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RESEARCH ARTICLE



Māori food culture and wellbeing on TikTok: a content and thematic analysis

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ABSTRACT

We examined content posted on TikTok on the topic of kai Māori (traditional food and associated customs of the indigenous people of Aotearoa New Zealand) to inform strengths-based approaches to health promotion in Māori communities. We conducted a content analysis of 100 unique TikTok videos labelled with the hashtags #kai and #Maori and coded content characteristics and viewer engagement for each video. Twenty foods were determined to be key Māori identity foods from this analysis. We also undertook a reflexive thematic analysis of the content of all videos and user engagement from a sample of 40 videos. Three themes relating to the value of kai Māori were identified: Mauri ora (kai as an expression of pride in Māori identity), Ahikā kai (a means of keeping traditions alive) and Tuhononga (a means of connecting with Te Ao Māori). Māori used TikTok to celebrate Māori identity by sharing and discussing content about kai Māori that was informative and often humorous or self-deprecating. Health promotion in Māori communities should draw on the values of kai as more than food. Kai has an important role in strengthening wellbeing through facilitating cultural connections and linking healthy lifestyles with traditional practices like collecting seafood.

Glossary of Māori words: Ahikā kai: keeping Māori traditions alive; Ahuriri: Napier, Aotearoa New Zealand; Aotearoa NZ: Aotearoa New Zealand; aroha: love; atua: deity, ancestor; ehe: e hē: an expression of no in Ngāi Tūhoe Iwi [tribe] dialect; hāngī: food cooked in an earth steam oven or gas steamer; he kai reka tenei: this food is yum or sweet; he tīno reka: very yummy; he reka: yum, sweet; huhu: huhu grub, *Prionoplus reticularis*; kai: food; kai Māori: traditional food and associated customs; kaimoana: food from the sea including fish and shellfish; kaitiaki: custodians, guardians; kānga wai/ kānga pirau: fermented 'rotten' corn; kamokamo: squash, vegetable marrow; kao: no; karakia: blessing, giving thanks; kare: an endearment; karengo /parengo: seaweed; kaupapa Māori: a Māori approach, Māori philosophy and principles guide practice; kia ora: hello, greetings, thank you; kina:

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sea urchin; koro: grandfather; kumara: sweet potato; kupu: word; kūtai: mussels; inanga: whitebait; mahinga kai: traditional food gathering place; mana whenua: Māori people who have customary authority and rights over identified land; manaakitanga: the act of showing support, caring for others; Māoritanga: Māori culture, way of life; mātua: parents; marae: a place of cultural significance to gather and meet; mauri: spirit, life essence; mauri ora: strong pride in having a unique Māori identity; meke: too much, good; mirimiri: to rub; moana: ocean; Ngāpuhi: northern iwi [tribe] of Aotearoa; noa: ordinary, unrestricted; ora: to be alive, healthy and well; Pākehā: New Zealanders of European descent; paraoa: fry bread; patu: traditional club used in warfare; paua: abalone; pikopiko: young fern shoots; pipi: shellfish, clam; puha: a sow thistle green; Rakiura: Stewart Island; rangatahi: Māori youth; rawe: excellent; reka: sweet; rēwana: fermented bread made with potato; Tā: Sir, Knight; tamariki Māori: Māori children; Tangaroa: the Māori atua (god) for the oceans; tapu: restricted, to be sacred, under atua protection; tautoko: show support; Te Ao Māori: the Māori world and its traditions; te taiao: the natural world; Te Whare Tapa Whā: a model of Māori health developed by Tā Professor Mason Durie; tēnā koe: greetings (speaking to an individual); tikanga: traditional customs or practices; tinana: body, physical self; tino reka: an expression of deliciousness; tino reka te kai: the kai is yum; tīti: mutton bird *Puffinus griseus*; toa: brave, accomplished, competent; toheroa: large clam; toroi / whakamara: a fermented dish of cooked mussels and puha; tuatua: shellfish, clam; tūhononga: connecting with Te Ao Māori; tuna: eel; tūpuna / tīpuna: ancestors, grandparents; wahine: woman; Whaea: Mother, Aunty; whakaiti: look down on; whakapapa: lineage, genealogy, ancestry; a central concept in Māori culture of identity, relation and connection to people, place, and culture; whānau: family group, including extended family; whanaunga: relative, kin; whanaungatanga: relationship building; whenua: land, ground

Introduction

The link between kai (food) and health is well established (Afshin et al. 2019). Regularly consuming a healthy balanced diet rich in fruits, vegetables, whole grains, lean proteins and healthy fats is associated with a reduced risk of developing chronic diseases (e.g. heart disease, diabetes and certain cancers) and living a longer healthier life (World Cancer Research Fund & American Institute for Cancer 2018; Afshin et al. 2019). But kai provides more than just nutrients and supports more than physical health. Kai provides nourishment for physical, social and cultural wellbeing. Kai enables connection through shared values, cultural experiences and identity (King et al. 2012; Moeke-Pickering et al. 2015).

Traditional concepts and tikanga (customary practices and values) influence how Māori, the indigenous peoples of Aotearoa New Zealand (Aotearoa), gather, prepare, share, and eat kai, and tapu (restricted, to be sacred, under atua [deity, ancestors] protection) and noa (ordinary, unrestricted) are fundamental cultural constructs that guide kai practices. For example, kai is considered tapu because it originates from te taiao (the natural world) and one of the atua and therefore cannot be safely or respectfully eaten

until restrictions are lifted by the process of *karakia* (prayer, giving thanks) (Phillips et al. 2016).

In contrast, *kai Māori* today has been strongly influenced by colonisation (Moeke-Pickering et al. 2015; Theodore et al. 2015; Moewaka Barnes and McCreanor 2019). Healthy *kai* is not readily available or affordable to all, nor is the knowledge of what good healthy *kai* is. Māori experience poorer health than Pākehā (New Zealanders of European descent), which is partly explained by differences in food consumption patterns (Health New Zealand Te Whatu Ora 2023). These patterns have been shaped by the ongoing impacts of colonisation that have resulted in intergenerational impoverishment, both in terms of financial and cultural wealth (Moewaka Barnes and McCreanor 2019; Thom and Grimes 2022). The New Zealand 1860-1872 land wars perpetuated by the colonial government led to widescale confiscation and loss of productive lands and businesses, which reduced many Māori to poverty. This forced alienation of land also impacted dietary practices as a result of losing access to *mahinga kai* (traditional food gathering places) restricting Māori from being able to freely gather, hunt or grow *kai* (Theodore et al. 2015; Moewaka Barnes and McCreanor 2019; Thom and Grimes 2022). This in turn has determined the quality of foods available to *whānau Māori* and the establishment of a unique post-colonisation *kai Māori* culture (Theodore et al. 2015).

In recent years, many Māori have been seeking ways to reconnect with Te Ao Māori (the Māori world and its traditions) and to decolonise or ‘re-indigenise’ their place in the modern world through *kai Māori* (traditional food and associated customs) (Smith and Hutchings 2024). This is reflected in the growing number sharing their experiences, learnings and journeys of *kai Māori*, indigenous food production practices and food sovereignty movements on social media platforms, e.g. ancestral diet challenges (@mahingakai, @teao_p), Māori organic (@Huaparakore) and food sovereignty movements (Karioi @WakatuVideo).

Due to the popularity of social media platforms and the growing interest in *kai Māori* in these digital spaces, we were interested in exploring how and why Māori talk about *kai* on these platforms to understand how *kai Māori* contributes to Māori identity and well-being. TikTok is a platform that allows users to upload and share video content they have created for others to discover and engage with through commentary and stitch videos (existing videos can be incorporated into new videos e.g. as responses). TikTok differs slightly from traditional social media where existing relationships, browsing history and popularity (followers) dictate the algorithms that determine the posts that appear in a users’ feed. In TikTok, users may be presented with content produced by any user regardless of popularity. TikTok is notorious for somewhat rapidly creating viral trends of songs, dances and challenges and is often cited with rejuvenating the popularity of old songs, ways of eating or doing things with a contemporary flavour. TikTok has over 1 billion active monthly users and is hugely popular with younger generations who create, share and engage with content of meaning to them, but due to the diverse array of global content, it has universal appeal for all ages. The objectives of this research were to: (1) gain insights of contemporary values and perspectives on *kai Māori* from TikTok users, (2) to inform how we can have conversations about it and (3) understand the potential to use social media to promote healthy food to Māori taking a kaupapa Māori approach (Smith 2012).

Materials and methods

Ethical considerations

Publicly accessible social media posts are regarded as part of the public domain. Through TikTok's terms of service, TikTok creators must choose to either restrict access to their content (e.g. private account) or consent to making their content publicly available to third parties. Informed by Favaro et al. (2017), Eysenbach and Till (2001) and the Internet Research Ethical Guidelines 3.0 (Franzke et al. 2020), for this study, it was assumed that creators who had public accounts intended to publicly disseminate their content, and in line other similar studies (Herrick et al. 2021; Li et al. 2021; Basch et al. 2022; Boatman et al. 2022; Purushothaman et al. 2022), consent from content creators was not considered necessary. Moreover, the purpose of this study was to focus on types of foods and how these are portrayed and discussed in the public domain, therefore, only posts and comments that were publicly available were analysed. As this study did not involve any interaction with content creators (e.g. human subjects), researchers applied for a low-risk ethical application through their institutional organisation prior to conducting any data collection or analysis (Massey University Low-Risk Ethical Approval: 4000026235).

Procedures

TikTok tailors content to users with a complex algorithm based on a range of factors including a user's interests that are specified when creating their account, their likes and browsing history. Because each TikTok user will generate a unique set of videos when using identical search strategies, and search results will vary from day to day as the algorithm learns more about the user, we set up two brand new TikTok user accounts in Aotearoa NZ to conduct the search and test for concordance between searches conducted via the two accounts one week apart. The implication of this is that our documented search strategy cannot be replicated by other researchers. Nevertheless, a protocol was established prior to the researchers conducting their searches.

Content analysis

In June 2022, using the hashtags #Maori and #Kai, two researchers independently conducted searches on 2 unique days within the same week to identify 100 unique TikTok videos. A hashtag is a keyword or phrase preceded by the # symbol. On social media platforms, hashtags are used to categorise and index content, which enables users to search social media for content that interests them. TikTok searches disregard macrons, which are common in the Māori language, so, for example, using #Maori also retrieves results for #Māori. When users search for specific hashtags on TikTok, they are presented with a feed of videos that have either used that hashtag or have related content. Each search returned a large number of videos therefore we selected the first 100 videos in the listed order each time. The video URL and title were extracted to an Excel spreadsheet and researchers then recorded the number of views, likes, comments, shares and total interactions (shares, comments and likes) for each. Each video was viewed and assigned codes relating to predetermined content characteristics including video title and subtitles, video length, format, type, theme and purpose of the video, use of music, spoken language or text, captions, kai Māori portrayed, inclusion of Māori cultural values, style of conveying the message (e.g.

humour, educational), and description of the main character, following the general approach of previous TikTok content analysis studies (Li et al. 2021; Basch et al. 2022; Purushothaman et al. 2022). We created a list of foods that were clearly linked with Māori cultural identity in the videos through the way content creators presented them and viewers responded to them, or because they had a Māori name (e.g. tīti [mutton bird]). We observed that some of these foods did not appear frequently in our 100 videos, so in July 2022, we undertook further searches in TikTok using these specific Māori food names as hashtags to capture additional information about how frequently these foods were represented in videos and how they were discussed. For each food hashtag, we reviewed all videos except where there were greater than 100 videos in which case we reviewed the first 100. We coded the content of these videos and recorded our personal reflections.

Thematic analysis

Reflexive thematic analysis (Braun and Clarke 2006; Braun and Clarke 2019) was used to explore how content about Māori kai is shared on TikTok and the links with health and wellbeing. We are Māori health researchers employed as University academics, with expertise in nutrition, dietetics, health promotion and education. We had varying levels of cultural connection while growing up, but both found ourselves able to personally relate to many of the experiences portrayed in the videos and much of the commentary. Our interpretation of the data was underpinned by our understanding that health and wellbeing are holistic, and kai provides more than nutritional sustenance. As such, Tā (Sir) Professor Mason Durie's Te Whare Tapa Whā provided a central theoretical model for our research (Durie 1998). In addition, the Social Ecological Model informs our understanding that food preferences are culturally, socio-economically and environmentally determined with influences occurring at personal, family, community and societal levels (Gregson et al. 2001). The concept of whakapapa and the process of whanaungatanga (relationship building) provided the lens through which we conducted our thematic analysis. During whanaungatanga Māori share information about where they come from, their connection to whenua (land) and connection to people, using appropriate tikanga to establish and maintain relationships (Wilson et al. 2021).

For this analysis, we included data about the content from all 100 unique videos reviewed as part of the content analysis, as well as the viewer comments from a random selection of 40 of these to explore how users were engaging with the videos. Data collated in the spreadsheets were transferred into a Miro board to allow us to collaboratively group codes, identify patterns and develop themes. Candidate themes were constructed using the codes and patterns identified in the complete dataset with thematic maps. We worked collaboratively to develop candidate themes that reflected patterns of meaning that we saw in the data.

Results

Content analysis

A total of 100 unique TikTok videos were retrieved for review. The repeat search conducted under the second user account one week later captured 98 of the 100 videos captured in the first search. This content was produced by 72 unique accounts (profiles),

Table 1. Summary of the 100 TikTok videos identified in June 2022 using #Maori #Kai.

Quantified impact	Min	Max	Median	Average	Total
Number of likes	23	118,100	1945	7479	747,860
Number of comments	0	895	70	97	11,904
Number of shares	0	1072	23	97	9,656
Number of total interactions*	30	119,153	2141	7694	769,420
Number of views	932	875,500	31,400	78,296	7,829,621
Number of hashtags (#)	2	17	7	7	742
Number of followers	41	263,400	11,000	346,657	3,465,998

*Total interactions are the total amount of shares, comments and likes.

some of which were produced by collaborations rather than individuals. A number of these accounts were highly influential as indicated by large numbers of followers and engagement with their content as measured by likes, comments and shares. The most influential profile had more than 260,000 followers and the highest-ranking video had more than 118,000 likes and 500 comments (Table 1). Content creators used 217 unique hashtags in addition to #kai, #maori or a specific Māori food name, with an average of 7 per video (Table 2). In total, 35 different foods featured in the sample providing a modern-day metric of the key foods that were presented or discussed as kai Māori. This included side dishes eaten with meals associated with Māori food culture; stuffing as part of a hāngī (food cooked in a traditional earth steam oven or contemporary gas steamer) and dough boys as part of a 'boil up' (a broth with inexpensive meaty bones, potatoes or kumara, greens and dough boys [flour dumplings]), fried and baked wheat breads; foods that are frequently served at Māori feasts (such as simple inexpensive desserts like steamed puddings and trifle); as well as contemporary twists on traditional foods and ingredients (Table 3). Two videos did not discuss specific foods but instead referred to tikanga relating to food in general (Table 3).

Twenty foods were determined to uniquely represent contemporary Māori identity. These included foods from our natural world that are foraged, gathered and hunted including puha (a sow thistle green), watercress and kaimoana (shellfish, kina [sea urchin] and paua [abalone]). Māori dishes or food preparations included boil up, hāngī, pungent fermented foods (kānga wai [fermented 'rotten' corn], toroi [a fresh or fermented dish of cooked mussels and puha]) and rewena bread – a sourdough made with a potato starter bug. A description of these identity foods and meals and examples of the way viewers engaged with the content are presented in Table 4.

Thematic analysis

We generated three themes relating to the value of kai Māori from the data. Theme one, Mauri ora, describes how the videos revealed kai as an expression of strong pride in having a unique Māori identity. Theme two, Ahikā kai, describes how TikTok videos provide an avenue for keeping kai Māori traditions alive. Theme three, Tūhononga, describes how TikTok enables Māori to connect with Te Ao Māori. We have provided examples of comments as written by TikTok users without alterations to illustrate our analysis.

Mauri ora: pride in our unique Māori identity

Mauri is the life force of a being or entity and is closely connected to the concept of identity. Ora is to be alive and in a state of wellbeing. Our analysis showed that TikTok

Table 2. Top 30 #hashtags used by content creators.

#hashtag	Number of times the #hashtag was used
#kai	100
#maori	86
#fyp	76
#nz	42
#kaimoana	24
#kina	20
#newzealand	19
#foryou	16
#seafood	15
#maorikai	13
#aotearoa	12
#foryoupage	11
#hangi	10
#foodtok	9
#viral	8
#yum	7
#food	7
#foodie	7
#kaimaori	6
#eat	6
#paua	6
#boilup	5
#fyp	5
#maoritok	4
#mussel	4
#fresh	4
#recipe	3
#yummy	3
#kiwi	3
#indigenous	3

content about Māori kai reflects mauri ora. In the content and user discussions generated by it, we saw positive expressions of pride in being Māori and enjoyment from seeing fellow Māori sharing Māori cultural practices. Māori pride and identity was portrayed both in the videos and in the responses to videos and was articulated by one user with the comment ‘*She’s Maori!!! Wahine toa xx*’. Māori pride was expressed warmly to other anonymous user accounts on the TikTok platform, and was acknowledged to be a value that also existed for whānau Māori in the real world. For example, in response to another video demonstrating how to make toroi a user writes: ‘*I’m Maori and I’ve never seen or heard of this.. but sheeeeeet this what my family getting for their birthdays ik they’ll love that!*’ Humour was frequently used in its many forms by content creators to tell Māori stories based on kai Māori with content discussions often referencing unique experiences that only Māori ‘insiders’ might understand and value: ‘*Marae antics*’ and ‘*When you know..you know..!* 🙏🙏🙏🙏🙏🙏’.

The story telling about kai Māori was frequently associated with nostalgia. Video content show-casing kai Māori provided an avenue for talking about what it was like to grow up as Māori and how this way of life was underappreciated at the time. A video about kaimoana being collected at the beach elicited the response ‘*I love, love, love this ❤️ So many kids our days miss out on the beauty of being taught to gather Kai 😊😊 Awesome!!!*’ while another user commented on video showing the ‘Ngāpuhi’ way to cook flounder for breakfast that emphasised its sublimeness with a popular Māori hymn soundtrack that it was ‘*Buzzy how normal eating a whole fish is 😂 my nanny*

Table 3. Foods that featured in the 100 TikTok videos.

Kai	Number of videos that featured the kai
Kina	25
Paua	17
Boil up	13
Hāngī	13
Paraoa (Fry bread)	13
Mussels	11
Crayfish	10
Puddings (steam puddings, trifle, golden syrup dumplings)	6
Raw fish	5
Oysters	5
Other meats (e.g. pork bun, pie, chicken, shish kebab)	5
Toroi and whakamara (e.g. fermented seafood with greens)	4
Prawns	3
Kānga wai / kānga pirau (rotten corn)	3
Flounder	3
Scallops	3
Kumara	3
Fish (smoked, and smoked fish dip)	3
Chowder	3
Potatoes (incl potato salad)	2
Stuffing (hāngī)	2
Fusion foods (toroi sushi, Māori penupenu)	2
Tuna (eel)	2
Venison	2
Rewana (bread and bugs)	2
Pork bones	1
Dough boys	1
Cockles	1
Leafy greens (lettuce/spinach)	1
Puha	1
Inanga (whitebait)	1
Huhu grubs	1
Seafood boil	1
Pig (head)	1

Two of the 100 videos did not present or discuss any specific food, they did however talk to the tikanga of kai e.g. manaakitanga of making sure nobody goes without and taking a patu into a whare kai.

would make this for breakfast with mash potatoes and salad when all i wanted was cereal 🤔😅'. Videos often referred to foods, cooking methods and knowledge about collecting traditional foods that had been learned from cherished older whānau members, with viewers often responding in a way that showed they identified and recognised aspects of the video as being distinctively Māori using text, punctuation and emojis: 'I'm sorry but you KNOW your nans frybread is elite when she cuts it with that bone handle looking butter knife 😊❤️'. This was particularly common with videos about distinctive pungent fermented kai that older generations prepared or loved, but younger generations were not so fond of, such as kānga wai, toroi and whakamara: 'I'm glad I'm not the only one 😊😅 my Koro would say moko it cleans your tinana..I was like even my organs want to escape the smell 😊😅😅'.

Māori identity was strongly linked with kaimoana. Many videos showed whānau and friends enjoying being out in nature collecting kaimoana, and later eating it. Users shared cherished childhood memories of whānau outings to gather kaimoana in response

Table 4. Description of identity kai Māori videos found on TikTok using kupu Māori #tags.

Kai	Number of videos*	Main focus of the videos
Hāngī	>100	Hāngī is a traditional way of cooking kai in an earth oven using steam. It is strongly associated with Māori identity and celebrating a special event and time spent with whānau. Videos focused on how a hāngī is prepared. There were many variations on how to build fires that super heat large stones or irons that are buried with the food creating the steaming effect. The collective efforts of people working together was frequently portrayed <i>'Kia ora, yup it takes a good few hours to cook through. Big process and many hands working together is best ❤️'</i> . Other videos shared variations of how to prepare a more convenient 'hāngī' such as cooking it in an oven or a slow cooker sparking debate about authenticity <i>'Ka Rawe best kai ever only if it's cooked in the ground!! Happy New Year whanau'</i> , but many responded that non-traditional methods enabled them to enjoy hāngī-style food when an earth oven was not available <i>'From the country to the city this is the only way I do mine because we can't just go dig a hole out the back 😂😂'</i>
Boil up	>100	Boil up is a way of cooking kai that signifies having a Māori identity and whānau. Large pots of basic, cheap meat and vegetables. The basic boil up consists of a cheap cut of meat such as pork bones, brisket, mutton neck chops, or tītī boiled in salted water until tender. Then starchy vegetables such as potatoes, kumara, pumpkin are added, then a large mound of green vegetables such as cabbage, puha, watercress, kamokamo, black nightshade, spinach or silverbeet are added to the top. Finally, dough boys (balls made from a basic dough of flour and water) may be placed on top of the greens and boiled until cooked. Variations in the way that a boil up was prepared stimulated conversations about the best way to prepare a boilup <i>'Had boil up last night. I love how you use the water inside the pot to make the dough boys, I'll def be doing it like this next time 😊'</i> and what should or could be added <i>'In my entire Maori life and living in Aotearoa, I've never had or even heard about onions being in a boil up 😊 But each to their own 😊'</i>
Kina	>100	Kina is a food of passion and Māori identity. Videos showed people joyfully slurping kina straight from the shell or from store-bought pottles while others show people bravely trying their first taste of kina. Users openly expressed either their love of kina <i>'Kia ora Whaea, Tino reka te kai'</i> , fond memories associated with it <i>'Omg I miss Kina so much .. my uncle used to dive in to get it, and us kids would sit and wait for him to bring it up'</i> , or that they personally don't like it <i>'I absolutely cannot stomach kina but love when everyone else enjoys them lol'</i> .
Paua	>100	Paua is a favourite Māori identity food. Videos focused on the joy of gathering and eating paua fresh from the moana or the delight of eating store bought cream of paua. Respect for traditional practices and the natural world which provided the paua was evident <i>'Start the dive with a karakia awesome brothers'</i>
Inanga (whitebait)	>100	Documenting going to the river setting up their nets at their favoured fishing spots and catching whitebait, including preferred ways to cook and eat whitebait characterised the videos. Many shared their fond memories of whitebaiting <i>'Meke catch 🍷🍷🍷'</i> and <i>'use to do that a lot with my Dad love whitebait 🍷'</i> . Others, however, expressed concerns of overfishing and debated the impacts of habitat destruction <i>'It's not the fishing, it's the loss of habitat from infrastructure & housing. You take away their habitats, you take away their breeding grounds!!'</i>
Kūtai (mussels)	100	Many videos demonstrated how they shuck and enjoy eating freshly gathered mussels or how they prefer to prepare and eat store bought ones. Variations in how mussels were prepared stimulated nostalgia <i>'oh maaan, this is the only way i like mussels! my nan used to make it this way 😊😂'</i> and the joy of sharing kai with others <i>'gotta love the pass the bucket swap a kai on te Moana ... ka mau te wehi 😊'</i> with many expressing how this practice is uniquely Māori <i>'Beautiful example of manaakitanga ❤️'</i>

(Continued)

Table 4. Continued.

Kai	Number of videos*	Main focus of the videos
Tuna (eel)	44	Tuna are significant to Māori and videos focussed on them in their natural habitat with some demonstrating how they gather and prepare tuna to eat. Conflicting viewpoints on whether tuna was to be eaten 'Smoked Eel one of my favourites 😊' or protected were passionately discussed 'Love our native tuna won't smoke them tho too precious to the waters'.
Rewena	32	Rewena bread (sourdough bread made with a potato bug) is another uniquely Māori food, with many videos demonstrating how to make it. Users engaged with delight 'rewaaaanaaaaaa 😊😊😊😊', often expressing a desire to learn how to make it too 'taking notes coz my mum never taught me this traditional method only yeast bread can't wait to try it out 😊😊'.
Puha	23	Puha grows wild throughout NZ and is an ingredient included in kai Māori dishes (boil up, toroi). Videos portrayed the joy of foraging for puha 'Ummm where your patch at Sis 😊😊😊', stimulating discussions how to prepare it 'mirimiri the puha the best trick in the book to make it sooooooooft as 😊😊👍👍 love this SM' and appreciation who they learnt from 'bless nans and koros for passing down these kai mahi 🙏🙏'.
Toroi / whakamara	20	Toroi is fermented dish of cooked mussels and puha. Videos demonstrated subtle variations (use of vinegar, adding onions, garlic, chilli and different ferment times) 'Nwah I just had memories of my nan in the kitchen 😊😊😊 I smelt it instantly 😊😊😊', while some debated the 'correct' name others just joyfully ate it 'Yeah my bro too much alright. Toroi/whakamara. He kai reka tenei'.
Titi/ muttonbird	20	Titi are a highly prized speciality sea bird that can only be collected once a year by mana whenua (Māori people who have customary authority and rights over identified land) of Rakiura (Stewart Island). Videos depicted people bragging about having some 'kare you've made hungry and jealous at the same time 😊😊😊' with others showing how they prefer to cook it 'I can smell the stink through the phone as I type this 😊😊😊 soooo good though.. chur chur'.
Huhu grubs	14	Huhu grubs are larvae of Huhu beetles found living in old rotten trees. Considered a delicacy raw or cooked videos showed people collecting 'Living off our whenua 😊🙏❤️ love it' and eating huhu grubs 'Mean brother. Tino reka all right 🙏🙏. Havent had any since i was a kid with my papa. I need to go do some hunting around.'
kānga wai / kānga pirau (fermented corn)	14	Kānga wai is a delicacy for Māori. Sacks of corn were traditionally left to soak and ferment in running water to preserve it. Most videos referenced the strong polarising smell of kānga wai that was closely tied to older generations of Māori 'I feel like this is one of those traditions that will die out. There's not a single rangatahi I know that genuinely likes it'
Pipis	12	Videos showed people digging in the sand with friends and whānau to gather pipis and how they liked to cook and eat them 'omg my dad use to do exactly this when we were kids. going back a good 40 years. great memories 4 me 😊😊😊'
Kamokamo	12	Kamokamo is a squash and most videos demonstrated how to grow, cultivate, or pick kamokamo 'Kamokamo will keep for months 😊 they turn yellow and get richer ... or eat them when they younger 😊' with some sharing how they like to cook and eat it 'kamokamo yum in the boil up'.
Tuatua	10	Videos displayed days at the beach collecting tuatua (an edible bivalve mollusc): 'Tangaroa providing the goods 😊' or cooking and eating them 'Makes me reminisce on childhood feeds, he reka!'
Karengo /parengo	10	Karengo /parengo are native seaweeds and videos showed how to gather, cook 'when I was little my grandad would take us out to grab parengo. he would put it in our boilup. yummy as ❤️' and eat it 'use to eat it straight from the rocks lol didn't know you had to cook em 😊'.
Toheroa	8	Videos portrayed people and tamariki at the beach digging for toheroa (a large edible bivalve mollusc), evoking nostalgia for many 'aww takes me back. My Nan loved Toheroas. She never wanted to share 😊😊', and

(Continued)

Table 4. Continued.

Kai	Number of videos*	Main focus of the videos
Tungangi (cockles)	6	sparked discussion regarding resource depletion 'we used to get them out Hokio Beach about 20 years ago ... hard to find them now 😞' Videos documented groups of people gathering cockles at the beach with others reminiscing 'Aww man I miss this life. Definitely brings back childhood memories. Thank you for sharing 😊'

*Some videos were counted under multiple kai categories because the video either included more than one food (e.g. kina and paua were often gathered together), were ingredients (e.g. puha in toroi and boil up) or used multiple hashtags.

to these. A number of TikTok users made comments referring to the gathering kaimoana as a rite of passage for tamariki Māori (Māori children), such as the sentiments reflected in this simple comment: 'Maori beach kid life'. A type of TikTok content known as 'mukbang' that involves content creators sharing videos of themselves simply eating specific foods was frequently represented in videos of Māori eating kaimoana, especially kina. Through these various forms of content, loving kaimoana was shown to be a defining characteristic of Māori identity. However, this could be the source of cultural dilemma for users who identified as Māori but did not enjoy eating kaimoana: 'I'm so plastic, I'm Māori but cannot for the life of me eat seafood 😞 love watching people eat it though!'

Ahikā kai: keeping our traditions alive

Ahikā kai refers to keeping the burning fires of Māori knowledge and traditions of kai alive. Māori may be engaging with kai content on TikTok to keep the ahikā kai alive by sharing their knowledge and who they learnt it from. These stories were frequently told with expressions using words, slang and emojis communicating aroha (love) for their tūpuna (grandparents, ancestors) or mātua (parents) who had passed on the knowledge of gathering, preparing, or eating kai, e.g. 'prickly puha my Nan showed me the same way 😊'.

For Māori, TikTok provides an accessible learning platform, where 'teachers' and 'learners' interact with each other to share their knowledge and experiences of kai. Many shared innovative approaches for adapting traditional practices to suit contemporary urban realities, e.g. how to make a hāngī (traditional earth oven) in a small suburban backyard, substitutions that could be made to hard-to-get traditional plant foods, or food preparation tips and tricks. The 'best' way to make a boil up inspired particularly robust discussion. There are strongly held traditions relating to the preparation of the boil up even though this is a post-colonial meal.

Adaptions to improve the healthiness of a boil up have been part of health promotion strategies targeting Māori for many years such as draining the fat off during cooking. This was a step too far for many 'The flavour went down the sink and rinsed lol never ever seen our nanny's and koros do this one' however, others were open to new ideas particularly when they were endorsed by someone with mana. For example, a video showing Tame Iti preparing a boil up by roasting his meat first to render off some of the fat was discussed as revolutionary: '😞😞😞 roast meat THEN add to pot!!! 😞😞😞 nek level boil up!!! looks amazing!!! he tino reka!!!!'.

The fluid exchange of knowledge and techniques often generated rich discussions of the best ways to prepare and eat specific types of kai, which were often humorous and

community-building. For example, one user commenting on a video presenting an unusual way of eating kina wrote *'I'm not even a huge fan of kinas but now you've made me crave kinas on toast'*. The negativity, trolling and abuse often seen on social media platforms were virtually absent in our sample. In contrast, the comments on these kai Māori videos were overwhelmingly positive, kind and generous, such as *'thank you taught me a life lesson I saved it so I can learn 🤔 never been taught so thanks much love'*. Occasionally comments were made that had a sense of a 'telling-off' when it was felt that the video owner had prepared or cooked a food inappropriately breaching tikanga. For example, in response to a video titled *'where do you eat your kina'* that showed a diver eating a fresh kina on the rocky shore some commentators wrote that kaimoana should never be eaten on the beach as a matter of respect to other beach users, or to 'Tangaroa', the Māori atua (god) for the oceans. Comments like *'no knowledge of Tikanga don't eat kaimoana [kaimoana] on the sea shore'* stimulated healthy debates on topics such as regional differences in tikanga, or the importance of re-educating with kindness and sensitivity when people did post content that was felt to breach tikanga. For example, a video that showed a Māori schoolgirl from Australia performing with a patu (traditional club used in warfare) in a kitchen stimulated a vigorous debate about this: *'EHE, Kao e whakaiti our tamariki, messge her directly, teach her, help our kids dnt problem them, shes at school obviously still learning 🤔'*.

Tūhononga: connecting with Te Ao Māori

Tūhononga refers to connecting with each other through shared values of kai Māori. Our analysis showed that Māori were sharing insights into the activities of their daily lives and kai Māori was used as a form of cultural communication to connect, build, and affirm group identity with other Māori users on TikTok. Users were engaging with kai Māori TikTok content to bond with each other through shared values, practices, and customs of kai Māori, which at times was used to assign meaning to one's position within Te Ao Māori.

Many videos showed simple snapshots of people gathering, preparing, or eating kai Māori. Users often engaged with the kai Māori content by celebrating the expression of their food culture, such as their desire to eat specific traditional kai often attributing this to benefits for holistic health and wellbeing: *'Mmm good kai for the tinana 😊'*. Other videos prompted viewers to share cherished memories of similar experiences and food practices: *'Tena koe Whaea, brings me back to my childhood..we lived of the whenua in Ahuriri ❤️♠️ NZ'*. TikTok thus provided a platform for Māori to connect with each other irrespective of geographical boundaries as well as a safe space to 'be Māori' and connect with others through shared food experiences that reflect Māoritanga (Māori culture, way of life). Discussions often created a sense of community with many praising content creators for sharing what they were doing with kai Māori *'I love all that you catch and cook, as a kid I had it all, now nothing living in Aussie 🇺🇸🇺🇸🇺🇸'* or felt it a safe space to explore their identity of what it is to be Māori when socially removed (brought up with Pākehā values, food and culture) *'That is amazing! I wish I was more in touch with my tipuna and my culture'*. Community was also built through sharing new ways to prepare traditional kai *'Try baking the kumara next time makes the world of difference and add baby spinach'* and the openness to seek and share cultural knowledge *'Kia*

Ora whanaunga, can you give us a lesson on what pikopiko to collect and when? Kia Ora my brother ❤️❤️❤️.

The topic of hāngī cooking in particular created discussions on the challenges creating cultural connection through traditional kai Māori in our modern lives. Videos showed hāngī making as a collective celebration of kai, bringing people together to prepare, share and connect with others through mutual enjoyment of traditional kai, often with a modern twist to suit contemporary realities (e.g. concrete pits in urban settings, steam hāngī cookers). Despite the physicality involved, videos showing preparation of hāngī pits or gathering kaimoana were not presented as physical activities (e.g. like going to the gym). Instead, these videos were used to share positive cultural experiences that replenish mauri (spirit, life essence) as Māori.

The unique cultural values and perspectives of Māori were also expressed through the way they portrayed interacting with te taiao (our natural world) when gathering kai. Videos demonstrated traditional practices and customs such as performing karakia to Tangaroa before collecting kaimoana and users engaged with the content reflecting the same sentiment expressing gratitude to the atua of the moana for their bounties: *'BOOOOOM blessed by the best Tangaroa 🙏🙏🌟🌟 #blackgold for the whānau*'. The importance of protecting the wellbeing of te taiao and employing sustainable gathering practices to safeguard it for future generations was also values woven throughout the TikTok content that featured sourcing kai directly from nature, and in user engagement with it. Although collecting kaimoana was seen as a rite of passage for tamariki Māori, users engaged to discuss the importance of Māori as kaitiaki (custodians, guardians) for the environment to ensure that physical sustenance was not prioritised over wellbeing of resources (e.g. sustainable resource management practices were maintained to avoid further depletion of resources (e.g. toheroa)) (see [Table 4](#)).

Discussion

Social media has become integrated into our modern daily lives, impacting how we communicate, share information, and connect with each other that transcends geographical boundaries. We were interested to explore how kai Māori was portrayed on TikTok to understand the place of kai Māori in relation to health and wellbeing for Māori in contemporary times. Even though many of the videos on TikTok were curated, they purposefully presented perspectives on kai Māori that were deliberately informative, humorous, and nostalgic, or simple snapshots into the lives and activities of Māori. We learnt that Māori were utilising TikTok to connect and learn from each other, as well as express pride in their identity through kai Māori experiences.

Food and food practices reflect social and cultural identities; through food, traditions, values, and beliefs are tangibly shared across generations (Almerico 2014; Reddy and van Dam 2020). Expression of food culture enables individuals to affirm their own cultural identity and distinguish themselves from other social groups (Almerico 2014; Reddy and van Dam 2020). Our analysis demonstrated that Māori were sharing and engaging with kai Māori TikTok videos which represented their unique cultural identity and resonated with them through shared experiences. Many videos showed people joyfully slurping up kina, demonstrating how they made their boil up, or the experience of getting outdoors to gather kai and collect kaimoana. There was tangible pride in sharing the

joy of eating kai Māori and their kai experiences with others as an expression of Māoritanga. Many would engage with the videos by commenting to tautoko (show support), provide their perspectives on the ‘right’ or ‘wrong’ way to do things, or share their fond and colourful memories, often jovially reflecting on similar food experiences that they had growing up or what they had been taught. TikTok videos about kai Māori created a space for cultural connection with a group that shares similar values and beliefs. Cultural connection contributes to wellbeing (Durie 2004) and TikTok offered a safe space to be Māori, build connections and find identity through engagement and dissemination of knowledge of kai Māori. Like other indigenous populations, having a strong and secure cultural identity is recognised as being central for maintaining good health and wellbeing for Māori (Durie 2004). Food is a form of cultural communication (Almerico 2014) and our analysis shows how TikTok can provide a platform for contemporary cultural nourishment.

The benefits of engaging in regular physical activity for good health and wellbeing are well recognised (Warburton 2006; Wicks et al. 2022). Regular exercise is associated with improving physical health and reducing the risk of developing certain diseases, improving mental health, wellbeing, and social connectedness (Warburton 2006), and being active outdoors in ‘greenspaces’ is proposed to amplify the psychological wellbeing benefits of physical activity (Wicks et al. 2022). Many of the kai Māori TikTok videos depicted people being physically active outdoors collecting kaimoana (kina, mussels, cockles, paua, etc), creating a hāngī or foraging for greens (watercress, puha). Collecting delicious kaimoana was frequently portrayed as a fun activity to do in beautiful surroundings with friends or whānau.

Our interest in using TikTok was to understand the place of kai Māori in relation to health and wellbeing for Māori in Aotearoa, with a view to identifying opportunities for Māori-centred health promotion. The TikTok videos provided valuable insight into the activities, perspectives and attitudes to certain food practices or new ways of doing things by Māori. Kai was presented and discussed as more than just food. Kai Māori was portrayed as a means of connection with and caring for others by sharing food resources, ideally in sustainable ways, which speaks to the cultural value of manaakitanga (the act of showing support, caring for others). There were also numerous videos of people preparing meals from scratch and describing the value of creating a meal and sharing it with others. As nutrition researchers, we found it interesting to observe how conventional nutrition recommendations were not always favourably received. For example, adapting foods that have a very strong cultural identity, such as boil up, to be healthier may require endorsement from respected Māori leaders or influencers. While health promotion recommendations to skim off the fat while cooking the boil up were often met with ridicule, Tame Iti roasting his meat to remove excess fat was positively received. From a nutrition perspective, this would achieve a similar desired outcome as the previous example (reducing the fat content of the finished boil up) but with greater apparent acceptability. We therefore believe that TikTok has promise as another tool for health promoters, particularly if evidenced-based messaging is prioritised in collaboration with Māori kai influencers to creatively deliver key messages that nudge viewers towards healthy eating behaviours (Hawkins et al. 2021). Our insights suggest that messaging that draws on shared cultural experiences and ‘insider’ jokes to disseminate health messages could improve the likelihood of such messages resonating more effectively with

Māori. Our research also suggests potential opportunities to link healthy lifestyles that promote wellbeing with traditional practices such as collecting healthy kaimoana.

TikTok is also used to promote unhealthy lifestyles and products such as fast foods and energy drinks. Influencers can be incentivised to highlight unhealthy products including foods and drinks in their content as viral marketing strategies. This increases brand exposure and encourages increased consumption to drive sales (Coates et al. 2019). In addition, the platform's emphasis on short entertaining videos and virality does present challenges like the dissemination of misinformation and potential for oversimplification of complex nutrition-related health messages. Because of these issues, social media platforms like TikTok should not be ignored by health promoters. Using publicly accessible social media content provides a unique opportunity to gain insight into an audience, it can help identify current trends, values and possible levers that could be used in health promotion activities either in social media or other formats.

Despite the possible opportunities, there are important ethical considerations regarding data ownership and control with social media platforms like TikTok. While users agree to TikTok's terms of use to engage with the platform, the way their data is collected and used poses critical concerns for indigenous data sovereignty (Kukutai and Taylor 2016). The inherent right to own and govern the use of Māori data generated by Māori peoples are fundamental principles of Māori data and algorithmic sovereignty, as highlighted by Te Mana Raraunga (the Māori Data Sovereignty Network) (Te Mana Raraunga 2018; Brown et al. 2023). TikTok collects vast amounts of data from users such as demographic, behavioural and geolocation through algorithms, which are used to personalise content and often for commercial gain (TikTok 2021). Although users technically 'own' the data they upload and it will disappear if they delete their TikTok account, any content created by other users e.g. stitch videos which may feature them, will not (TikTok 2024). Māori may unknowingly lose control over personal and cultural data when sharing aspects of their identity and heritage on social media platforms like TikTok. Despite the risks, our research demonstrates that this platform is being used to build social and cultural connections and cohesions. We were mindful of not using the data in an exploitative way or to frame Māori food culture in deficit terms. Rather, we felt that there was an important mana-enhancing story to be told about kai Māori and how it can inform positive health promotion interventions.

In conclusion, Māori used TikTok to celebrate their unique cultural identity and kai Māori content was used as a form of positive cultural communication and nourishment. Health promotion in Māori communities would benefit from drawing on the values of kai as more than food (i.e. nutrients). Kai can enhance wellbeing by promoting cultural connection and facilitate healthy lifestyle behaviours through traditional food gathering practices. Our research shows how TikTok could be used as a cost-effective tool to disseminate healthy eating messages in innovative ways. Leveraging its popularity, engaging content, unique algorithm-driven content discovery and user engagement features, using popular hashtags and co-opting influencers offers potential for reaching and engaging with diverse audiences, notably younger generations. However, in future research greater consideration should be given to how data ownership, control, and algorithmic sovereignty are ensured and upheld for all platform users.

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