Health Promotion International, 2026, 41, daag067
https://doi.org/10.1093/heapro/daag067
Published: 22 May 2026
Article

‘We gout your back’: a qualitative study to co-design educational gout resources with Pacific people in Aotearoa New Zealand

Siobhan Tu’akoi [1]*, Samuela ‘Ofanoa [1], Melenaite Tohi[1,2], Alvina Pauuvale[3], Maryann Heather[4], Hinamaha Lutui[5], Rose Lamont[6], Felicity Goodyear-Smith[7], Malakai ‘Ofanoa[1]

[1]Pacific Health Department, University of Auckland, 22-30 Park Avenue, Grafton, Tāmaki Makaurau, Auckland 1023, Aotearoa New Zealand
[2]AcademyEx, 99 Khyber Pass Road, Grafton, Tāmaki Makaurau, Auckland 1023, Aotearoa New Zealand
[3]School of Public Health & Interdisciplinary Studies, Auckland University of Technology, 640 Great South Road, Manukau, Tāmaki Makaurau, Auckland 2025, Aotearoa New Zealand
[4]Etu Pasifika Limited, 175 Cavendish Drive, Manukau, Tāmaki Makaurau, Auckland 2104, Aotearoa New Zealand
[5]Southpoint Family Doctors, 4/9 Sharkey Street, Manukau, Tāmaki Makaurau, Auckland 2104, Aotearoa New Zealand
[6]Te Huinga Raukura ki Manurewa, 10 Scotts Road, Manurewa, Tāmaki Makaurau, Auckland 2102, Aotearoa New Zealand
[7]Department of General Practice and Primary Health Care, University of Auckland, 22-30 Park Avenue, Grafton, Tāmaki Makaurau, Auckland 1023, Aotearoa New Zealand
*Corresponding author. Pacific Health Department, University of Auckland, 22-30 Park Avenue, Grafton, Tāmaki Makaurau, Auckland 1023, Aotearoa New Zealand. E-mail: s.tuakoi@auckland.ac.nz

Abstract

Pacific peoples in Aotearoa New Zealand experience some of the highest rates of gout worldwide. Although understanding gout and urate-lowering therapy is a key component of ensuring uptake and adherence to medication, Pacific communities have identified a lack of resources and tools to support this. The objective of this qualitative study was to co-design education resources for Pacific patients and communities in Aotearoa New Zealand, aiming to increase awareness of gout and of urate-lowering therapy. A Pacific Research Collective, comprising Pacific community members, health professionals, and researchers, led this study. Guided by the Samoan Fa’afaletui model, six co-design workshops were undertaken using semistructured talanga (interactive talk with a purpose), and this paper presents the results from the latter three workshops. Participants included Pacific community members and health professionals aged 20–75 years and included Samoan, Tongan, Cook Islands Māori, and Niuean ethnicities. Participants reviewed existing gout resources, developed prototypes, and provided iterative feedback. Data was collated in NVIVO, and reflexive thematic analysis was used to inductively develop five key themes: (i) a disconnect between existing gout resources and community needs, (ii) Pacific-centred approaches to improve understanding of gout, (iii) benefits of video resources, (iv) recognizing diverse Pacific audiences, and (v) reflections on final co-designed resources. This co-design process prioritized Pacific views and lived experiences to develop culturally grounded gout education resources that can be utilized in healthcare settings and community outreach programmes. Future research should continue to partner with communities to ensure education approaches are relevant, appropriate, and impactful.

Keywords gout, co-design, Pacific, New Zealand, education, resources, video

Contribution to Health Promotion

- Highlights Pacific people’s views on current gout resources and the need for health promotion approaches that are simple, engaging, and culturally grounded.
- Shows that co-design can lead to relevant and accessible health interventions that support better gout knowledge and treatment decisions.
- Provides practical tools, including Pacific videos and brochures, that can be used in clinical settings, community outreach programmes, and online spaces to educate, counter misinformation, and support medication adherence.
- Demonstrates how centring community voices in research processes and intervention development can lead to appropriate and impactful approaches.

Introduction

Gout is a significant global health issue, with total prevalent cases currently at 55.8 million and predicted to increase by more than 70% before 2050 (Cross *et al*. 2024). Gout is an inflammatory arthritis that occurs due to an accumulation of uric acid, which can crystallize and trigger inflammation and pain in the joints. If not treated effectively with urate-lowering therapies, such as allopurinol, gout can cause tophi formation, long-term kidney damage, and increased risk of cardiovascular events (Cross *et al*. 2024). Aotearoa New Zealand (NZ) has some of the highest prevalence rates of gout worldwide, with significant inequities occurring between different ethnic groups. A national study in 2019 showed that Pacific people in NZ experienced the highest burden of gout at 14.8% (22% in Pacific men and 7% in Pacific women), followed by Indigenous Māori at 8.5% and non-Māori, non-Pacific at 4.7% (Health Quality and Safety Commission 2021). 'Pacific peoples' is a collective term describing the ethnicity of individuals who identify with Pacific Island countries across Polynesia, Micronesia, and Melanesia. Data showed that Pacific peoples were nine times more likely to be admitted to hospital for a gout flare and the least likely to be receiving regular urate-lowering therapy (Health Quality and Safety Commission 2021). Perceptions of gout among both health professionals and the wider public have historically focused on gout as a self-inflicted disease caused by dietary excess ('Ofanoa *et al*. 2025c, Guillén *et al*. 2020), despite evidence outlining genetics, kidney impairment, and weight as the largest contributing risk factors (Major *et al*. 2018). For Pacific people in particular, a specific variant in the SLC2A9 gene increases chances of gout by more than five times, while the ABCG2 missense Q141K variant has been linked with higher serum urate levels, risk of gout, and frequency of gout flares (Gérard *et al*. 2025, Hollis-Moffatt *et al*. 2009). Better access to treatment and improved adherence among Pacific populations is therefore urgently needed to better manage gout and reduce inequities.

Effective health promotion empowers people to increase control over their health, recognizing both individual skills and capabilities and the broader determinants of health (Nutbeam and Muscat 2021). Educational resources in particular have long been utilized as a tool for health promotion communication, often with the purpose of improving self-efficacy and medication adherence (Lailatul Barik *et al*. 2019). In the context of gout, Ramsubeik *et al*. (2018) conducted a systematic review and meta-analysis of studies investigating the effectiveness of healthcare behavioural and education interventions for gout patients. Behavioural interventions reviewed in this study included written education material, face-to-face gout education, and personalized plans and were delivered by doctors, nurses, or pharmacists. Among eight studies, the researchers found that a higher proportion of patients in the education intervention arm of studies were adherent to allopurinol, achieved decreases in serum urate levels, had improved quality of life, and had higher knowledge about gout compared to those in the control arm receiving usual care (Ramsubeik *et al*. 2018). Such findings highlight the critical impact of patient education on gout management and the role that health providers can play in facilitating better outcomes. Improving knowledge of gout and self-efficacy is critical to improving uptake of urate-lowering therapy and improving long-term outcomes (Wang *et al*. 2025).

In order to develop education interventions that better address the needs of communities, the involvement of end-users is becoming increasingly prioritized. Community-based participatory research approaches emphasize equitable partnerships among researchers, community members, and organizational representatives, with shared knowledge and decision-making (Israel *et al*. 2005). Within this, co-design is a practical method used to ensure that interventions are more relevant, appropriate, and impactful for the communities and patients they are intended to benefit (Slattery *et al*. 2020). A scoping review by 'Ofanoa *et al*. (2022) highlighted that although a number of health education resources were available in the NZ setting for gout and often target for Pacific people, there was a lack of Pacific community involvement and decision-making, which could potentially hinder the uptake and effectiveness of resources. The present study involves a Pacific community group named the Pacific Peoples Health Advisory Group (PPHAG) and a health professional network called the Pacific Practice-based Research Network (PPBRN) who are working in a co-design partnership with researchers to lead Pacific gout interventions and reduce such inequities. Building on gaps in gout knowledge and misconceptions identified by the community groups ('Ofanoa *et al*. 2025a, 2025b), this co-design study used qualitative talanga-based workshops to co-design an education intervention for Pacific patients and communities to improve knowledge of gout and urate-lowering therapy.

Materials and methods

Ethical approvals for this research were obtained from the Auckland Health Research Ethics Committee (administered by the University of Auckland) reference number AH22873, and written informed consent was obtained from all participants. The Reflexive Thematic Analysis Reporting Guidelines were used as a flexible reporting guide for this co-design study (Braun and Clarke 2024).

Positionality

After being invited by PPHAG and PPBRN to do workshops on Pacific methodologies and how to ask research questions (Lamont *et al*. 2020), our research team has worked alongside the groups over the last 8 years, building research capacity, jointly applying for grants, and developing co-design projects. Strong relationships have been built, reducing power imbalances and creating a trusted, inclusive environment. The research team includes five Pacific researchers (S.T., S.O., M.T., A.P., M.O.), two Pacific general practitioners working in South Auckland (M.H., H.L.), the Pacific community leader of PPHAG (R.L.), and a non-Pacific researcher with expertise in primary health care (F.G.-S.).

Context

Gout was selected by PPHAG and PPBRN as a priority health issue for Pacific people that would benefit from a new approach. Six co-design gout workshops have since taken place. A previous qualitative paper has detailed findings from the first three workshops (ʻOfanoa *et al.* 2025a, 2025b), which explored the Pacific groups' experiences of gout and their perceptions on key areas for intervention. The current study reports on the latter three co-design workshops, which explore one of the intervention areas identified by the community, education and awareness, more in depth. The goal was to co-design, implement, and evaluate gout resources that are by Pacific peoples, for Pacific peoples, and to increase understanding in the community.

Paradigm and methodology

A constructivist paradigm, which argues that knowledge is co-constructed through experiences, contexts, and social interactions, was utilized (Mann and MacLeod 2015). Acknowledging that individuals construct their own understandings of the world, the Samoan Fa'afaletui model was selected by the community groups to underpin this research. This methodology was chosen over other approaches as the groups felt it reflected Pacific ways of knowing, valued collective sense-making, and provided a culturally grounded framework for co-design and equal partnerships. The Fa'afaletui model describes ways of (fa'a) weaving together (tui) different houses or perspectives (fale) (Goodyear-Smith and ʻOfanoa 2022, Tamasese *et al.* 2005). Three different perspectives are included in this model, namely, the view from the top of the mountain, top of the tree, and person in the canoe fishing. The top of the mountain provides a long-distance view and can represent national experts and researchers; the top of the tree provides a midrange view and can refer to local health professionals in the community; and the person in the canoe fishing represents those who are closest to the health issue and have lived experiences. This collaborative approach aligns strongly with the co-design research method undertaken in this study, where Pacific community members were equal decision-makers at every stage of the research project (Tu'akoi *et al.* 2025).

Data collection

An iterative study design based around six co-design workshops with PPHAG and PPBRN has been undertaken, with the findings from the initial three workshops published elsewhere (ʻOfanoa *et al.* 2025a, 2025b). The current paper reports on the latter three co-design workshops, referred to from here onwards as Workshops 1–3, with the process outlined in Fig. 1. Each workshop undertook a semistructured talanga (interactive talk with a purpose) approach with broad discussion prompts (ʻOfanoa *et al.* 2015). Workshop 1 reviewed existing gout resources in NZ and started to brainstorm new intervention ideas. Analysis of Workshop 1 data enabled the research team and a Pacific graphics designer (who was present at the workshops) to synthesize the community's ideas into five prototype drafts. These prototypes were discussed by PPHAG and PPBRN in Workshop 2, and a ranking process identified the preferred prototype for further development. Analysis of Workshop 2 data enabled further development of the selected resource, and then updated versions were presented back for final discussion and refinement in Workshop 3. At the conclusion of this iterative co-design process, Pacific educational resources were finalized.

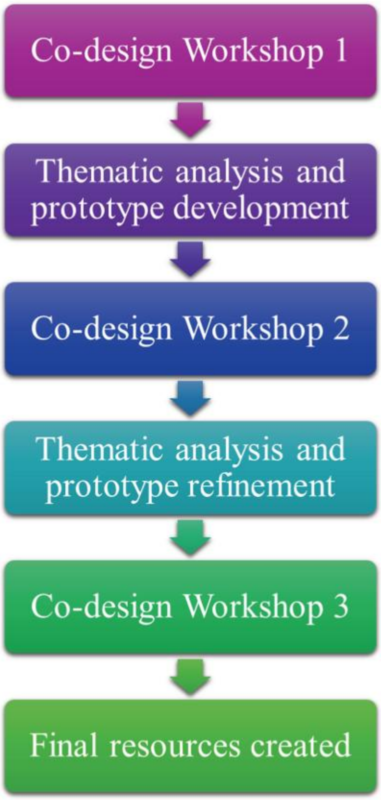


Figure 1 Flow chart of study design.

The workshops were conducted between 2023 and 2024. Workshops 1 and 2 were half-day in-person workshops held at the University of Auckland campus in South Auckland, NZ. Participants preferred a zoom option for Workshop 3. Types of data collected included notetaking, annotations by participants, and transcriptions by the research team. Each workshop was opened with a prayer, as is custom for Pacific settings, and kai (food) was provided at the in-person workshops. Each participant received a $100 grocery voucher for each workshop they attended.

Participants

Participants were recruited from the PPHAG community group and PPBRN health professional network via email from a member of the research team (S.O.). As this research is part of an ongoing project, strong relationships have been built over time between participants and researchers. Community members therefore prefer receiving workshop invitations from the research team via email and are comfortable to accept or decline based on their availability. While most workshops comprised existing and returning PPHAG and PPBRN members, participants were also welcome to bring along aiga (family) or other people in their networks along to participate, aligning with Pacific cultural values.

Data analysis

Data from the workshops, including notes, annotations, and transcripts, were collated and analysed using NVIVO version 15.

Table 1 Demographics of study participants.

Characteristic	Workshop 1 (*n* = 12)	Workshop 2 (*n* = 17)	Workshop 3 (*n* = 19)
Gender			
Female	9	10	15
Male	3	7	4
Gender diverse	0	0	0
Ethnicity			
Samoan	8	14	17
Tongan	4	1	3
Cook Islands Māori	0	2	0
Niuean	1	1	0
Other	0	0	1
Age range			
18–34 years	2	4	4
35–64 years	8	9	13
65+ years	2	4	2

Reflexive thematic analysis was used to analyse key themes through a six-phase approach: (i) becoming familiar with the dataset; (ii) generating initial codes; (iii) generating initial themes; (iv) reviewing themes; (v) naming, defining, and refining themes; and (vi) writing up (Braun and Clarke 2024). An inductive coding approach was used by two researchers (S.T. and S.O.) who familiarized themselves with the data and collaboratively generated initial semantic codes and themes. Regular meetings between S.T. and S.O. then enabled reflexive discussions of the developing themes, exploring differences in assumptions and interpretation, and refining the themes further. Final themes were then presented back to the participants at subsequent workshops for sense-making and to reflect on how codes and themes had been created. A reflexive approach was undertaken throughout this process, acknowledging the inherent positionality of the research team as a strength rather than a bias.

Results

Table 1 highlights participant numbers and demographics. Twelve members participated in the first workshop, followed by 17 and 19 in the second and third workshops, respectively. Participants ranged in age from 20 to 75 years and included Pacific ethnic backgrounds of Samoan, Tongan, Cook Islands Māori, and Niuean ancestry. Some participants identified with more than one ethnicity.

Overall, five key themes were identified across the three co-design workshops: (i) a disconnect between existing gout resources and community needs, (ii) Pacific-centred approaches to improve understanding of gout, (iii) digital media as an accessible health education tool, (iv) recognizing the diverse Pacific audiences, and (v) community ownership of co-designed resources. Table 2 provides an overview of the resource development process, including examples of the initial discussions, subsequent draft prototypes, and the final resources.

Theme 1: disconnect between existing gout resources and community needs

Participants in this study reviewed existing gout resources available for patients and families in NZ, discussing inadequacies in content and presentation from a Pacific perspective. Although many resources appeared to be targeted or intended for a Pacific demographic, participants felt that resources did not feel relevant to them. A lack of authentic representation in the images, designs, and patterns was discussed as factors that made the resources seem irrelevant and not engaging:

> With all the resources it’s all different kinds, but the overall picture straight away is that it doesn’t feel very Pacific. It wasn’t very eye grabbing. I think some of the content was a bit too much. It’s not something you can just give a patient. This is going to take about an hour to go through and explain it to the outpatient and takes a lot of time. (female, 35–64 years, Samoan)

> I think it’s really good to have our (Pacific) people on the resources because they will be able to see themselves in it and be like, hey he looks like me and he has gout. (male, 35–64 years, Samoan)

> The resources need to show people who look like us. We need to see ourselves in these documents and resources. (male, 35–64 years, Samoan)

A common discussion point by Pacific community members on current gout education was the overwhelming amount of information presented in a single resource, often from a highly medical standpoint. Participants discussed the importance of simplifying content and supplementing text with imagery and visuals so that it could not only be understandable but also more engaging. From a Pacific perspective, participants talked about how people might struggle to understand such complex concepts and particularly when it is not in their first language:

> What I found was that all these were overwhelming and that’s what strikes me. When I had a look, oh it was a book, I don’t have hell of a lot of time to read a book. (female, 18–34 years, Samoan/Tongan)

> Like there is a lot of information that is not useful in here that people aren’t going to spend the time reading it. (male, 35–64 years, Samoan)

> I read the first page and then stopped. Too much words. (female, 35–65 years, Tongan)

> Too many words, if my dad saw this, lapisi (rubbish). It will go in the bin. (female, Samoan, 18–34 years)

Theme 2: Pacific-centred approaches to improve understanding of gout

In order to improve gout knowledge in the community, participants in this study discussed the need for resources to resonate

Table 2 Summary of community feedback at each co-design workshop phase.

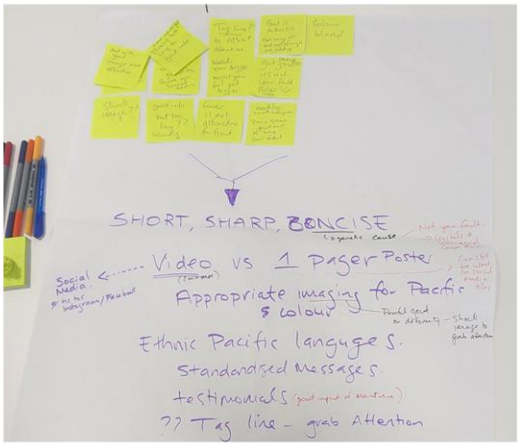
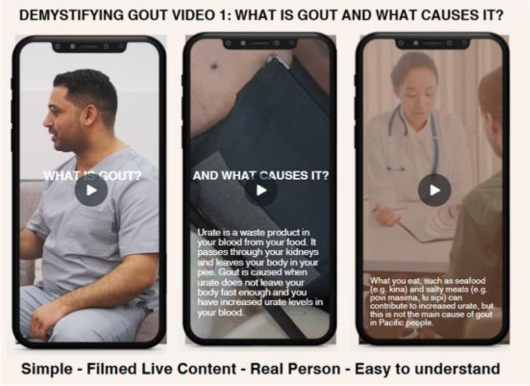
Workshop	Examples	Key feedback
Workshop 1: reviewing existing gout resources	 	• A need for simplified content • Reduce the amount of information presented • Less medical jargon • Resources should 'feel Pacific'
Workshop 2: co-designed prototypes	Example screenshot of video resource version 1 DEMYSTIFYING GOUT VIDEO 1: WHAT IS GOUT AND WHAT CAUSES IT? WHAT IS GOUT? AND WHAT CAUSES IT? Urate is a waste product in your blood from your food. It passes through your kidneys and leaves your body in your pee. Gout is caused when urate does not leave your body fast enough and you have increased urate levels in your blood. What you eat, such as seafood (e.g. kina) and salty meats (e.g. povi masima, lu sipi) can contribute to increased urate, but this is not the main cause of gout in Pacific people. Simple - Filmed Live Content - Real Person - Easy to understand Example of the brochure version 1 NIU THERAPY. NESIANS IMPROVING URATE LOWERING THERAPY Symptoms This urate forms crystals in your joints, causing extreme pain (a gout flare) and also damages your joints. Treatment Medication like Allopurinol, which is a drug that lowers the urate in your blood and prevents gout attacks. Or Natural treatment - Vitamin C, Enzymes etc What is GOUT and what causes it? Aw nah. Urate is a waste product in your blood from your food. It passes through your kidneys and leaves your body in your pee. Gout is caused when urate does not leave your body fast enough and you have increased urate levels in your blood. This urate forms crystals in your joints, causing extreme pain (a gout flare) and also damages your joints. Key Questions?	• Benefits of developing both a video and brochure • Videos are accessible and able to be shared widely, while brochures are physical and can be taken home • Be mindful of ensuring representation versus stereotyping

Table 2 Continued

Workshop	Examples	Key feedback
Workshop 3: next iteration of co-designed prototypes	Example screenshot of video resource version 2  Example of the brochure version 2  WHAT IS GOUT AND WHAT CAUSES IT? ▸ If you have too much uric acid in your blood, you get gout. The uric acid becomes crystals in your joints causing painful gout flares. ▸ Most uric acid in the body is created from the breaking down of old cells, with some also coming from certain food. ▸ If you continue to have high uric acid levels in your blood, you can get damage to your joints and kidney problems. Gout is not your fault ▸ The main cause of high uric acid in the body for Pacific people are: 1. Genetics 2. Kidney problems 3. Being overweight ▸ Pacific people have a gene that slows down the removal of uric acid compared to non-Pacific people. ▸ The food you eat makes little difference to changes in your uric acid levels and your gout. PLEASE SCAN THE CODE TO WATCH AN ANIMATED VIDEO ABOUT GOUT LET'S TALANOA ABOUT PACIFIC GOUT. WE GOUT YOUR BACK. What to know about Gout. and how to manage it.	• Video is engaging and short, although translated versions may be longer • Balance between engaging visuals and sounds, and ensuring messages are easily understandable • Images of real Pacific people needed in the brochures
Finalized resources	Example screenshot of final video resource  Example of the final brochure  KOEHA ‘AE KAUTI PEA KO ‘ENE TUPU MEIHE HA? ▸ ‘Oku tupu ‘ae Kauti meihe fu’u lahi ‘oe uric acid ‘iho totoo. ‘Oku fakamaka ‘ae uric acid ‘i ho hokotanga hui pea tupu ai ‘ene langaa. ▸ Koe uric acid he sino ‘oku tupu ia meihe movete ‘oe fanga ki’i sela (cells) motu’a he sino moe ngaahi me’akai ‘e ni’ihi. ▸ Kapau ‘e ma’olunga ‘ae uric acid ‘i ho totoo, tene maumau’i ho hokotanga huii mo ho kofuua. ‘OKU ‘IKAI KO HAO FO’UI HO’O MA’U E KAUTI ▸ Koe ngaahi tupu’anga ‘oe ma’olunga ‘oe uric acid ‘i ho toto koe: 1. Tukufakaholo 2. Palopolema ‘oe Kofuua 3. Fu’u mamafa ▸ Koe tokolahi ‘oe kakai Pasifiki ‘oku nau ma’u ‘ae ngaahi siini (gene) ‘oku nau faka tuai’i hono tukuange ki tu’a ‘oe uric acid meihe sino. ▸ Koe me’akai ‘oku ke kai, ‘oku si’i ‘ene tokoni ‘ana ke liliu ‘ae lahi pe levolo ‘oe uric acid mo ho’o Kauti. SCAN HERE TO WATCH A PACIFIC GOUT VIDEO We acknowledge the Pacific Peoples Health Advisory Group for co-creating this resource. Arthritis NZ Mateponapona Aotearoa and the Health Research Council of New Zealand funded this study. The organisations supported the process, but had no role in the study design, data collection, analysis or preparation of the co-designed resource. MĀLŌ E LELEI Ta Talanoa ki he Kauti TEU TOKONI ATU Ako ki he Kauti kake lava ‘o tokanga’i lelei	• The resources were able to simplify complex concepts • The puns and catch phrases were great and memorable

with Pacific people, such as using cultural visual elements, engaging formats, and humour. Co-designing innovative, light-hearted ways to present complex concepts was deemed important, without downplaying the seriousness of gout. For busy people with work, family, and church commitments, Pacific participants discussed that resources needed to be simple and straight to the point:

> For us we found (the current resources) really boring and ugly. Too much writing and too busy and I don't know if anyone will follow it. It would be good to have better visuals, reduce the information … have a simplified version. (female, 35–64 years, Samoan)

> We need to use slogans or catchy phrases like 'Gout your back', 'gout out of here'. There needs to be humour, but there also needs to be an emphasis on the pain associated with gout. (male, 35–64 years, Samoan)

In addition to ensuring that the design and language were Pacific focused, participants discussed the need to address common challenges faced in the community. An example raised by both PPHAG and PPBRN members in the co-design workshops was the commonality of sharing medications between family and friends, discussing that the resources should clarify why this should not be practiced. At the same time, participants recognized the nuances of ensuring resources were 'Pacific' without being stereotypical, further stigmatizing or deficit in nature:

> Another important message that we need to tell the Pacific audience is the importance of not sharing the medications. I think it is important to put in when it comes to medications. Also, the wording of 'you will take it for life', it sounds negative in a way, so probably rewording around in a way to make it sound less negative. But yes, that is a big problem in the Pacific community in Auckland right now, because we don't understand how and why we take these medications it results in sharing of medications. (female, 35–64 years, Tongan)

> We still feel like we need more ethnic Pacific images and Pacific languages. We need a grab line to grab attention. (female, 65+ years, Niuean)

> [Responding to a resource with a paragraph titled 'Nah but who even are we?'] 'I feel like it's a lot of stereotypes. It's saying that Pacific people speak like that. You might as well put 'bro' and 'what's up'. It feels very deficit. Our resources need to show that we don't all talk like that. (male, 35–64 years, Samoan)

Development of co-designed prototypes

Based on the thematic analysis of Workshop 1 regarding challenges of existing resources and opportunities for future approaches, a Pacific graphics designer who was present at the community workshops developed five prototypes of potential education interventions based on a thematic analysis of the community' ideas. This included a Pacific gout education video, an interactive gout card game, a written brochure, a medication reminder magnet, and a physical anatomical model of a foot. Participants discussed the five prototypes in Workshop 2 and in groups, ranked each based on weighing the feasibility, cost, dissemination, sustainability, and overall impact. The highest ranked intervention prototype was the video. After further discussion, Pacific community members decided to progress with co-designing both a video and written brochure that could complement the concepts discussed in the video, highlighted in the themes below.

Theme 3: digital media as an accessible health education tool

When discussing the different prototypes, Pacific community members emphasized the benefits of a video resource for being able to improve gout knowledge and dispel myths among patients, families, and the wider community. A video that could be available for Pacific gout patients to watch in the clinical setting, before or during appointments, to understand more about gout and urate-lowering therapy was suggested. Additionally, participants discussed how shorter snippets of this video could be posted online and shared via social media for a broader reach. One participant cautioned that for online health promotion, it would be essential to build audience trust to assure viewers that this was a reliable source, particularly as some concepts, such as risk factors, go against mainstream beliefs about gout:

> The video would be a great resource as we are in the age of technology—the future is social media. Pacific people are visual people that learn by seeing. (female, 65+ years, Samoan)

> Videos have quite a high relevance—there are a lot of Pacific people who are using social media and watch videos. (female, 35–64 years, Cook Islands Māori)

> Because gout is quite personal, it's not always something that you want everyone to know about. Having videos where you can find information would be good because this way it's one on one. Gout is not something you go bragging about, you want to learn about it quietly. (male, 35–64 years, Samoan)

> Videos are easy to update, very accessible to the majority of people. (female, 35–64 years, Tongan)

> I think it is also important to ask, would you trust this information on social media? It takes time to build trust and so who is giving this message? (female, 35–64 years, Samoan)

In co-design discussions regarding how information presented in a video format could be engaging, Pacific participants emphasized the importance of short, catchy commentary with a charismatic presenter that could hold people's attention. An animated format was suggested as an option to explain complex concepts of genetics and risk factors in simple, visual ways through diagrams and pop-ups:

> You definitely need a presenter that's charismatic, enthusiastic. Then you can present the facts in a visual, creative way. (male, 35–64 years, Samoan)

> A short video is good for the short attention span. Get something that can catch your eye. (female, 35–64 years Cook Islands Māori)

> We need the pop ups or animation graphics to hold attention. (female, 65+ years, Samoan)

> There are options to have an animated video (which would be good) for the whole family. If it is animated, there may be a high cost however it would be more sustainable and better reach. (female, 35–64 years, Samoan)

Theme 4: recognizing diverse Pacific audiences

Another key theme emerging from co-design workshops was the need for an education approach that catered to the diverse groups within Pacific communities. While the video resource was the highest ranked intervention prototype overall, discussions acknowledged differences in preferences for how information is delivered and what might work better for younger versus older age groups, such as visual and written material. The benefits of the brochure prototype were discussed, including its ability as a physical resource to be taken home and shared with family. On the other hand, some community members cautioned against relying on brochures, discussing their perceived low effectiveness and engagement. Ultimately, group discussions settled on incorporating both a short, animated video and written material in a brochure format to recognize different levels of accessibility. Resources were discussed as needing to be available both in English and different Pacific languages to maximize access:

> Having a brochure as a resource is more relevant in the long-term, it can be digitised and if it is appropriately developed, it can be straight to the point. (female, 18–34 years, Samoan/Tongan)

> There's a lot of brochures out there. Many, many, many, many of them. If we were very true and honest on this, do we need to add to the information that is out there? (female, 65+ years, Samoan)

> I still feel like a brochure is needed to accommodate/complement the video especially for different generations. (male, 35–64 years, Samoan)

> I think the real message will happen when we come to the different languages. We have the messages now but now we have to go to the different level with the diverse island groups, and these messages will be explained different but needs to main the same key points. (female, Niuean, 65+ years).

After reviewing updated prototypes of the video and brochure resources in Workshop 3, participants had further discussions, both related to content and presentation style, to ensure they would be accessible. Discussions included ensuring a balance between engaging visuals and sounds and ensuring the key messages could be clearly understood:

> One thing about the colours, I thought it was a really great video, but from an accessibility point of view, we need to check the colours contrasting against the background because when it says to take your allopurinol everyday…it was kind of hard to read for some of us. (female, 18–34 years, Samoan)

> Just listening to the presentation and watching the animations, the background sound was a bit too loud and can be distracting. The music can distract some of the messages and pictures, so maybe turning it down a bit and not as loud. (female, 35–64 years, Tongan)

Theme 5: community ownership of co-designed resources

Pacific participants in this study shared positive experiences of being part of a co-design journey and were proud of the resources they had co-developed (see Supplementary A for final resources). Discussions in the final workshop centred on their reflections as to how these resources represented gout and Pacific people in an engaging, interactive way. Participants spoke highly of the co-design journey they had been on, and the progression from identifying research questions, through to the co-development of resources:

> I loved it, I think we have come from such a long way from writing ideas to now having the Pacific gout video and brochure. Great work everyone. Very upbeat and loved the messaging, but even today you know I learnt so much more about gout, you got the timing down perfectly. (female, 35–64 years, Samoan)

> I really like it visual wise, the movements, the colours, the Pacific designs, it really had a good feel to it. I do like the pun and humour as well. (male, 35–64 years, Samoan)

> Overall, it looks amazing when we have been on this journey since the beginning from when we decided (to do research) on gout and you see what we have done here in terms of the video and brochure, it is really incredible. (male, 35–64 years, Samoan).

Discussion

This qualitative study aimed to co-design an education intervention for Pacific patients and communities in NZ. Three co-design workshops were undertaken with PPHAG and PPBRN, reviewing current gout resources and developing prototypes for new approaches. Key findings from the study included a disconnect between existing resources and the needs of communities, Pacific approaches to improve gout knowledge, strengths of video resources, recognizing diverse Pacific audiences, and reflections on the co-designed resources. This study contributes to the lack of literature on the processes to co-design health interventions and specifically among Pacific communities.

This study found that current gout resources and education approaches were not meeting the needs of Pacific gout patients and communities. Discussions covered how the content and presentation of existing resources made it difficult for Pacific people to engage with and understand messages. A qualitative study by Davies *et al*. (2014) reported similar findings, whereby Indigenous Australian participants viewed existing hepatitis B resources as being too detailed and medical, making concepts feel foreign and difficult to relate to. While the importance of language translations was emphasized, Indigenous participants recognized that resources need to go beyond this and incorporate contextual and cultural factors (Davies *et al*. 2014). This need became clear in discussions, where non-Indigenous health professionals described the appropriateness of using an analogy on local animals, such as snakes and crocodiles, for hepatitis B education (Davies *et al*. 2014). On the other hand, Indigenous community members discussed that local animals are often hunted as food and so using them to describe sickness would not be effective. To ensure that health education materials connect with and are relevant to the communities they are intended to benefit, it is important that such groups are involved and have ownership in the development (Crengle *et al*. 2014).

A move towards health resources in more visual and video formats was identified as a key opportunity in this study. Pacific participants acknowledged the increasing influence of the digital age and how complex health concepts can often be better explained with the aid of visual multimedia methods. A pilot study by McElfish *et al*. (2019) similarly recognized this opportunity, codeveloping a culturally appropriate glucose monitoring video for Marshallese patients in Arkansas, USA. Researchers collaborated with Marshallese community members and health professionals, aiming to increase self-efficacy and knowledge related to glucometers. Results of a pre- and postintervention survey with 50 participants highlighted significant increases in self-efficacy and confidence in both knowledge and usage of glucometers (McElfish *et al*. 2019). For the 20 participants that returned to the clinic for a follow-up visit, a significant decrease in A1C levels was also found compared to preintervention levels (McElfish *et al*. 2019). While this suggests that video interventions can be effective for Pacific people, participants in the present study also considered diversities in how people access information. Sium *et al*. (2017) argue that written health materials and resources have continued relevance in the digital age, considering those who may not have ready access to the internet and challenges related to digital literacy. Therefore, multipronged approaches that combine both written and visual formats might best support equitable health education across communities with diverse needs.

Co-designing a video and brochure for Pacific gout patients and the wider community was the key outcome of this research project. Participants led each phase of design and review, emphasizing their positive views not only of the finalized resources but also of the entire co-design journey. The Pasifika Prediabetes Youth Empowerment Programme is a project that similarly utilized participatory and co-design methods for health education and empowerment (Firestone *et al*. 2021). Forty-one Pacific youth in two communities in NZ co-designed and subsequently led a community-based intervention programme to reduce prediabetes risk in their communities (Firestone *et al*. 2021). A small exploratory study with 32 Pacific and Māori adults (mean age 33.3 years) who were at high risk of developing prediabetes took part in the programme, which involved weekly meetings, fitness activities, and educational cards (Firestone *et al*. 2021). At the end of the 8-week intervention period, significant positive changes were recorded for weight loss and a reduction in waist circumference (Firestone *et al*. 2021). Such findings indicate the effectiveness of co-designed health interventions and are supported by positive findings of a scoping review focused on Pacific co-design projects in health (Tu'akoi *et al*. 2025). While interventions developed by the communities they are intended for can be more culturally appropriate and relevant, these processes must be evaluated to ensure effectiveness. A future study in this research project is therefore assessing the effectiveness of the Pacific resources co-designed in this research on people's knowledge of gout. Evaluating the acceptability and impacts on knowledge and behaviour in the wider Pacific population will be critical to ensuring the resources remain responsive to community needs.

A notable strength of this study is its Pacific community ownership. From identifying the original health issue of gout to critiquing current education approaches and subsequently co-designing new resources, Pacific communities have been at the forefront. This process has prioritized lived experiences and views of communities that are often researched 'on', rather than 'with'. The PPHAG and PPBRN groups involved in this research were self-formed, and they invited researchers to attend their workshops and talk about research. As a result, the composition of these groups was based on community and family networks of the original members, which may have shaped the perspectives represented. The co-design process reported here therefore reflects the views of the specific Pacific community networks involved and should not be assumed to represent the diversity of all Pacific Island countries, which each have unique historical, linguistic, and cultural contexts. Participation across workshops also varied based on individual availability, which may have affected the continuity of feedback. Further co-design may be required to adapt these resources to different contexts and support ethnic-specific approaches.

Another limitation is that a range of interventions were identified by the groups, but funding and timeline limitations meant that the ranking process was essential in order to balance perceived effectiveness with feasibility. Broader support from external organizations is being sought to implement other key avenues identified by the Pacific community groups that could not be included in this research project. Co-design methods, although increasingly called for in place of traditional, top-down intervention development processes, do not necessarily result in uptake or implementation by health providers or organizations. This is a continuing challenge, and therefore, partnerships across both community and health providers are essential to ensure relevance and feasibility in both settings.

Practical implications

Findings from this study highlight a need for health organizations and general practices to reconsider how gout education is delivered to Pacific patients in the clinic and more broadly. Currently, the provision of effective gout education is constrained by short consultation times, a lack of appropriate gout resources, and the proliferation of misleading information (‘Ofanoa *et al.* 2025a, 2025b). The resources co-designed in this study can be used by health professionals as tools to support patients’ understanding during clinical consultations, presenting key gout concepts in simple, visual ways and helping to overcome potential language barriers. Participants in this study also suggested playing the videos on the television screens in waiting rooms and reception areas, with brochures displayed nearby to support self-paced learning. The resources can also be integrated into broader health education initiatives, such as at churches and community events and during cultural weeks. The use of these co-designed, Pacific-led resources is intended to support more culturally responsive gout care.

Conclusion

This qualitative study highlighted that existing gout education materials do not meet the needs of Pacific patients and communities in Aotearoa NZ. Through a community-led co-design process, Pacific community members in the PPHAG and PPBRN groups created culturally grounded video and brochure resources, aiming to present gout information in a simple and engaging way that is accessible for diverse needs. The positive experiences of participants throughout the co-design journey highlight the value and benefits of prioritizing community voices. Continued partnership with Pacific communities, alongside evaluation of these resources in practice, will be essential to strengthening equitable and effective gout care.

Acknowledgements

We acknowledge the PPHAG and PPBRN groups who led and participated in this research. We acknowledge our advisory committee of Pacific, Māori, and gout experts who provided advice and reviewed the final resources. We also acknowledge the Pacific graphics designers who were involved in helping the community’s ideas come to life.

Author contributions

Siobhan Tu’akoi (Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Validation, Visualization, Writing—original draft), Samuela ‘Ofanoa (Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Validation, Writing—review & editing), Melenaite Tohi (Data curation, Investigation, Methodology, Visualization, Writing—review & editing), Alvina Pauuvale (Data curation, Investigation, Methodology, Writing—review & editing), Maryann Heather (Conceptualization, Funding acquisition, Investigation, Supervision, Writing—review & editing), Hinamaha Lutui (Conceptualization, Investigation, Supervision, Writing—review & editing), Rose Lamont (Conceptualization, Funding acquisition, Investigation, Methodology, Writing—review & editing), Felicity Goodyear-Smith (Conceptualization, Funding acquisition, Methodology, Supervision, Validation, Writing—review & editing), and Malakai ‘Ofanoa (Conceptualization, Funding acquisition, Investigation, Methodology, Supervision, Visualization, Writing—review & editing)

Supplementary material

Supplementary material is available at *Health Promotion International* online.

Conflicts of interest

None declared.

Funding

This work was supported by the Health Research Council of New Zealand, reference number 21/452, and Arthritis New Zealand, reference number 298.

Data availability

The data underlying this article cannot be shared publicly due to the privacy of individuals who participated in this study. The data will be shared on reasonable request to the corresponding author.

References

Braun V, Clarke V. Supporting best practice in reflexive thematic analysis reporting in Palliative Medicine: a review of published research and introduction to the Reflexive Thematic Analysis Reporting Guidelines (RTARG). *Palliat Med* 2024;**38**:608–16. https://doi.org/10.1177/02692163241234800

Crengle S, Smylie J, Kelaher M *et al.* Cardiovascular disease medication health literacy among Indigenous peoples: design and protocol of an intervention trial in Indigenous primary care services. *BMC Public Health* 2014;**14**:714. https://doi.org/10.1186/1471-2458-14-714

Cross M, Ong KL, Culbreth GT *et al.* Global, regional, and National Burden of Gout, 1990–2020, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. *Lancet Rheumatol* 2024;**6**:e507–17. https://doi.org/10.1016/S2665-9913(24)00117-6

Davies J, Bukulatjpi S, Sharma S *et al.* “Only your blood can tell the story”–a qualitative research study using semi-structured interviews to explore the hepatitis B related knowledge, perceptions and experiences of remote dwelling Indigenous Australians and their health care providers in northern Australia. *BMC Public Health* 2014;**14**:1233. https://doi.org/10.1186/1471-2458-14-1233

Firestone R, Faeamani G, Okiakama E *et al.* Pasifika Prediabetes Youth Empowerment Programme: learnings from a youth-led community-based intervention study. *N Z Med J* 2021;**134**:57–68.

Gérard B, Leask M, Merriman TR *et al.* Hyperuricaemia and gout in the Pacific. *Nat Rev Rheumatol* 2025;**21**:197–210.

Goodyear-Smith F, ‘Ofanoa M. Fa’afaletui: a Pacific research framework. *J Mix Methods Res* 2022;**16**:34–46. https://doi.org/10.1177/1558689820985948

Guillén AG, Te Karu L, Singh JA *et al.* Gender and ethnic inequities in gout burden and management. *Rheum Dis Clin North Am* 2020;**46**:693–703. https://doi.org/10.1016/j.rdc.2020.07.008

Health Quality & Safety Commission. 2021. *Gout*. Retrieved 3 February from https://www.hqsc.govt.nz/our-data/atlas-of-healthcare-variation/gout/

Hollis-Moffatt JE, Xu X, Dalbeth N *et al.* Role of the urate transporter SLC2A9 gene in susceptibility to gout in New Zealand Māori, Pacific Island, and Caucasian case–control sample sets. *Arthritis Rheumat* 2009;**60**:3485–92. https://doi.org/10.1002/art.24938

Israel BA, Eng E, Schulz AJ (eds) *et al. Methods in Community-Based Participatory Research for Health*. San Francisco: Jossey-Bass, 2005.

Lailatul Barik A, Purwaningtyas RA, Astuti, D. The effectiveness of traditional media (leaflet and poster) to promote health in a community setting in the digital era: a systematic review. *Jurnal Ners* 2019;**14**:76–80.

Lamont R, Fishman T, Sanders PF *et al.* View from the canoe: co-designing research Pacific style. *Ann Fam Med* 2020;**18**:172–5. https://doi.org/10.1370/afm.2497

Major TJ, Topless RK, Dalbeth N *et al.* Evaluation of the diet wide contribution to serum urate levels: meta-analysis of population based cohorts. *BMJ* 2018;**363**:k3951. https://doi.org/10.1136/bmj.k3951

Mann K, MacLeod A. Constructivism: learning theories and approaches to research. In: *Researching Medical Education*. John Wiley & Sons Ltd, 2015, 49–66.

McElfish PA, Rowland B, Riklon S *et al.* Development and evaluation of a blood glucose monitoring YouTube video for Marshallese patients using a community-based participatory research approach. *Policy Polit Nurs Pract* 2019;**20**:205–15. https://doi.org/10.1177/1527154419872834

Nutbeam D, Muscat DM. Health promotion glossary 2021. *Health Promot Int* 2021;**36**:1578–98. https://doi.org/10.1093/heapro/daaa157

‘Ofanoa M, Percival T, Huggard P *et al.* Talanga: the Tongan way enquiry. *Sociol Study* 2015;**5**:334–40.

‘Ofanoa S, ‘Ofanoa M, Tuakoi S *et al.* Interventions designed to improve uptake of allopurinol for gout treatment in Aotearoa New Zealand: a scoping review. *J Prim Health Care* 2022;**15**:48–58. https://doi.org/10.1071/hc22094

‘Ofanoa S, ‘Ofanoa M, Tu’akoi S *et al.* Health professionals’ perceptions of Pacific co-designed resources for Pacific gout patients. *Healthcare* 2025a;**13**:2089. https://doi.org/10.3390/healthcare13172089

‘Ofanoa S, ‘Ofanoa M, Tu’akoi S *et al.* Pacific community’s perceptions on how to improve uptake of urate-lowering therapy for Pacific gout patients. *Int J Equity Health* 2025b;**24**:91. https://doi.org/10.1186/s12939-025-02465-8

‘Ofanoa S, Tu’akoi S, Manako E *et al.* Gout, TikTok and misleading information: a content analysis. *Rheumatol Adv Pract* 2025c;**9**:rkaf126. https://doi.org/10.1093/rap/rkaf126

Ramsubeik K, Ramrattan LA, Kaeley GS *et al.* Effectiveness of healthcare educational and behavioral interventions to improve gout outcomes: a systematic review and meta-analysis. *Ther Adv Musculoskelet Dis* 2018;**10**:235–52. https://doi.org/10.1177/1759720X18807117

Sium A, Giuliani M, Papadakos J. The persistence of the pamphlet: on the continued relevance of the health information pamphlet in the digital age. *J Cancer Educ* 2017;**32**:483–6. https://doi.org/10.1007/s13187-015-0948-3

Slattery P, Saeri AK, Bragge P. Research co-design in health: a rapid overview of reviews. *Health Res Policy Syst* 2020;**18**:17. https://doi.org/10.1186/s12961-020-0528-9

Tamasese K, Peteru C, Waldegrave C *et al.* Ole *Taeao afua*, the new morning: a qualitative investigation into Samoan perspectives on mental health and culturally appropriate services. *Aust N Z J Psychiatry* 2005;**39**:300–9. https://doi.org/10.1080/j.1440-1614.2005.01572.x

Tu’akoi S, ‘Ofanoa S, ‘Ofanoa M *et al.* The processes and impacts of co-designed health interventions by and for Pacific populations: a scoping review. *BMC Public Health* 2025;**25**:2555. https://doi.org/10.1186/s12889-025-23795-w

Wang H, Yao Y, Lv X *et al.* Medication adherence and health empowerment in gout: a cross-sectional survey of patients. *Rheumatol Int* 2025;**45**:176. https://doi.org/10.1007/s00296-025-05915-2