanding may result in challenging experiences for team members, causing them to doubt their abilities, lose faith in their professional ideals, and form negative views of other groups [18]. It can also negatively affect the quality of care, leaving patients disoriented and disempowered [19].

Hallmarks of high-quality relationships and effective teams include: continuous, rich, and transparent communication; respectful two-way interactions [12, 20]; and trust [21]. Specifically, pursuing regular and timely communication and face-to-face approaches is essential to establishing trust and building social capital [15, 22, 23]. Demonstrating an act of kindness and civility is also beneficial for maintaining peaceful coexistence of different professional groups, ensuring empathy and mutual respect [23]. Effective practices to build relationships and trust and promote power-sharing include sharing expectations, building coalitions, encouraging mutual learning, and ensuring bidirectional communication flow to incorporate feedback, manage conflicts, and adapt strategies [11, 12, 21]. The need for awareness of the strengths and weaknesses of oneself and others [21], understanding everyone's roles, showing respect, and valuing others is highly regarded [4]. Exhibiting cultural competence and understanding the organisational culture, are also effective in supporting partnership building and initiative scale-up [11].

While existing research has emphasised relationships are foundational to successful implementation of innovations in healthcare and make up the majority of implementation strategies [22], there are limited empirical studies studying relational work in implementation, particularly in the context of complex, emerging practices like genomics. This paper aims to address this gap by exploring different types of intra- and inter-professional strategies to foster positive working relationships in genomic multidisciplinary teams. We highlight the need to attend to strategies deployed at different levels among professionals from the same or different disciplines, as a strategy that works to address relational challenges and enable collaboration among a uni-disciplinary setting might not be relevant for a multidisciplinary environment. In doing so, the study can offer insights into the context where the strategies may apply, their suitability at a specific level of collaboration, as well as the inter-relationships between them. While specifically drawing on data from genomic medicine, the findings from this study can inform efforts to

promote trusting relationships and collaboration across specialty areas and health services.

The Change program

This study is part of an overarching research study within the Change program which funded multiple change projects since 2023. Those projects set up innovative, multidisciplinary models of care outside of clinical genetics services in Victoria, Australia. In Australia, people have access to publicly funded genetic services and genomic testing where medically appropriate [3]. The national healthcare scheme Medicare covers an increasing number of genetic and genomic tests. Although service volumes are increasing [24], test use remains low [25]. The lack of capability and capacity of non-genetic health professionals is a known barrier to the wide adoption of genetic and genomic testing in routine care [26, 27].

Targeting diverse specialities such as neurology, neuropsychiatry, nephrology, haematology, transplant, cardiology, and paediatrics, all the models of care funded by the Change program deployed genetic counsellors as change agents to support non-genetic health professionals to adopt genomics in clinical practice and provide patients with immediate access to genomic testing and counselling without referring to a clinical genetics service [28]. Those change projects bring together teams of health professionals from different disciplines (genetics and non-genetics) with distinct professional values, norms, and clinical approaches. The research team was in a unique position to study the relational aspects of genomic care implementation; therefore, we took an implementation science approach to explore the strategies used to leverage collaboration and build new relationships among those genomic multidisciplinary teams.

Theoretical frameworks

The design of the overarching study which sought to understand how innovations spread and what is required to support and sustain the use of genomics [29] aligned with the Theory of Diffusion of Innovations in service organisations [30]. In the present study, relational theories can guide data collection and analysis and help interpret the findings. Notably, Relational Theory [31] provides theoretical grounding to attend to relational aspects in implementation. This theory recognises that improvement and development in organisations and system change efforts occur best in the context of connection. Interactions that promote growth are marked by mutuality, with both parties expecting personal growth and feeling a responsibility to support each other's development. Building strong relationships requires attributes

including empathy, vulnerability, emotional expression, and a commitment to fostering the other person's growth, with the expectation that these interactions will benefit both parties.

The Theoretical Model for Trusting Relationships and Implementation (the Model) proposed by Metz and colleagues [32] is also relevant for understanding relational work in policy and practice implementation. This theoretical model emphasises relationships as a foundation for implementation efforts via their influence on motivation, capability, and opportunity for change. Accordingly, the Model recognises the greater importance of building trusting relationships and addressing power differentials, rather than selecting specific implementation strategies. Nine strategies for trust-building are described in the Model, including: four technical strategies (i.e., *frequent interactions*, *responsiveness*, *demonstrating expertise and credibility*, and *achieving quick wins*) and five relational strategies (i.e., *bi-directional communication*, *co-learning*, *empathy*, *authenticity*, *vulnerability*). It is well established that trust is the most essential element for the functioning of teams in interdisciplinary teams in general [21] and particularly for successful collaborations for effectively integrating genomics into routine healthcare [33]. It is crucial that change agents build trust to influence others, because in its absence, the legitimacy of the change will be questioned [16]. In the context of the Change program, trust-building is critical to addressing the common scepticism about the application of genomic testing and the presence of implementation barriers noted at the early stage of implementation [28]. While trust may not always be an explicit purpose of the strategies deployed by the participants in this study, those involved in the implementation process may consciously or unconsciously seek to cultivate trust in the process of introducing change into genomic healthcare among professionals whom they interact with.

Methods

Data collection

A purposive sampling strategy was used to recruit participants who had involved in the change project implementation or interacted with the project teams in the specialty clinics where the projects were delivered. They included genetic counsellors, and non-genetic health professionals (medical specialists, nurses, and allied health workers such as pharmacists or social workers). We conducted interviews with genetic counsellors employed in change agent roles at various time-points across the cycle of the change projects (Authors 2025). The interview guide for genetic counsellors focused on the change agent experience over time, including questions about participants' engagement with peer genetic

counsellors, non-genetic specialists, nurses, allied health workers and other project team members throughout their employment in new roles in non-genetic specialty areas. Meanwhile, one-off interviews with medical specialist and other non-genetic health professionals were conducted towards the end of or shortly after completion of the change projects. Questions asked in those interviews included: their views and interest regarding the use of genomics in their specialty areas, how they influenced the others’ practice of using genomics, and one-time reflection on collaboration within multidisciplinary teams (the two interview guides are included in Supplementary files). Interviews lasted 30 to 50 min with genetic counsellors and 25 to 40 min with non-genetic health professionals. The first author TD, an experienced qualitative researcher with a social science background who was unknown to the participants, conducted all the interviews. The other research team members come from different research and practice backgrounds and possess diverse expertise in implementation science, program evaluation, management, genetic counselling, and education. All interviews were transcribed verbatim either by TD or a professional transcription service provider and de-identified before analysis.

Data analysis

We adopted a two-staged inductive and deductive coding process. At the first stage, data were coded using inductive content analysis [34]. TD read all the notes and transcripts of interviews with specialists and genetic counsellors to become familiar with the data and then selected segments of the interview transcripts that suggested the occurrence of bi-directional or multi-directional exchange or interactions. These chunks of data were later coded for big-picture categories, followed by line-by-line coding and refined into sub-categories based on the attributes of Relational Theory [31]. At the end of this stage, we generated a list of codes suggesting activities that had a relational nature and were specifically used to build up relationships and/or strengthen collaboration. Codes were verified by looking at the transcripts of the remaining interviews with nurses and allied health workers to identify further activities. All those codes were then categorised into two levels of collaboration: activities related to relationship building employed by individuals belonging to the same profession were grouped under ‘intra-professional,’ whereas activities related to the interactions with people from the other profession (between genetic counsellors and medical specialists, or between genetic counsellors and nurses/allied health workers) were categorised under ‘inter-professional.’ A deductive coding stage then followed and involved TD, BM, and MM, whereby the data that were inductively

coded from the previous stage were organised according to technical and relational strategies described by the Theoretical Model for Trusting Relationships and Implementation [32]. The team met fortnightly to compare and discuss coding discrepancies until consensus was reached. We did not discard any categories that did not fall within the Model but instead kept and analysed them to capture the emergent strategies.

Findings

Participants

We interviewed 36 participants across 3 main professional categories (genetic health professionals, medical specialists, and nurses/allied health workers), including 8 men and 28 women. The sample possessed a diverse range of working experience and areas as shown in Table 1.

Table 1 Participant characteristics

	Number of participants (total n = 36)
Genetic Counsellors	(sub-total n = 15)
Years of working experience in genetics	
Less than 5 years	6
5 to under 10 years	4
10 years and above	5
Mainstream work setting	
Cardiology	1
Haematology	1
Nephrology (adult and paediatric)	6
Neurology/neuro-psychiatry	3
Paediatrics	2
Transplant	2
Medical specialists	(sub-total n = 14)
Occupation	
Nephrologist	7
Neurologist	2
Neuropsychiatrist	2
Hepatologist	1
Haematologist	1
Cardiologist	1
Years of experience working in their current occupation	
Less than 5 years	6
5 to under 10 years	6
10 years and above	2
Nurses and Allied Health Professionals	(sub-total n = 7)
Occupation	
Nurse	4
Pharmacist	2
Social Worker	1

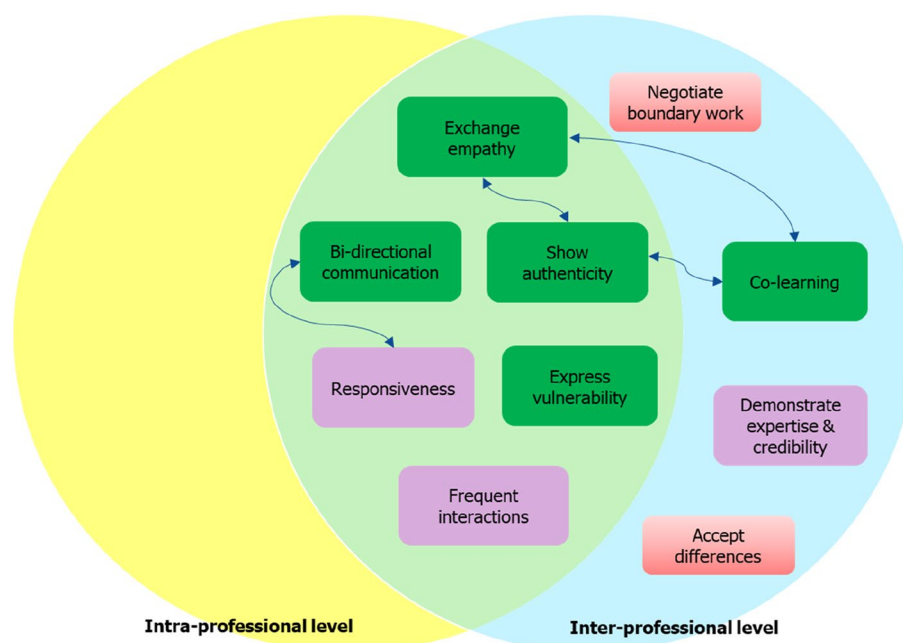


Fig. 1 Building relationships and collaboration in genomic healthcare

The interview data suggest the use of eight out of nine strategies identified in the Model by Metz and colleagues [32] to build new relationships and strengthen existing relationships at different levels, as we illustrate in purple and green boxes in Fig. 1. The purple boxes represent three technical strategies, two of which were deployed at both levels of collaboration. Five relational strategies are shown in green boxes, three of which were used at both collaborative levels. Two out of those eight strategies were only present at inter-professional level, while none of the strategies described in the Model was solely used to enable intra-professional collaboration. The red boxes represent two additional strategies used among the participants that are not included within this Model, which are *negotiating boundary work* and *accepting differences* (only used for cross-discipline collaboration). In addition, we identified the interconnections among those strategies, which illustrated by the double arrows.

Technical strategies

Technical strategies used at both levels of collaboration

Participants used informal strategies to build rapport and trust with their colleagues via *frequent interactions* by attending clinics or team meetings in person, which was used both within and across disciplines. A specialist, for instance, described the importance of having frequent meetings:

[B]ecause we frequently meet as a unit to discuss complex cases, and also all new diagnoses are

discussed in a MDM [multidisciplinary meetings], so this will frequently come up and everyone knows now the availability of the clinic that these patients need to be seen in a genetic counselling context. (Specialist CH001)

Participants also created *frequent interactions* outside of formal team-based settings by conducting online communication about genomics with colleagues of the same disciplines who had a shared interest in learning about genomics, as described by one specialist:

And then the other part is just even getting engaged to just have a meeting, for example. Someone emailed me a couple of weeks ago and we're going through the resources and the tests available for them just through a Zoom call. So just that kind of engagement to just know: How do I do this? Can you take me through this? (Specialist CL001)

Inter-professionally, participants believed their regular presence helped ensure the accessibility of genetic counselling support and increase the awareness of the value of genomics in clinical practice or the supportive role of genetic counsellors. Genetic Counsellor 01 explained:

And I think over time from being present in the MDT [multidisciplinary team] meetings and things like that, the value that we can add for each other became apparent to everybody. And I think

now that relationship is quite strong, and I think it's created a sense of trust of genetics. (Genetic Counsellor 01)

Participants emphasised the importance of *being responsive to the needs of others* and showed a willingness to adjust their approach to align with the requirements and working style of their colleagues. One participant noted this:

The team members are also not afraid to be flexible... what that means is that again a lot of the decisions that are made are collaborative... though this differs quite a lot to what approach I would take [when working in clinical genetics]. (Genetic Counsellor 13)

In other cases, participants were creative about tailoring project-specific activities to the diverse needs of their colleagues, for example, by providing informal education through purposefully enabling daily exposure to genomics to promote curiosity and learning in the same specialty department:

I've printed out the traffic light sheet [a tool for non-genetic specialists to identify patients for genomic testing] and stuck it on the wall of every consulting room in my hospital, in my clinic to encourage my colleagues to think which patients could benefit from it [genetic testing]. (Specialist CN05)

Technical strategies used solely at inter-professional level

While those *frequent interactions* and *responsiveness* were identified at both intra- and inter- professional levels, *demonstrating expertise and credibility* was a common strategy used solely by genetic counsellors when working with non-genetic colleagues to help the latter gain their knowledge of genomics, especially the practice of genetic counselling. Being able to do so suggested that genetic counsellors were entrusted with the genetics expertise by the non-genetic professionals. This strategy was often operationalised through co-counselling appointments, whereby a genetic counsellor attended a consultation run by a non-genetic specialist, such as in one example below:

So sometimes with the specialists,¹ we would use a bit of a shared care model where they might talk about, focus on the specialty side of things. And I

would focus on the genetic side of things. And that's a good way to kind of build their skills and confidence and they can hear how I might answer certain questions, but with the aim to help them to be able to do that independently. (Genetic Counsellor 05)

Specialist participants similarly acknowledged the effectiveness of co-counselling practice in the specialist clinic. They further pointed out the benefit related to gaining trust among patients, contributing to improving patient care:

Yeah, it was probably gold standard having someone in the appointment. Really, the difference there was the rapport building in a patient who's seeing me and hopefully trusts me, if they see that I trust this other person [the genetic counsellor] in the room, I think that's going to facilitate them to proceed with actually getting testing. (Specialist CD004)

In those cases, genetic counsellors could showcase their counselling expertise, offering the specialists the opportunity to observe how consent discussion and counselling was conducted in a co-consultation. Simultaneously, the patients could raise any testing-related questions in the same instance, helping minimise the issue related to a lack of trust had they been referred to an external department to see other health professionals with whom they had no prior contact.

Relational strategies

Relational strategies used at both levels of collaboration

Beyond technical strategies, participants relied heavily on interpersonal approaches to build relationships and foster collaboration. All but one strategy (*co-learning*) were used by participants both intra-professionally and inter-professionally. For instance, *bi-directional communication* emerged at inter-professional level when genetic counsellors regularly gathered feedback about how medical specialists perceived and utilised the support they provided. A participant highlighted its importance to ensure the implementation success:

[T]o get feedback from the people that you're trying to do this with, to see what they think, because you might think it's working really well, they might turn around and say, "No, it's not." (Genetic Counsellor 09)

Intra-professionally, *bi-directional communication* enabled the exchange of good practice and collective problem-solving, which a specialist described:

[I]f somebody has a case they want to discuss, they often come to me and then I can present it to the MDT. So that's another thing I will tell the special-

¹ In this paper we use 'specialist(s)' to refer to medically trained health-care professionals without a genetic background. We replace the name of a specialty area or the profession with a general term (left in italicised text in quotes) to protect the anonymity of participants or the clinic they were employed by.

ists, don't be that scared. If you ask it or you're not sure, you can always talk to me. Even though I'm nowhere near the expert, but I've just done a few [tests] and then I can present it to the MDT. (Specialist CN002)

Authenticity and vulnerability emerged in participants' descriptions of recognising their own knowledge and practice gaps when it comes to providing genomic care. For example, a specialist shared their limitations and simultaneously emphasised what colleagues from the other discipline could help them with when collaborating in a co-consultation context:

It's very hard to learn how to counsel these patients around genetic testing. And that's the biggest takeaway I've had from mainstream because we've got the [genetic] counsellor sitting in with me, giving me the advice. (Specialist CN03)

Participants also expressed an acceptance of others' vulnerability, as evidenced in the remarks made by Genetic Counsellor 10:

I've got a deeper understanding of the challenges that that medical professional face in raising genetics... and how fast things progress with those things and how talking about genetics or [with] other family members is sometimes just not a priority. (Genetic Counsellor 10)

Understanding their colleagues' vulnerability and the challenges they faced helped genetic counsellors tailor the way they delivered genomics information to their colleagues, making it widely accessible:

The Change program has these amazing resources on the website, some of the doctors are not even accessing it. They either don't know or they're not accessing it. I've dumped it on a local drive and apparently that's easier than going to one website that's got it all, with all the explanations. (Genetic Counsellor 09)

In addition, empathetic exchanges were manifested through participants' assessment of their positioning and what they could help their colleagues overcome their gaps:

[H]aving myself, as a non-genetic doctor... it's good to have someone there who is able to simplify it [the genomic report]... [B]ecause you have a relationship with that person, it's much easier to contact them than it is to take the effort to contact someone that you don't know. (Specialist CT002)

Relational strategies used solely at inter-professional level

Authenticity and empathy were factors contributing to co-learning which emerged from participants' descriptions of how they valued others' expertise and experience throughout the process of implementing new models of care. One participant noted this when speaking about the role of a colleague from a different professional group:

We had an ethical dilemma at our clinical meeting, and she was there and able to give her input and her insight and just helped. I just felt like we had better resolution about that. If she wasn't there, we wouldn't have had that resolution. (Allied Health Worker 01)

In return, participants recognised their own strengths and contributions to improving their colleagues' knowledge and practice of using genomics while working in multidisciplinary teams. Working alongside colleagues from the other disciplines was described as "learning from both sides." For genetic counsellors, they could influence the specialists about the approach beyond individual patient care:

I'm sure I'll learn a lot from them, and they will learn a lot from me in terms of how we approach things and consider things. We often have the family-centred perspective, a bit more than they would. (Genetic Counsellor 02)

Meanwhile, non-genetic health professionals were able to provide genetic counsellors with an opportunity to acquire knowledge about a specialty area:

But I can say that it might be trickier for the genetic counsellor to do that counselling, the initial sort of consult on their own, if they don't have an extensive background in the specialty area. So I think you learn from each other but I think it's probably a more difficult curve for the genetic counsellor if they don't have background experience in specialty. (Specialist CN001)

Emergent strategies

Our analysis suggests two strategies in addition to those described in the Model [32]; *accepting differences*, and *negotiating boundary work*. These emerging strategies were practiced mainly at inter-professional level.

Accepting differences

When professionals from different disciplines are positioned in the same team and work environment, they may bring distinct values and hold different clinical approaches regarding patient communication and care prioritisation. This could potentially lead to tension or

conflicts, as we found in earlier interviews conducted with a group of participants [28]. To overcome this, participants demonstrated an understanding of the discipline-specific differences and kept an open mind with the range of views, experience, and personalities among the team. This was illustrated in the remark made by a non-genetic professional about working with colleagues from the genetic discipline in the team:

I think clinicians we're much more succinct in the pre-test counselling appointment than the genetic counsellor might be. But it's not to say that it's better or worse. (Specialist CN01)

Participants showed an acceptance of the differences that characterise each professional group and highlighted the critical importance of not trying to fix or change the others. Rather, they understood the need to gradually 'fit' into the multidisciplinary teams. They were also prepared for the emergence of tension arising from those differences. They did not regard the difference as a threat to the success of their work, but considered it as an opportunity for learning and growth:

Because the specialists they've got a lot more focused on the medical specialty side of things... whereas I will ask some questions and might get some particular phenotyping information that I think will be useful as far as interpreting the results. But I'm certainly not thinking about their specialty management and their specialty care. But I found it quite interesting, and I was learning something from them getting in those conversations [co-consultations]. (Genetic Counsellor 05)

Acknowledging the differences allowed participants to identify the common goals shared by both genetics and non-genetics disciplines. This was helpful to develop an appropriate relationship-forming approach when one started to work with a new team, as Genetic Counsellor 01 described:

We're all coming from different perspectives, but you know the patient is at the centre of everybody's agenda, usually. And I think it's about the value, what we can do, not necessarily trying to change what they're doing, or tell them what they should be doing, or point out what they're doing wrong, but more about a more gentle value-adding of what genetic counsellors can do. And I think slowly building relationships is really important. (Genetic Counsellor 01)

Negotiating boundary work

Genetic counsellor participants in particular reported engaging in boundary work to achieve effective collaboration with colleagues from non-genetic disciplines while ensuring the best care outcomes for patients. In certain circumstances, participants spoke about the importance of expanding the professional boundary when working in multidisciplinary teams. For instance, they provided examples of taking over tasks beyond their formal role to support the specialist colleagues, despite not being responsible for managing clinical appointments in the clinic they were employed to:

Every so often they [specialists] have got a really big clinical load. For example, one patient who's failed to attend a few appointments. And she had a diagnosis... So, I spoke to the doctor: "Do you mind if I contact them, check in, explain that we have a result that needs to be returned and organise another appointment?" (Genetic Counsellor 03)

Meanwhile, in certain cases they highlighted the need to preserve or re-establish the boundary to espouse the patient-centred value and practice of the genetic counselling profession. One genetic counsellor explained:

You need confidence in your own ability, not to become too flexible to allow yourself to be molded by someone else or to the needs or wants of others. You need to stand your ground. (Genetic Counsellor 09)

Protecting the professional boundary required participants to overcome collegial deference and uphold their unique clinical approaches rather than compromising. This would ensure optimal patient care when disagreements about genetic testing arose with non-genetic colleagues, as described in a situation involving testing a family member under 18 years of age to find a matching donor:

[W]e [the whole team] were stuck figuring out: "Do we test him?" And the answer was: "Yes." But I was the one pushing to say: "We need to make sure that he is consenting, that he knows, that he's willing to do this test." Because I think it's very hard to say that someone in that situation is truly making a decision just for themselves, because obviously it's his dad's life. (Genetic Counsellor 11)

Discussion

This study explored the use of a diverse range of strategies to build or foster relationships in implementing new models of providing genomic care in an Australian health system. In applying the Model for Trusting Relationships and Implementation [32] to guide the coding of the

interview data, we identified that most of the relational and technical strategies described in this Model were present in our data. Participants in this study repeatedly emphasised *frequent interactions* as a core element in producing positive relationships. They did so by ‘being present,’ either through (in)formal in-person conversations or virtually through personal or team communications. Frequent interactions have been established as important for successful implementation, as they enable the exchange of information to facilitate decision-making and cultivate trust. While research in other healthcare settings mostly documented frequent interactions via in-person contact [11], our study showed that virtual forms of frequent interactions could prove their effectiveness in providing colleagues with immediate access to genetic counselling expertise and support, thereby enhancing understandings of role delineation and fostering relationships. This finding may be due to the unique characteristics of studying relational aspects in genomics mainstreaming models, whereby in many cases genetic counsellors provided genomics support to specialty clinics via on-call services [27]. It could also reflect the timings of the change projects which commenced after the COVID-19 pandemic when hybrid communication became a common way of working. With the finding from the interviews, we argue that online interactions could be leveraged to establish mutual understandings and foster positive working relationships among multidisciplinary teams.

Achievement of quick wins is the only strategy outlined in the Model that was not used among participants in our study. The absence of this strategy could be due to the fact that integrating genomics into routine healthcare is complex in nature, hence its success may only be seen in the long term beyond the time-limited change projects under study. The study offers further insights into the application of those strategies at different levels of collaboration among professionals from the same or different disciplines: two out of those eight strategies (i.e. *co-learning* and *demonstrate relevant expertise*) were only used to strengthen the collaboration between genetic and non-genetic professionals, while the remaining ones were used at both intra- and inter-professional levels. None of the strategies was only applied among professionals from the same discipline.

Our findings suggest inter-connections among the strategies: they are not stand-alone activities but serve to reinforce one another. Specifically, maintaining *bi-directional communication* (a relational strategy) was helpful in adjusting the implementation to be *responsive* to others’ needs (a technical strategy) and relevant to the local contexts. Further, we identified the interconnectedness among relational strategies,

specifically between *co-learning* and *authenticity* and *empathy*, whereby participants acknowledged their own strengths, but also the value of their colleagues’ expertise in genomics. This recognition benefited the process of mutual learning while they were positioned in multidisciplinary teams to introduce change in genomic healthcare. This finding corroborates the Relational Theory’s proposition of empathy as an attribute to successful relationship building when both parties show their commitment to supporting the other’s development through ‘mutual empowering’ – an intentional act of enabling and contributing to others’ achievement with less to do with authority [31]. When approaching the relationships with empathy, involved stakeholders consider the local context and their colleagues’ knowledge of genomics to identify the areas where they can help upskill the others. At the same time, they can recognise relational interactions as an opportunity for personal growth.

Applying a two-staged coding approach allowed us to capture emergent strategies not included in the Metz and colleagues’ Model [32], which were critical to fostering cross-discipline collaboration and working effectively within a team, including *accepting differences* and *negotiating boundary work*. Existing literature has shown the nuanced practices of boundary production and negotiation used among multidisciplinary health teams during the process of caring for patients, which potentially causes tensions [13, 35, 36]. In our study, genetic counsellors reconstructed the professional boundary to work collaboratively in medical specialties. In certain cases, they blurred the boundary by readjusting their role, somewhat similar to how nurses act as memory keepers to overburdened clinicians by giving cues to them in emergency departments when those colleagues forget something [36]. This strategy, while proven effective in helping non-genetic colleagues in their everyday patient management, may potentially lead to tensions among the team due to role ambiguity. Meanwhile, other genetic counsellors chose to stand up for themselves in other circumstances and advocate for what is considered a good practice in clinical genetics, even though it may differ from the belief and clinical approaches that are typical in non-genetic specialties. This boundary-preserving strategy could add the value of each specialty to interdisciplinary collaboration [33] and transform how the system of power relations play out among different professional groups working in the same team [6]. In the context of genomics mainstreaming, genetic counsellors possess a high level of genomics knowledge and a better understanding of patient needs for genomic testing and counselling but often hold less control over patient care than non-genetic specialists. In this way, the boundary-specific strategy

deployed by genetic counsellors when working with non-genetic health professionals may serve to balance that social order within the team: it affirms the position of genetic counsellors as the experts in the field of genomics, enabling them to exert their influence over how genomics is practiced and the decision-making about patient care in multidisciplinary teams.

A limitation of the Model [32] should be acknowledged regarding the binary categorisation of relational and technical strategies that respectively built on affective/interpersonal or cognitive/intrapersonal dimensions of trust without acknowledging the fluidity of those conceptualisations. While most strategies used by the participants in this study were more explicitly relational or technical in nature, others could play out in both categories. An example is engaging in co-consultation which could fit into both categories: it served as a technical way to *demonstrate expertise* but could also be considered as relational activity whereby participants expressed *authenticity* and *vulnerability* to recognise their limitations and the contributions of the colleague present at the same appointment. This is also the case for emergent strategies of *accepting differences* and *negotiating boundary work* identified within this study. In this regard, attending to the unique context of genomic healthcare where multidisciplinary care teams are essential and common ways of working offers a more nuanced understanding of the different forms of interactions and exchange that may occur on a continuum rather than a binary divide [22].

Limitations and strengths

Data from the medical specialist participants was less diverse than those coming from genetic counsellors who were interviewed at various timepoints throughout their employment in the change projects. Further, the strategies analysed in this study could not be considered as specific to the implementation stages, as we could only interview the non-genetic health professionals once (at the end of the change projects). To address these issues, we attempted to recruit medical specialists with diverse experiences of engaging with the change projects and interacting with genetic counsellors. We also enhanced the sample diversity by recruiting nurses and allied health workers who interacted with genetic counsellors throughout the change projects. This approach allowed us to capture more balanced views between genetic and non-genetic health professionals, enabling the documentation of diverse strategies for relationship formation.

Despite this, a major contribution of this study is its investigation of the deployment and suitability of strategies inter-professionally or intra-professionally. This is often missing from the literature and insufficiently

addressed in the Model for Trusting Relationships and Implementation [32], despite the complexity of team dynamics in interdisciplinary work environment [8, 9]. As this study was undertaken in a unique context of different change projects operated across different sites which brought together multidisciplinary professional teams to support the adoption of genomics in routine healthcare, we were able to attend to the types of interactions that played out at different levels. Our data show that while most strategies were used at both levels of collaboration, certain practices, including *co-learning*, *demonstration of expertise*, *negotiating boundary work*, and *accepting the differences*, were specifically applied at inter-professional level. Most of those strategies, apart from *co-learning*, are more technical or transactional than relational in nature [22]: they may still involve some forms of working exchange between parties, but less human interactions, and all tap into the uniqueness of each professional group. These findings can inform the selection of appropriate relationship-building strategies for stakeholders when interacting with people from different knowledge and clinical backgrounds throughout the implementation process to foster trust and address relational challenges that could inhibit implementation progress. Importantly, this study offers greater understanding of how social interactions occur within genomic multidisciplinary teams between change agents and adopters [30] and the effectiveness of different strategies that could promote the adoption and sustainment of a new practice in healthcare settings.

Conclusion

This study has furthered the empirical evidence to underscore the importance of understanding relational exchanges in implementation and how the strategies to build relationships and collaboration were leveraged to enable change and innovations in genomic healthcare. Attending to the relational dynamics and the nuances of specific strategies may help account for unexplained variance in achieving implementation outcomes [22] and sustain change [37]. Moreover, this knowledge can inform leadership decisions about providing and enabling the conditions that promote positive relationships and relational competence, ultimately enhancing the success and effectiveness of implementing innovations into organisations/systems. Integrating relational factors into implementation research not only deepens theoretical understanding but also holds practical implications for improving real-world implementation efforts across diverse healthcare contexts.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s43058-025-00828-4>.

Supplementary Material 1.

Acknowledgements

The authors would like to thank all the participants for generously sharing their time and insights. We are also grateful to Amy Clarke for her support in facilitating contact with the participants.

Authors' contributions

TD: conceptualisation, data collection, transcribing, data analysis, manuscript writing & editing; AM: conceptualisation, data collection, manuscript writing & editing; MM: conceptualisation, data analysis, manuscript writing & editing; CG: study oversight, conceptualisation, manuscript writing; BM: study oversight, conceptualisation, data analysis, manuscript writing, editing & submitting.

Funding

This study was funded by the State Government of Victoria and the 10 member organisations of the Melbourne Genomics Health Alliance. Work undertaken at the Murdoch Children's Research Institute was supported by the Victorian Government's Operational Infrastructure Support Program. Open Access funding enabled and organised by CAUL and its Member Institutions.

Data availability

The data analysed in this paper are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was approved by Royal Melbourne Hospital's Human Research Ethics Committee (HREC/80793/MH-2021) and the University of Melbourne's Office of Research Ethics and Integrity (Reference Number: 2023–26642–40071–3). All participants were engaged in an informed consent process and received written statement explaining the study and data confidentiality. They were informed that their participation was voluntary and that they could withdraw at any time. All participants provided written or verbal informed consent to participate in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 27 July 2025 Accepted: 6 November 2025

Published online: 16 December 2025

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