

## Perspectives

# Engaging Māori with qualitative healthcare research using an animated comic

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## Abstract

This article reports an effective strategy for recruiting patients with asthma to a qualitative study using an animated comic advertised on social media. An ad spend of NZ\$432 on Facebook resulted in 101 study enquiries, and 27 participants taking part in the focus groups, of which 16 (56%) were Māori, the Indigenous Peoples of New Zealand. Representation of Māori amongst participants was over five times higher than their proportion in the local population (9.7%), resulting in data fulfilling the principle of equal explanatory power, an approach to research which can help advance Māori health development and address inequity. The success of this campaign is of particular interest for health researchers in New Zealand where Māori continue to be disproportionately affected by poorer health outcomes compared with non-Māori, particularly those with asthma. Approaches that better engage and support participation of under-represented communities in clinical research are of wider global interest. We reflect on the recruitment strategy and outcomes within a Kaupapa Māori framework, explore how this can be applied more widely in healthcare, and suggest direction for future study and implementation.

## Lay summary

We designed an animated comic to advertise a study for patients with asthma. This was shared locally with a Facebook ad. The approach was highly engaging with the public, and resulted in rapid recruitment. Interestingly, participation of Māori (the Indigenous People of New Zealand) was over five times higher than their proportion in the local population. Māori have poorer health outcomes and increased barriers to healthcare access compared with non-Māori, particularly those with asthma. Approaches which can engage and support under-represented communities to participate in clinical research are of wider global interest. In this article, we reflect on the recruitment strategy and outcomes, and suggest direction for future study and implementation.

**Key words:** community engagement, indigenous, Māori, qualitative methods, graphic medicine

## INTRODUCTION

New Zealand (NZ or Aotearoa) has one of the highest rates of asthma worldwide, affecting approximately one in eight adults (Lai *et al.*, 2009). Māori, the Indigenous People of NZ, are disproportionately affected; with a higher incidence of asthma, being three times more likely to require hospital admission, and having over five times the mortality rate compared with those of NZ European/Other ethnicity (Davidson and Sheikh, 2013; Health Quality & Safety Commission New Zealand, 2016). The principle of ‘equal explanatory power’ (EEP) is the concept of conducting research in a way which produces representative information for Māori health development to at least the same depth and breadth as that obtained for non-Māori (Robson, 2002). In populations where Indigenous Peoples are a minority group, EEP ensures enough data are collected to enable the same analyses as for majority group(s). The simplest method of following this principle in quantitative studies is to obtain equal numbers of Māori and non-Māori participants. This has the potential to provide useful, granular information about risk factors or disease by ethnicity, or test interventions that reduce health inequities at a faster rate (Reid *et al.*, 2017). EEP can also apply to qualitative research by giving a voice to minority groups facing inequity in a research topic (Reid *et al.*, 2017).

Attempting to engage and recruit volunteers from any demographic group at a rate above their representation in the population can present additional challenges. Multiple studies have reported difficulties recruiting Māori participants and acknowledge the limitations of their research as a result (Paine *et al.*, 2005; Mihaere *et al.*, 2009; Fink *et al.*, 2011). While adapting approaches to recruitment such as involvement of community representation and Iwi can be effective, this may necessitate significant additional resourcing and study duration (Mhurchu *et al.*, 2009; Pitama *et al.*, 2011; Rooney *et al.*, 2011). This may be prohibitive to studies with limited funding, therefore simple, cost and time-effective recruitment strategies which support the principle of EEP are of particular interest to healthcare researchers who work with Indigenous Peoples.

Cultural consideration is an ethical priority that improves outcomes, particularly when engaging with minority communities on health promotion, research and care. However, this is often done in a tokenistic way, such as by gathering feedback after all decisions have been made about a study’s design, and not acting upon this (Pandya-Wood *et al.*, 2017). The result is the

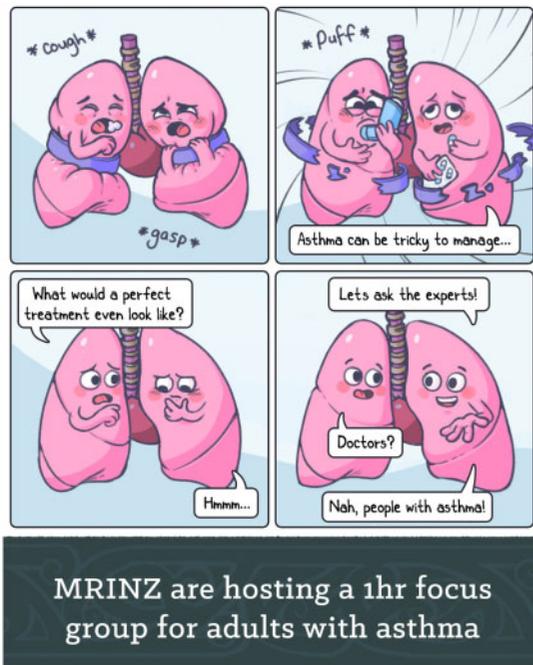
illusion of collaboration, with no true involvement or power given to the minority community. We present reflections on a small but interesting study that demonstrates how meaningful engagement with a minority community is possible without additional time or financial resources, and supported study outcomes.

The authors conducted a qualitative study using focus groups to explore patient preferences and priorities for how asthma is managed (Baggott *et al.*, 2020). A novel recruitment strategy was employed using an animated comic distributed via Facebook and by engaging with a local Māori asthma group. We found that the resulting representation of Māori amongst study participants was over five times higher than that of the local population. This was unexpected given that Māori are often underrepresented in research. Given that Māori people are disproportionately affected by adverse asthma outcomes and experience additional barriers to healthcare compared with non-Māori people, their perspective on asthma management has additional significance. The comic was developed with Māori recruitment in mind, but made available to the general public. Interestingly, non-Māori participants were recruited by the same method and achieved the numbers required to meet the study’s objectives, in addition to fulfilling the principle of EEP with minimal resourcing.

This novel strategy may have the potential to increase participation of hard-to-reach communities in clinical research. In this article, we reflect on the recruitment strategy and outcomes within a Kaupapa Māori framework, which is with respect for, and within the context of Māori cultural principles. Reflecting on any healthcare interaction within the culture(s) of the patients concerned is a valuable exercise, especially the more it may differ from our own. Finally, we discuss how practitioners might implement this approach in their own work, and direction for future study.

## METHODS

A four-panel animated comic (Figure 1) was designed to invite individuals with asthma to take part in a focus group study. This was designed collaboratively with a multidisciplinary study team, a Māori doctor and a Kaupapa Māori researcher who was involved with study design from its inception. The study had ethical approval from the Central Health and Disability Ethics Committee, who reviewed all study advertising material. The approved comic was distributed via the Facebook Ads platform to adults aged 18–75 years who used



**Fig. 1:** Preview of the animated comic designed to support study recruitment.

Facebook and lived within the Greater Wellington Area. The advertisement (ad) encouraged interested persons to enquire about the study via Facebook Messenger or by direct email.

Upon enquiry, the study team established eligibility through conversation by Facebook Messenger, email and telephone. The focus groups were held on five dates across three locations to maximize participation. Eligible individuals were invited to sign up for one of these. The ad was run in three pulses for a total of 21 days, informed by final attendance at these focus groups between pulses. A small financial koha (gift) of NZ\$50 was offered to support participants time and travel for taking part.

## RESULTS

The animated comic was shown to 33 554 people on Facebook for an ad spend of NZ\$432, which resulted in 101 study enquiries (89 via Facebook Messenger and 12 via email) from interested people with asthma in the Greater Wellington area. Average cost per study enquiry was NZ\$4.28, per sign-up was NZ\$9.60 and per participation was NZ\$16. A breakdown of the Facebook ad engagement is shown in Table 1, and of study enquiry outcomes in Table 2. Note that some engagement

**Table 1:** Overview of engagement on Facebook with the animated comic ad

Engagement metric	N
Video plays at 100% <sup>a</sup>	5307
Messenger conversations started	89
Email enquiries	12
Link clicks <sup>a</sup>	600
Reactions (e.g. 'Likes') <sup>a</sup>	64
Comments <sup>a</sup>	41
Shares <sup>a</sup>	25
Post-engagement <sup>a</sup>	8939
Reach	33 554
Average engagement on reach <sup>a,b</sup>	2.9%

<sup>a</sup>Engagement data for ad pulse 2 and 3 only, representing 18 days (86%) of the total campaign duration, or 24 979 of the people reached. This is due to data for ad pulse 1 (first 3 days of the campaign) not being available.

<sup>b</sup>(enquiries + link clicks + reactions + comments + shares)/reach.

**Table 2:** Study enquiry outcomes

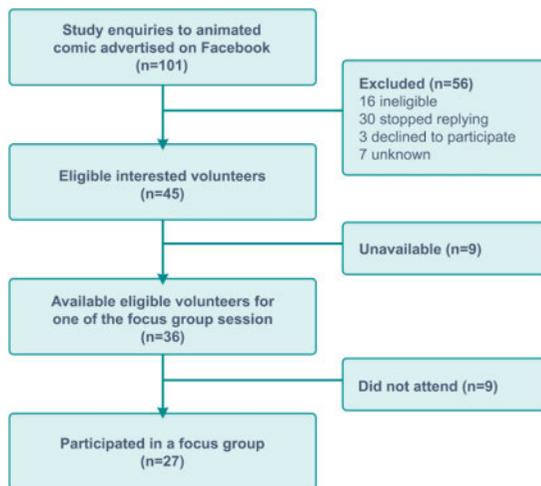
Study enquiry outcomes	N
Signed up	36
Unable to attend a focus group day/time/location	9
Ineligible	16
Did not reply	30
Declined	3
Unknown <sup>a</sup>	7
Total enquiries	101

<sup>a</sup>Not enough information available to categorize outcome.

metrics were only available for ad pulses two and three, which represent 18 out of 21 days of the campaign. Average engagement on reach has therefore been calculated for these with the available data.

In total, 45 volunteers were eligible to participate in a focus group (Figure 2). Nine were unable to attend on any of the available dates, and a further nine did not attend the session they had signed up for. The remaining 27 volunteers attended their chosen focus group. Eight volunteers signed up to take part following an indirect referral, having become aware of the study via another person who had seen the ad. This included five Māori volunteers who were recruited with the assistance of Tū Kotahi Māori Asthma Trust (a Māori-led group supporting the needs of Māori with respiratory disease in the community) at a local marae (a community meeting place); and three volunteers who heard about the study via a friend.

Demographic data for the 27 participants who attended a focus group is displayed in Table 3. Sixteen



**Fig. 2:** Recruitment flowchart.

participants identified as Māori (56%), 10 as New Zealand European (37%) and 2 as Asian (7%). Eighty-five percent of volunteers were female.

## DISCUSSION

This campaign demonstrated that an animated comic strip distributed to a general audience on Facebook was able to reach and engage New Zealanders with asthma, supporting recruitment to a focus group study in a timely and cost-effective manner. Further to this, over half of study volunteers identified as Māori, a significant representation above a constitution of 15% of the New Zealand population (2018 census) and 9.7% of the Wellington region population (2013 Census) ([Stats NZ Tatauranga Aotearoa, 2018, 2013](#)). Even if participants recruited by Tū Kotahi Māori Asthma Trust were excluded, Māori would still represent 40% of the remaining participants.

We consider below potential factors contributing to this outcome within a Kaupapa Māori framework.

### Study design

Numerous aspects of the study design and conduct may have been appealing to Māori in line with Māori cultural principles. The ad spoke of ‘people with asthma’ as being the experts of their own condition whose involvement could help design the ‘perfect treatment’. Such wording was chosen to align with a tuakana teina model of learning (one form being where a more-expert person teaches a less-expert person), and the concept of rangatiratanga (leadership). It was made clear that this research was to be conducted via focus groups which we

**Table 3:** Participants’ demographics

Characteristics	N = 27
Sex, N (%)	
Female	23 (85)
Male	4 (15)
Age—years	
Mean	37.1 (15.3)
Range	19 to 67
Ethnicity, N (%)	
Asian	2 (7)
Māori	15 (56)
(Māori + another ethnic identity)	11 (73)
NZ European	10 (37)
Highest level of education, N (%)	
High school	3 (11)
Some college	8 (30)
Three or more years at college or university	16 (59)
Smoking status, N (%)	
Current smoker	8 (30)
Ex-smoker	9 (33)
Never smoker	10 (37)

thought would appeal to Māori for various reasons including: valuing voices, opinions and stories of participants as valid and important information sources (respecting and enhancing mana; a person’s prestige, influence and authority); and sharing stories and collaborating with others in safe spaces (whanaungatanga and wānanga). Focus groups also fit with the Māori concepts of kōrero (conversation/narrative) and hui (gathering) as important aspects of community development ([Ware et al., 2018](#)).

After attending a focus group, several participants messaged the study team speaking positively about their experience participating in research in a group setting. One person specifically referred to their focus group as a ‘hui’ during the session they attended, placing the group-based interaction into Te Ao Māori (the Māori worldview) through use of this term.

A small koha was offered to participants in gratitude for their efforts in taking part, acknowledging the value of sharing their experiences, and costs in time and transport which may be involved when taking part in a study. Importantly, we gave due consideration to the amount offered so that it was not too great as to be coercive, nor too little that it could not cover reasonable expenses of participation. The authors’ research institute takes guidance on such decisions from external review by HDEC, the Research Advisory Group-Māori (RAG-M) at the local hospital, and a Kaupapa Māori health research expert.

Importantly, the research was ‘tika’ (right, meeting Māori ethical standards) (National Ethics Advisory Committee—Kāhui Matatika o te Motu, 2012). Several systematic reviews have identified distrust of healthcare research as an important factor limiting the participation of minority groups (Schmotzer, 2012; George *et al.*, 2014). While researchers cannot undo past abuses of trust and unethical conduct of others in the field, such as the Tuskegee Syphilis study in the USA; they can engage and collaborate with communities to design and conduct research in an acceptable way which tackles relevant issues in ethical ways and builds trusting relationships (Scharff *et al.*, 2010; Fisher and Kalbaugh, 2011; Fitzpatrick *et al.*, 2016). The consolidated criteria for strengthening the reporting of health research involving Indigenous Peoples (CONSIDER statement), is a checklist intended to support the advancement of Indigenous health outcomes (Huria *et al.*, 2019). Although developed for reporting research, consideration of this checklist at the planning stage of research can inform ethical design and constructive collaborations with Indigenous communities.

### Community setting

Focus groups were conducted in various community locations to enable access for participants, including one held in a local marae facilitated by working with a local community group (Tū Kotahi Māori Asthma Trust). Conducting research in a convenient community setting and involving community groups is recommended for research involving Indigenous Peoples, as it can promote trust, improve access to research and mitigate the asymmetry in researcher–community relationships (Holzer *et al.*, 2014; Reid *et al.*, 2017). Additionally, conducting focus groups in a familiar setting can put participants at ease and support open discussion for quality qualitative data (Liamputtong, 2011).

### An engaging medium

Graphic Medicine is a multidisciplinary field which explores the application of the comics medium to the discourse of healthcare (Green and Myers, 2010; Czerwiec *et al.*, 2015). Comics have been effectively used to support healthcare communication and practice, such as supporting patient understanding of and adherence to discharge instructions in the emergency department (Delp and Jones, 1996), reducing disease stigma by engaging communities in health education (el-Setouhy and Rio, 2003) and in facilitating adherence to treatment for children of immigrants with limited local language skills (Tjiam *et al.*, 2012). More recently, comics

have been effectively used in artist-scientist collaborations such as that of Toby Morris and Siouxsie Wiles (Morris, 2020) to engage the public with scientific and health concepts such as ‘social distancing’ and ‘flatten the curve’ during the COVID-19 pandemic (Kearns and Kearns, 2020). This has supported behaviour change on a mass scale, high compliance with lockdown measures, and rapid elimination of community spread of COVID-19 (Cousins, 2020). An online public health survey conducted during the first nationwide COVID-19 Level 4 lockdown in NZ found that a strategy which used comic illustrations to promote the survey was more effective than one using the research institute’s logo. The comic strategy had 27% more engagement on social media, 27.6% more responses from Māori and 33.0% more responses from Asian respondents, demonstrating a better ability to engage both generally, and amongst minority ethnic groups (Kearns *et al.*, 2020). These examples highlight how the comics medium can be used to engage diverse and hard-to-reach groups with health information and interventions in different global settings.

The animated comic designed for our research featured a pair of lungs as characters rather than people; in this way they could visually represent individuals with asthma from any demographic. Simple abstract characters can be more universal, allowing any viewer to project their identity and ‘see themselves’ in the visual material (McCloud, 2017). This is a particularly useful technique when designing resources for heterogenous audience demographics, as most public audiences will be. Comics present related images and text in sequence to create a narrative or story. The four-panel comic presented the lung characters in a likely relatable situation for people with asthma; an asthma attack, which may have helped these people resonate with and respond to the ad when distributed to a general public audience. The lungs declared the viewers experiences of living with asthma as important (recognizing their mana), and invited them to contribute through dialog (kōrero) in a group situation (hui). This promoted core aspects of the study which were culturally consistent with a Kaupapa Māori approach, and this empowerment may have encouraged people to participate.

‘Engagement’ on social media is a measurement of people interactions with a piece of content such as ‘liking’, commenting or sharing it within their social spheres. In 2019, the average engagement with Facebook posts across all industries was 0.09% (Rival, 2019). For targeted advertising on Facebook, an engagement rate of 0.5 – 0.99% has been described as average engagement, and 1 – 2% as good engagement. Despite no targeting, ‘average engagement on reach’ (as

described in Table 1) for this comic recruitment ad was high at 2.9%. This describes general public engagement however, and the key outcome for this study was enquiries from interested people with asthma. Given an adult asthma prevalence of 12% in New Zealand, only about 4026 who saw the ad might have had asthma (Lai *et al.*, 2009). This suggests a study enquiry rate of 2.5% from people with asthma, indicating that the ad was not just engaging for a general public audience, but specifically highly effective at engaging people with asthma. Importantly, this approach did not rely on a patient or volunteer database which can be an expensive approach where available, and skew participation through selection bias.

### 'Social' media factors

The 'endorsement heuristic' is the idea that one tends to agree with and trust information that has been endorsed by many others. On social media, public engagement with content can be seen in the form of interactions such as reactions, comments and shares. These metrics act as a form of social endorsement which can help people determine trustworthiness of content (Borah and Xiao, 2018). Recent research has demonstrated that people can place greater importance on the endorsement of a trusted individual than the credibility of the source of information (Sterrett *et al.*, 2019). When social media users engage with content, e.g. by liking or commenting on it, that content is more likely to be promoted to friends and whānau (the Māori term for family) in their social network who then view this in the context of a trusted individuals reaction instead of neutrally. Social media therefore rewards content which positively engages, compounding the value of these interactions.

An ad on Facebook may only be seen for a fraction of a second as a user scrolls through their 'feed', a column of vertically stacked posts common to many social media platforms. This presents a small window of opportunity for a viewer to notice and comprehend an ad. Visuals can communicate a message in a fraction of a second (Endress and Potter, 2014), and social endorsements on these can play a key role in a user's initial interest, trust and decision to engage. As metrics of engagement accumulated publicly on the focus group ad, this may have enhanced viewers perception of the media, and likeliness of engaging. Eight of the 27 (30%) participants had been referred to the study by 'word-of-mouth' which is facilitated by the social features of Facebook including commenting and tagging other users. These factors extended the ad's reach through the social networks of interested persons who interacted with it, a unique aspect of advertising by social media. It

is easy to imagine how visible public social endorsement from trusted peers and community members might support other aspects of healthcare such as health promotion and screening activity.

### Centering Te Ao Māori

We aimed to centre Te Ao Māori (the Māori worldview) in the recruitment strategy. Below the animated comic text provided further details about the study. This was presented on a dark background with a subtle koru-inspired (fern-frond) motif. The art was designed with internal feedback including the perspective of a Māori doctor, and approved externally by the local HDEC. Cultural adaptation of patient information materials can support healthcare access for minority groups (Hölzel *et al.*, 2016). This may include modification of language, visuals and method of distribution amongst other factors (Andrulis and Brach, 2007; Hölzel *et al.*, 2016). As such, including a koru design may have resulted in greater receptiveness from a Māori audience. This may also have reduced receptiveness from a non-Māori audience. A 2011 study of heart disease in New Zealand conducted with a Kaupapa Māori approach, reported that using Māori motifs and language in study materials had confused some eligible non-Māori recipients who thought the study was only recruiting Māori participants (Pitama *et al.*, 2011). However, this did not appear to be true here as non-Māori also responded to the ad and participated in the research.

### Limitations

We note that the campaign struggled to recruit males with asthma, who represented only 15% of participants. This may suggest lesser interest amongst adult male New Zealanders towards focus group studies, the ad design, or another aspect of the general recruitment strategy. The metrics available and small scale of the study cannot produce statistically robust conclusions as to the causative variables for these retrospective observations. However, we feel it is worth reporting them as a proof-of-concept demonstrating that recruitment fulfilling EEP can be efficiently achieved in small scale studies. Study recruitment materials and advertising approaches determine the population who discover, and thus can possibly take part in a study. It is therefore important to develop evidence-based literature for this oft-neglected aspect of research.

### CONCLUSION

An animated comic designed with consideration of the patient experience, advertised through social media in

conjunction with community group engagement, was a simple, effective and resource-efficient approach for recruiting patients with asthma to a qualitative study. Of note, this engaged a high proportion of Māori participants, a group who are often underrepresented in clinical research and disproportionately experience adverse asthma outcomes. Comics shared on social media may have wider potential to engage under-represented communities with healthcare beyond the setting of research, such as for health promotion activity. We are encouraged to further explore comic media in communication materials and recruitment approaches in Aotearoa, designed with consideration of Kaupapa Māori principles. We emphasize the importance of collaboration between healthcare professionals, experienced artists and members of the community(s) a resource is intended for.

## AUTHORS' CONTRIBUTIONS

C.K. wrote the original manuscript draft and edited. C.B., M.H. and A.R. reviewed and edited. C.B. conducted the research this article describes the recruitment strategy for, under the supervision of W.L. and J.F. R.B. supervised writing of this article.

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## ETHICAL STATEMENT

The study had Ethical approval from Health and Disability Ethics Committee (19/CEN/52), and was registered with the Australian New Zealand Clinical Trials Registry (ACTRN12619000601134).

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## CONFLICT OF INTEREST STATEMENT

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