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Editor's Introduction

Three things – an introduction to this issue, a reminder of the upcoming special issue on environment and climate, and some advice for authors.

Prelude to this issue: We are thrilled to kick off the New Zealand Journal for 2022 with Volume 51, Issue 1. We present six articles, including authors from five of Aotearoa's seven Universities, and covering an unusual breadth of research and practice.

Notably, the first of these papers embodies evidence-based practice guidelines for psychologists working with clients who are sex, sexuality, and gender-diverse. This is an unusual paper for the current NZJP because it doesn't so much describe research, but present the *product* of a great deal of local research and practice-based evidence and, like the other papers published in this issue, was accepted after peer-review. As well as explicit lessons for those practising with diverse clients, this publication embodies our commitment to consideration of a diversity of Aotearoa-based scholarship in NZJP. If you have work that you'd like to have considered by the Journal, but you're unsure of suitability, please contact us.

The other five papers present a combination of quantitative (e.g., Marques and colleagues), qualitative (e.g., Fraser et al., Van Kessel et al., and Dempster-Rivett and colleagues) and mixed-methods research endeavours (e.g., Howard et al.) Each of these works represent research that has potential to inform several topical debates. For example, Marques and colleagues' prospective analyses of large-scale survey data from 2019 to understand who had chosen or chosen not to receive the Covid-19 vaccination by the close of 2021 - this work was accepted against a background of helicopters hovering over Parliament as police faced off against anti-mandate protestors. This theme of psychology in a pandemic-affected world also provides the background to Van Kessel and colleagues' interviews with counselling psychologists about their experiences and views of providing tele-counselling. I shall close by directing readers to (sometimes humorous) analysis of memes associated with the annual Bird of the Year Campaign to provide commentary around online activism and national identity. Returning their corrected proofs, the authors (Fraser and friends) noted that they were "very excited to see this paper released into the wild".

Last chance - upcoming special issue on psychological perspectives on environment, climate and sustainability: We are close to completing review and acceptance of some of the manuscripts submitted for this special issue and will publish individual papers as they become available, as well as in combination in a supplementary December issue of the Journal.

We strongly encourage scholars with work relevant to the subject of this special issue to consider submission. For further detail please contact Marc Wilson. Special issue Editors are drawn from the New Zealand Psychological Society's Climate Psychology Task Force and include Brian Dixon, Jackie Feather, Natasha Tassell-Matamua, and Marc Wilson. For further information about the Society's Climate Change initiatives please visit the Society website.

Advice to authors: Consistent with the imperative of the Journal, *any* submission must clearly articulate relevance in the context of Aotearoa New Zealand. Information about the Journal, and general author guidelines can be found here.

Additionally, the Covid-19 pandemic has dramatically affected the ways that academics work, and this can be seen in much greater difficulty securing reviews (for example, we have experienced significantly more declines of review invitations compared to pre-Covid times). Feel free to suggest reviewers with appropriate expertise (while being aware of conflicts of interest) and we will draw off that list when supplementing the invitations we extend. Finally, **please ensure that you submit a deidentified manuscript**!

For now, we wish you all the best for 2022, and look forward to seeing the fruits of your labours submitted for consideration with NZJP.

Marc Wilson

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CONTENTS

Developing competence in the NZ Psychologist workforce: Best Practice Guidelines for working with sex, sexuality, and gender diverse (SSGD) clients

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This article describes the process and context of the development of the Best Practice Guidelines (BPG) for working with clients with diverse sex characteristics, sexualities, and genders in Aotearoa/New Zealand and a verbatim section from the BPG is included. Changes in theory, research and applied practice in the discipline of psychology are briefly outlined, along with an account of the process of development and publication of the BPG. The BPG provide guidance on basic awareness, knowledge and skills, and a competence framework for registered psychologists to work with clients with diverse sex characteristics, sexualities and genders. Guidelines published by the New Zealand Psychologists Board are underpinned by the Code of Ethics and aim to support the delivery of evidence based, competent and ethical psychological practice.

Keywords: *Best practice guidelines, diverse genders, sexualities, sex characteristics, workforce competence*

The psychology discipline has undergone a transformation in theory, research and applied practice that reflects the significant shift that has taken place at the level of society in relation to Lesbian, Gay, Bisexual, Transgender, Intersex and Queer+ (LGBTIQ+) people. Challenges to the social, legal and health care inequities that contribute to negative outcomes for LGBTIQ+ people have been raised through research, social activism and LGBTIQ+ lobbying. In the past two decades the psychology profession has interrogated its own historical legacy of pathologising, making invisible and 'mistreating' LGBTIQ+ people. The International Psychology Network for Lesbian, Gay, Bisexual, Transgender and Intersex Issues (known as IPsyNet) consists of national and international psychological associations. The network published a '*Statement on LGBTIQ concerns'* in 2018 (American Psychological Association, 2018). This called for the field of psychology to condemn pathologising notions of LGBTIQ+ and articulated a clear position of recognizing diversity of sex characteristics, genders and sexualities as normal and healthy variations of human experience (American Psychological Association, 2018; British Psychological Society, 2019). Of importance to the context here in Aotearoa New Zealand, is that the New Zealand Psychological Society is a signatory to the IPsyNet statement on LGBTIQ concerns.

This critical inquiry and paradigm revolution in psychology led to a change to frameworks that are now inclusive and affirming of diversity sex characteristics, sexualities and genders. (See American Psychological Association, 2018; British Psychological Society, 2019). The IPsyNet statement was endorsed on its introduction by 17 professional psychology organizations across the world and in 2020 there were 38 signatory associations, including New Zealand and Australia Psychological Societies. During this period there was an international move to develop and publish best practice guidelines for psychological practice with LGBTIQ+ people (American Psychological Association, 2012, 2015; British Psychological Society, 2012, 2019; NZ Psychologists Board, 2019; Psychological Society of South Africa, 2017). These set up expectations for the training and practice of psychologists in relation to working with these populations (see IPSYNET downloaded from https://www.apa.org/ipsynet/advocacy/policy/statement-english.pdf on 30 July 2020). It has been notable however that despite the publication of best practice guidelines there is evidence of lack of curricular content and inclusion of LGBTIQ+ healthcare needs in the training of psychologists (Boroughs, Bedoya, O'Cleirigh & Safren, 2015; Fell, Mattiske & Riggs 2008; Institute of Medicine, 2011; Riggs & Fell, 2010). Bidell (2014) argues that appropriate content should be threaded across the curriculum, rather than being "additional" to core curriculum content. Oransky et al., (2019) highlight the importance in psychology education of developing

student awareness of cisgender[1] privilege and gendered experiences relating to power and marginalization.

In Aotearoa New Zealand research has identified a key issue in the provision of mental health care services for the Rainbow community[2] as the lack of education, information and support for practitioners around culturally sensitive practice (Adams et al., 2012; Rainbow Youth, 2018). The International Union of Psychological Science published the core competencies in professional psychology practice (2016). This explicitly identified working with diversity and culture as a core competence for the practice of psychological therapy.

Bidell (2014) extended the general cultural competence framework to include specific LGB affirmative competencies. These competencies include awareness of one's own prejudice, biases, beliefs and values regarding LGB people, knowledge of the current and historical contextual factors which are affecting LGB people and affirmative clinical skills. This framework is aligned with the cultural competence framework described in the BPG in Aotearoa New Zealand.

Background to developing Best Practice Guidelines in Aotearoa New Zealand

In 2017 the first author of this article contacted the New Zealand Psychologists Board (NZPB) and suggested the development of best practice guidelines for working with clients with diverse sex characteristics, sexualities and genders. A call for expression of interest to contribute to the guidelines was sent out to registered psychologists and this resulted in a group of 7 members who worked collaboratively to co-author the guidelines, with administrative support of the NZPB. A final draft was distributed to a wider reference group for consultation. The co-authors and wider reference group are members of the Rainbow community in New Zealand and registered psychologists or intern psychologists.

In developing the best practice guidelines for the NZPB, the authorship group consulted equivalent international best practice guidelines and a published chapter in the " Professional Practice of Psychology in Aotearoa New Zealand" in preparation for writing the first draft (American Psychological Association, 2012, 2015; British Psychological Society, 2012; Du Preez & Macdonald, 2016; Psychological Society of South Africa, 2013; The Psychological Society of Ireland, 2015).

The BPG were finally approved and published in 2019. This field of practice is constantly evolving in relation to new research evidence and changes in nomenclature, language and terminologies relating to diversity of sexualities, genders and sex characteristics. The BPG will be reviewed regularly to reflect the latest understandings and frameworks and is therefore an ongoing project. The first author will lead on initiating the next working group to co-author the revisions to the BPG in 2021/2021.

The section that follows is the published text from the BPG and includes the essential and basic requirements for working with sex, sexuality and gender diverse clients. Psychologists who work in contexts where a more advanced level of competence is required, or they wish to develop their practice to include a speciality in working with sex, sexuality and gender issues, ought to take steps to further and develop their competency through relevant clinical training and supervision.

Best Practice Guidelines for psychologists practicing in Aotearoa New Zealand

(New Zealand Psychologists Board, 2019)

One of the core purposes of the Health Practitioners Competence Assurance Act (2003) is to safeguard the public through ensuring that health care practitioners are competent and fit to practice. The Act also requires the New Zealand Psychologists Board to set cultural competence guidelines and develop mechanisms through which competence can be measured, thereby ensuring the safety of members of the public who use mental health care services in Aotearoa New Zealand. Awareness, knowledge and skills to perform professional psychological duties which acknowledges diverse worldviews all contribute to cultural competence in the workforce. Diverse worldviews also include the full range of sex, gender and sexual diversity that make up the population.

The guidelines are structured according to these three core attributes of cultural competency: Awareness, Knowledge and Skills. In the full version of the guidelines a distinction is made between what is considered as essential awareness, knowledge and skills for basic cultural competence, and what is considered as additional knowledge and skills required for more specialised and advanced practice. Because variation in sex, sexuality and gender is common, it is incumbent on all psychologists to have a basic awareness, familiarity and skill level to receive any client in a respectful and supportive manner.

Areas of cultural competence in working with sex, sexuality, and gender diverse clients

Awareness. Psychologists are encouraged to be aware of New Zealand's historical and current socio-political and cultural history around sex, sexuality and gender diverse identities, and in particular the ways in which their profession has pathologised sex, sexuality and gender diverse clients, and to reflect

[1] Cisgenderism is defined as the systemic delegitimization of people's own understanding of their genders and bodies (Riggs & Fell, 2010)

[2] Rainbow communities' is a broad umbrella term that covers a diversity of sexual orientations, as well as gender and sex identities. The term is inclusive of, but not exclusive to: lesbian, gay, bisexual, transgender, intersex, takatāpui, whakawahine, vakasalewalewa,fakaleiti, tangata ira tane, 同志 (tongzhi), mahu, palopa, fa'afafine, akavaine, fakafifine, queer, questioning, asexual, genderqueer, pansexual, and genderfluid (Auckland Council, 2016).

on how this impacts clients' accessing and using health care services

Psychologists are encouraged to be aware of and reflect on heterosexual and cisgender privilege and the importance of advocating for equal access to systemic resources including within the legal, medical and justice systems

Psychologists are encouraged to be aware of and reflect on their own sex, sexuality and gender identity and the social discourses that have shaped and continue to shape these identities

Psychologists are encouraged to be aware of and reflect on the client's sex, sexuality and gender identity and how this identity intersects with other aspects of their identity, lived experience and understandings of their world.

Psychologists are encouraged to be aware of and reflect on the impact of minority stress and marginalisation of sex, sexuality and gender diverse people and how this may be perpetuated within a therapeutic relationship and healthcare services.

Psychologists are encouraged to be aware of and reflect on the diversity of the sex, sexuality and gender diverse community. Although all psychologists should have a basic level of knowledge in this area, psychologists must get to know the client in front of them on an individual level. While there are common experiences and needs among sex, sexuality, and gender diverse clients, these will not apply to all clients at all times

Psychologists are encouraged to be mindful of the power of language and endeavour to use correct, validating and inclusive language where possible, while also being aware of avoiding language that might diminish, offend or alienate clients (e.g. using the wrong and non-preferred gender pronoun.)

Knowledge. Psychologists are encouraged to be knowledgeable about the lived experiences of sex, sexuality, and gender diverse people in Aotearoa New Zealand. A lack of knowledge by the psychologist may significantly reduce treatment efficacy, risk further stigmatisation, marginalisation, and heighten minority stress. Knowledgeable, competent and affirmative psychologists, however, are more likely to help buffer the experiences of stigmatisation and exclusion of the sex, sexuality and gender diverse population, and are better equipped to attend more holistically to a client's life and related issues, thereby improving the potential for treatment efficacy. The areas in which psychologists are encouraged to increase their knowledge are described in the following sections:

Minority stress. Minority stress refers to the stress associated with being marginalised, discriminated against, or having different cultural and/or social frameworks to the majority of the population. Minority stress has been linked to an increased risk to physical and mental health, and negative impacts on well-being. International research demonstrates people who are sex, sexuality and gender diverse are at greater risk of mental health problems such as self-harm, suicide, depression, anxiety and substance use disorders compared to those outside of this community (Budge et al., 2013; Fredriksen-Goldsen et al., 2013; King et al., 2008; Lucassen et al., 2017).

Minority stress associated with a person's sex, sexuality and gender status, can also be exacerbated if they are also impacted on through exposure to belonging to additional minority or marginalised groups. For example, a sex, sexually and/or gender diverse client might also be subject to stress from their being a member of a marginalised ethnicity, physically challenged group or neuro-diverse group. In Aotearoa, the effects of colonisation on takatāpui (Māori who identify as sex, sexuality and gender diverse) should also warrant close attention by providers. In addition to dealing with their minority sexual orientations, lesbian, gay, and bisexual people of colour also experience racism and discrimination within LGBTIQ+ communities.

Pre-colonial Māori society. In pre-colonial Māori society, it is understood that people were accepting of others who were of diverse gender and sexuality and their place in society was valued. It is known that the impact of colonization on takatāpui (broadly: Māori who are sex, sexuality and gender diverse), was significant and the specific needs and vulnerabilities of sex, sexuality and gender diverse youth/-tamariki should be taken into account.

Psychologists should seek to understand the various developmental pathways of children and youth/tamariki who are sex, sexuality and gender diverse, with particular attention to theories of sexual and gender development, and understanding the fluidity of sex, sexuality and gender diverse identity, particularly in adolescence. Psychologists should also seek to understand the diversity of sexual development and expression.

When seeing a sex, sexuality and gender diverse young person/tamariki the psychologist should be aware that in spite of recent positive trends towards acceptance of in Aotearoa, sex, sexuality and gender diverse youth/tamariki (who generally lack economic independence and legal agency) are more likely to be negatively affected by experiences of discrimination and exclusion. Research shows sex, sexuality and gender diverse youth/tamariki experience higher rates of bullying and stress associated with disclosing sex, sexuality and gender diversity within whanāu or social circles and have a higher incidence of suicide, depression, self-harm, substance misuse, homelessness, partner and sexual violence compared to heterosexual youth/tamariki. Compounding these difficulties, sex, sexuality and gender diverse youth/tamariki also regularly encounter barriers

to accessing sexual, physical and emotional health services, particularly those youth/ who reside in rural areas

Socio-political context. Throughout history, most if not all countries have pathologised and criminalised sex, sexuality and gender diversity. Sadly, the mental health profession, often continues to pathologise sex, sexuality, and gender diversity despite the widespread and general acceptance that this diversity should no longer be considered being symptomatic of a mental illness (i.e. previous DSM III-R categorisation of "sexual disorder not otherwise specified" and the current DSM 5 inclusion of Gender Dysphoria). Unsurprisingly, this stigmatisation creates barriers to many sex, sexuality and gender diverse people effectively and successfully accessing and benefiting from health services, which has consequent negative health outcomes. In the recent ICD-11 Gender Incongruence has been moved out of mental health disorders and now sits under conditions of sexual health. In some countries, having these diagnostic categories does allow for access to services via medial insurance.

Psychologists are encouraged to have knowledge of Aotearoa New Zealand's socio-political history as well as the current political and social climate. Many people who are sex, sexuality and gender diverse experience negative impacts throughout their life span arising from discrimination, social stigmatisation, and internalised stigma.

While there has been increasing legal acceptance in Aotearoa New Zealand, stigmatisation and exclusion continues and certain groups remain exposed to greater levels of stigmatisation and inequity. People who identify as bisexual are frequently exposed to increased stigma due to their identity contradicting widely held binary views of sexuality, that one is either hetero- or homosexual. There continues to be significant inequalities for transgender people accessing gender-affirming health care.

Different cultural and religious understandings of gender, sex and sexuality. There are different cultural understandings of sex, sexuality and gender. Māori, Pasifika, and Asian groups often have differing concepts and language for the expression of diversity in their domains. Similarly, different faith-based groups, (and even branches of the same faith) hold differing beliefs about sex, sexuality and gender. Psychologists should also be aware that their own views may be quite different from other cultures' and religions' views of sex, gender and sexuality.

Knowledge of terminology and language. Psychologists are encouraged to learn and utilise terms often used by members of the sex, sexuality and gender diverse communities. It is important that psychologists take the responsibility and associated initiatives to educate themselves regarding relevant terminology, community and local resources, rather than expecting and relying on their client to educate them. Psychologists should recognise that there are many forms of expression and identity for people who are sex, sexuality and gender diverse including the interaction of multiple identities, that identities may not be fluid and not fixed, and that identities may shift through a person's lifetime.

A critical analysis of research and its interpretation when working with people who are sex, sexuality and gender diverse. While there is now research and literature both in Aotearoa New Zealand and oversees regarding the experiences of people who are sex, sexuality and gender diverse, the history of stigmatisation and fundamentalist religious views can still influence how information and research about people who are sex, sexuality and gender diverse is undertaken and conveyed. For example, 'conversion therapies' ('so-called' interventions designed to change a person's sex, sexuality, and/or gender diversity status) have never been able to withstand the scrutiny of rigorous scientific enquiry, however they continue to be used today despite being condemned by many professional organisations as being unethical, unprofessional, and harmful.

The complexity and diversity of the contemporary lives of people who are sex, sexuality and gender diverse. Psychologists should understand that the lives of people who are sex, sexuality and gender diverse will vary substantially. There is no single LGBTIQPA+[3] community, and the relevant and sub-communities that do exist are not always or necessarily coherent or internally supportive of all sex, sexuality and gender diversity. Psychologists working with and alongside this community should also endeavour to understand the impact of HIV/AIDS on the rainbow community, including reflection on experiences of stigma and the intersection between minority stress and health related issues. Furthermore, clients or their LGBTIQPA+ whānau may have had distinctly different experiences depending upon their age and whanau/ family structures, including polyamorous relationship structures.

Skills. As psychologists we are frequently challenged by or work with clients whose

[3] Lesbian, gay, transgender, intersex, queer, pansexual, asexual+ community

experiences, values, beliefs, ethnicity, psychical ability, and lifestyle are very different to our own. For many of us, working with and alongside this community, might offer us the opportunity to relate to people who differ from us with respect to their genders, sexuality, preferences and orientations. Psychologists have a responsibility to provide safe, responsible, ethical and effective care and service to all clients, regardless of those differences.

Previous sections of this document have discussed the importance of Awareness and Knowledge. The following section discusses the skills that psychologists require to work safely and effectively with sex, sexuality and gender diverse clients. These skills might best be seen on a continuum, from essential skills that all psychologists should possess with competency with respect to working with sex, sexuality and gender diverse clients who might present for assessment and treatment, to more advanced and optimal or aspirational skills, for those psychologists who offer more specialised services.

Essential skills for working with sex, sexuality, and gender diverse clients. Psychologists should take an explicitly affirmative approach to sex, sexuality, and gender diversity, where sex, sexuality and gender is understood as potentially fluid and potentially nonbinary. All identities and expressions are part of human diversity. Psychologists can communicate their affirmative stance through use of tone and comfortable body language, as well as through institutional signals of safety including rainbow flags, stickers, or posters, toilets for people of all genders, and inclusive questions about gender on intake forms and surveys (i.e., no male/female tick boxes)

Assessment of own skill. Psychologists should undertake a self-assessment of their own skill in working with sex, sexuality, and gender diverse clients, using this list as a guide. If necessary, psychologists may seek training and support. Community organisations such as Affinity Services, RainbowYOUTH, Gender Minorities Aotearoa, and InsideOUT provide training, or there may be a local rainbow organisation which could be contacted. Community organisations are typically underfunded, so if there is no set fee for training psychologists can provide a generous koha as a more tangible expression of support.

Appropriate language use. Psychologists should know the meaning of common terms, including lesbian, gay, bisexual, transgender, nonbinary, asexual, polyamorous, cisgender, intersex, and dysphoria

Psychologists should match theclient's language, particularly regarding their own identity e.g., if a client describes themselves as 'queer' do not refer to them as 'gay'. The psychologist should ask the client directly how they would like to be referred to. Some persons have preferences about what pronouns should be used to refer to them.

Comprehensive assessment. Psychologists should ask open questions that invite clients to decide when they want to discuss identity, e.g., instead of asking "what is your sexual orientation?" ask "is sex, sexuality, or gender something you want to talk about in this space?" As part of your assessment practice discuss clients' coming out journey, enquire about support from friends and whānau, and whether or not there are experiences of, or concerns about, stigma and discrimination.

Appropriate focus. Psychologists should invite clients to determine the focus of therapy and follow their lead. This may or may not include discussions of sex, sexuality, and gender diversity, as well as the ways in which identity impacts on clients' mental health

Referral when needed. If a psychologist is unable to provide a client with the support they need (e.g., around gender-affirming healthcare, psychosocial support through transition, working with family/whānau, or questioning gender or sexuality), the psychologist should refer the client to an appropriate practitioner. However, in 'referring on' the psychologist should be mindful that the client might feel pathologised or that they have problems or challenges that are 'too serious' for you to manage. This might replicate and/or increase their feelings of alienation, low self-esteem and sense of being different.

Seeking supervision. The psychologist should seek appropriate supervision when working with sex, sexuality, and gender diverse clients. Sometimes this may require seeking supervision from someone other than your usual supervisor if that practitioner does not have knowledge in this area.

Conclusion

Best practice guidelines offer psychologists a summary of evidence-based practice in a particular area of the profession that they practice in, in order to set a standard of care in the delivery of psychological services. Whilst international guidelines and best practice benchmarks are very important to guide global psychological practice standards, the value of developing best practice guidelines specific to a country's culture and context cannot be emphasised enough. Competent practice occurs in relation to the intersection of identities which are unique to place, context and culture. In contextualising and citing parts of the BPG in article format the authors hope to disseminate this information to a wider audience and increase the competence in the national workforce to offer ethical and evidence-based practice to clients with diverse sex characteristics, sexualities and genders.

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The Psychological Society of Ireland. Guidelines for good practice with Lesbian, Gay and Bisexual clients.

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Psychological predictors of COVID-19 vaccination in New Zealand

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Is it possible to predict COVID-19 vaccination status prior to the existence and availability of COVID-19 vaccines? Here, we present a logistic model by regressing decisions to vaccinate in late 2021 on lagged sociodemographic, health, social, and political indicators from 2019 in a sample of New Zealand adults aged between 18 and 94 (M_{age} = 52.92, *SD* = 14.10; 62.21% women; *N* = 5324). We explain 31% of the variance in decision making across New Zealand. Significant predictors of being unvaccinated were being younger, more deprived, reporting less satisfaction with general practitioners, lower levels of neuroticism, greater levels of subjective health and meaning in life, higher distrust in science and in the police, lower satisfaction in the government, as well as political conservatism. Additional cross-sectional models specified using the same, and additional COVID-19-specific factors are also presented. These findings reveal that vaccination decisions are neither artefacts of context nor chance, but rather can be predicted in advance of the availability of vaccines.

Keywords: *COVID-19, vaccination, Aotearoa New Zealand*

Introduction

At the time of writing in December 2021, Aotearoa New Zealand had just transitioned to a 'traffic light' system for managing COVID-19 in which freedoms were introduced for vaccinated New Zealanders. This system was part of the COVID-19 protection framework, and involved three settings (red, orange, green) that communicated the settings and restrictions for individuals and businesses in the community with the aim of protecting the healthcare system and populations most at risk (New Zealand Government, 2021). The traffic light system was preceded by a significant and ongoing vaccination campaign for the last three or four months that increased the proportion of the eligible population who were fully vaccinated (two doses) to around 90% (Frost, 2021). This period also saw growing public debate regarding the vaccine, with a visible and vocal minority who expressed strong opposition for reasons including feeling coerced to take an unsafe and untested vaccine due to government mandates (Menon & Awasthi, 2021).

Our research group led the New Zealand Attitudes and Values Study (NZAVS). The NZAVS is a large-scale longitudinal panel study of attitudes and values, the most recent wave of which includes the question, 'Have you been vaccinated for COVID-19?' This question was designed and finalised for use in the questionnaire before the Delta variant was detected in New Zealand, and data collection for the current wave began following our standard annual schedule on October 1st 2021 while the country was in lockdown after Delta had been detected and during the vaccine rollout. There has been considerable research on the psychological factors that predict COVID-19 vaccine hesitancy (e.g., Gerretsen et al., 2021; Murphy et al., 2021), but little research has been done in the New Zealand context. Specifically, how much of what seems like a serious cleavage in the population reflects differences in ethnicity, trust in science and/or institutions, differences in political orientation, differences in education, income, poverty and wellbeing, differences in personality, and so forth?

In this paper, we provide a rapid turn around of self-report questionnaire data collected during the first (online-only) phase of the NZAVS data collection for the 2021/2022 wave to provide New Zealand-specific data on the psychological factors that correlate with, and might also predict, vaccine acceptance versus vaccine hesitancy (that is, delayed acceptance or refusal to vaccinate despite the availability of services; Dubé et al., 2014). Frameworks to understand antecedents of vaccination acceptance and uptake exist, such as the 5C model (Betsch et al., 2018) and the Behavioural and Social Drivers (BeSD) of Vaccination framework (Shapiro et al., 2021) adapted from the Increasing Vaccination Model (Brewer et al., 2017).

The 5C model (Betsch et al., 2018) proposes five psychological antecedents of vaccine acceptance: confidence (i.e., trust in the safety of vaccines and the system that delivers them), constraints (i.e., structural and

psychological barriers), complacency (i.e., not perceiving diseases as high risk), calculation (i.e., engagement with information searching) and collective responsibility (i.e., willingness to protect others). A recent cross-sectional study of eight nations during late 2020 to early 2021 that organised predictors consistent with the 5C model found COVID-19 vaccine acceptance was significantly associated with lack of confidence (e.g., distrust in authorities and scientists, and conspiratorial thinking), constraints (e.g., compliance with recommendations from health authorities), complacency (e.g., younger age, and lack of concern about COVID-19), as well as collective responsibility (e.g., support for restrictions ; Lindholt et al., 2021).

The BeSD framework (Shapiro et al., 2021) proposes four domains that lead to the uptake of recommended vaccines: thinking and feeling (i.e., cognitive and emotional responses to vaccines and vaccine-preventable diseases), social processes (i.e., social norms about vaccination), motivation (i.e., intention, willingness, and hesitancy to get vaccinated), and practical issues (i.e., personal experiences related to getting vaccinated including barriers). A main point of distinction from the 5C model is that it proposes that vaccination intention and hesitancy are motivational states that lead to vaccination acceptance or uptake, but can be impeded or facilitated by practical issues. As our expertise lies in understanding human behaviour, our goal here is not to argue whether people should or should not receive the vaccination, but to simply present, as objectively as we can, our findings on the psychological and demographic factors that predict vaccination status circa October-November 2021 in New Zealand.

The New Zealand Immunisation Schedule provides a series of publicly funded vaccines for babies, children, adolescents, and adults (Ministry of Health, 2021b). At present, the COVID-19 vaccine is not part of this schedule but is freely available to anyone in New Zealand aged 12 and over. Prior to the availability of COVID-19 vaccines in New Zealand in mid-2020, 74% of the adults aged 18 and over indicated a willingness to get vaccinated (Thaker & Menon, 2020). Shortly after the staggered start of New Zealand's Immunisation Programme in early 2021 (which prioritised people based on age and health), a nationwide survey indicated willingness to vaccinate against COVID-19 was hovering at similar levels (71%; Prickett et al., 2021). At the time of writing, levels of first-dose vaccination were approaching 94% of the eligible population (Ministry of Health, 2021a). Thus, a significant proportion of those who were hesitant towards a then-hypothetical vaccine have now accepted vaccination, while up to 6% are actively or passively vaccine hesitant.

Although it is encouraging to see the translation from intention to vaccination, vaccination uptake is not uniform, with diversity in coverage and uptake across district health boards. Further, while there is a small and growing literature examining general vaccination attitudes in Aotearoa (see for example, Lee et al., 2017; Lee & Sibley, 2020a, 2020b) there is limited research examining COVID-specific vaccination intention, let alone vaccination status, beyond general sociodemographic factors such as age, gender, education, and ethnicity (Thaker & Floyd, 2021). Therefore, we examined prospective and concurrent factors of COVID-19 vaccination status in this paper using the NZAVS survey.

Sociodemographic and health-related factors.

Sociodemographic factors that include practical issues or constraints are associated with hesitancy towards childhood vaccination in Aotearoa New Zealand. One NZAVS-based study indicated that attitudes towards vaccination were associated with perceptions of general practitioners (GP), and that this varied depending on ethnic background (Lee & Sibley, 2020a). Among both Pākehā and Māori, weaker vaccination intentions were associated with poorer access to healthcare and decreased satisfaction with GPs. Less formal education among Pākehā and religiosity among Māori were also associated with lower perceptions of vaccine safety. For Pacific peoples, not having a partner and being religious were associated with lower endorsement of vaccine safety. For Asian peoples, being older, female, less educated, and perceiving lesser GP cultural respect were associated with lower vaccine safety agreement.

Prior analysis of past NZAVS data implicates several other background factors or social processes, as well as other non-sociodemographic factors including complacency, in reduced vaccine confidence and intention. As well as lower educational attainment, living rurally, being in a relationship, being unemployed, and being a parent was positively associated with lower confidence in childhood vaccinations among adults (Lee et al., 2017). This analysis also reported that higher subjective health satisfaction was associated with lower vaccine confidence, given that greater engagement with preventative health behaviours tends to be associated with increased optimism about future health problems (Ingledew & Brunning, 1999). Indeed, an individual's perception of the important factors that govern their health or illness, known as health locus of control, not only predicts general health-supporting behaviours (e.g., Norman et al., 1998; Zindler-Wernet et al., 1987) but also plays a role in adult attitudes to childhood vaccination (e.g., Amit Aharon et al., 2018). A recent study found that health locus of control mediated the negative association between religiosity and COVID-19 vaccination intention (Olagoke et al., 2021). Finally, we examined hours spent on the internet, social media, and news to reflect engagement with information searching (vaccine calculation).

Psychological factors

To date, various psychological factors consistent with the BeSD of thinking/feeling and social processes (Shapiro et al., 2021) have been found to correlate with vaccine acceptance/hesitancy. For example, weaker identification with one's local community was associated with decreased willingness to get vaccinated against COVID-19 (Marinthe et al., 2020; Wakefield & Khauser, 2021). While some suggest that subjective wellbeing (e.g., meaning in life and satisfaction with life) should be positively associated with vaccination intention given its association with health preventative behaviours (e.g., Mulkana & Hailey, 2001), findings are mixed; some studies have shown such a relationship (e.g., Bilge et al.,

2021; Kilic et al., 2021), while others have indicated inconsistent or non-significant findings (e.g., Bock et al., 2017; Debus & Tosun, 2021). In New Zealand, individuals lower on Conscientiousness and Agreeableness, but higher on Openness to Experience, expressed greater hesitancy about childhood vaccinations (Lee et al., 2017). An examination of the psychological roots of anti-vaccination attitudes across 24 nations found that there was a small to moderate association with self-reported feelings of disgust in New Zealand (Hornsey et al., 2018). Taken together, the literature indicates there are likely to be several psychological factors that span identification, subjective wellbeing, and individual difference factors including personality that distinguish those who are hesitant to a COVID-19 vaccine from those who are not.

Trust and political factors

The rapid development of a COVID-19 vaccine in under a year is a remarkable scientific achievement, as vaccine development is typically measured in decades (Graham, 2020). In addition to this scientific effort is the testing, regulation, and supply of vaccines involving pharmaceutical companies, health agencies, and governments. Concerns around perceptions of rushed development and emergency use authorisation mechanisms to fast-track the vaccine may have led some individuals to distrust politicians and governments (Limaye et al., 2021), and fuelled conspiracy theories around the science and involvement of pharmaceutical and government authorities. Research has shown that unwillingness to receive a COVID-19 vaccine was associated with decreased trust in science (Agley et al., 2021), decreased trust in medical and scientific experts and greater self-reported conservative ideology (Kerr et al., 2021). In addition, greater belief in both general (Hughes & Machan, 2021) and specific (Hornsey et al., 2021) COVID-19 conspiracy theories, were associated with unwillingness to receive a COVID-19 vaccine. These and additional trust factors seem relevant to New Zealand during the COVID-19 pandemic, as trust in police, politicians, and satisfaction with the government increased post-lockdown in early 2020 (Sibley et al., 2020). This highlights the importance of institutional trust and political factors in how people respond to the ongoing COVID-19 pandemic, including attitudes toward vaccination, that are consistent with vaccine confidence (5C model; Betsch et al., 2018) and what people think and feel about vaccines and vaccine preventable diseases (BeSD model; Shapiro et al., 2021).

This research.

The present research explored the effects of sociodemographic, health, social, and political predictors prospectively from 2019 on current 2021 (October-November) self-reported vaccination status. Furthermore, we will examine the associations between these predictors concurrently using 2021 responses, with a final model including additional COVID-19-specific predictors. To these ends, we present a series of three logistic regression models each predicting vaccination status. Because the NZAVS is a longitudinal panel study that surveys the same people each year, we have data on people's attitudes and personality in the past, not just at the current point in time. Our first model uses people's scores from two years ago (their support for the government, their personality scores, their attitudes, the socioeconomic status deprivation of their neighbourhood) to predict their vaccination status now, two years after those measures were collected. This model is useful because it provides insight into the factors that predicted people's vaccination behaviour years into the future, well before the vaccination was even available, and before any furore about COVID-19 vaccination started. In this sense, specific factors in the model that predict future vaccination behaviour may be thought of as prospective predictors that help to forecast future vaccination behaviour. A notable advantage of this approach is that pre-COVID-19 indicators in the lagged model cannot be due to COVID-19. As such, this approach avoids what is known as post-treatment confounding, or conditioning on the effect of an exposure, which is known to bias inference (King, 2010)

The second model directly replicates the first, using identical measures from the same survey and also assesses vaccination status. This model provides information on the unique association (or correlation) between different psychological and demographic factors and vaccination status at the same point in time. However, it would be a mistake to assume that a correlation between government satisfaction and vaccination status at the same point in time implies that low satisfaction predicted hesitancy because people who are vaccine hesitant may have become less satisfied with the government—a government that has begun implementing vaccine mandates—over time. The third model extends upon this second model to also include additional attitude measures included at the same point in time that were relevant specifically to COVID-19 (and, hence, were not included two years previously).

METHODS

Participants and Procedure

The NZAVS is a longitudinal panel study of health outcomes, personality, and social attitudes that uses a national probability sample of New Zealand adults. The University of Auckland Human Participants Ethics Committee approved all procedures, and participants gave informed consent. The present study uses data for participants who participated at both Time 11 (2019, prior to the emergence of COVID-19) and Time 13 (October-November, 2021). We focus on data from the 5,324 participants aged between 18 and 94 (M_{age} = 52.92, *SD* = 14.10; 62.21% women) who provided responses to our variables of interest as part of the larger omnibus survey. Additional details about the sample, procedure, and retention of participants are available on the NZAVS website (Sibley, 2021).

Materials

All variables and descriptive statistics are presented in Table 1.

Sociodemographic factors: We assessed participants' age, gender education level, decile-ranked level of deprivation (Atkinson et al., 2013), ethnicity, employment status, parental status, partner status, and identification with religion (Hoverd & Sibley, 2010). Participants were

also asked to report weekly hours spent using the internet, watching or reading the news, and on social media (Sibley et al., 2011).

Health-related factors: Participants were asked whether they had a GP, to report their level of access to health care when needed (Lee & Sibley, 2017), their level of satisfaction with their family doctor/GP, cultural respect of GP, and cultural similarity of GP (Lee & Sibley, 2020a). They also responded to items from the short-form subjective health scale (Ware & Sherbourne, 1992). At Time 13, participants also reported their health locus of control (Wallston et al., 1978).

Psychological factors: Measures included sense of community (Sengupta et al., 2013), felt belongingness (Hagerty & Patusky, 1995), meaning in life (Steger et al., 2006), and life satisfaction (Diener et al., 1985). Measures assessing the International Personality Item Pool factors of extraversion, agreeableness, conscientiousness, neuroticism, openness to experience, and honesty-humility were assessed using the Mini-IPIP6 (Sibley et al., 2011). At Time 13, participants also reported their disgust sensitivity (Olatunji et al., 2007)

Trust and political attitudes: Participants reported their level of trust in science (Hartman et al., 2017; Nisbet et al., 2015), trust in the police (Tyler, 2005), and in politicians (Sibley et al., 2020). They also reported their political orientation (Jost, 2006), political identity centrality (Satherley et al., 2020), level of political efficacy (Paulhus & Van Selst, 1990), and satisfaction with the New Zealand government (Tiliouine et al., 2006). At Time 13, participants also reported belief in conspiracy theories (Lantian et al., 2016), and trust in the New Zealand government to make sensible decisions about how to best manage COVID-19.

COVID-19 scepticism: Two additional items relating to COVID-19 scepticism were used only at Time 13: the belief that the health risks associated with COVID-19 were exaggerated, and that COVID-19 was created in a laboratory.

Statistical Analyses

Data were analysed using Mplus version 8.7 (Muthén & Muthén, 2017). We conducted several logistic regressions with maximum likelihood estimation predicting self-reported non-vaccination status at Time 13 both prospectively and concurrently from Time 11 and Time 13, respectively. In Study 1a, we regressed non-vaccination status on demographic, health, social, and political variables from Time 11. In Study 1b, we regressed non-vaccination status on demographic, health, social, and political variables from Time 13, with the final model including additional COVID-19-specific variables only available at Time 13.

We applied a stringent alpha level ($p < .01$), and models report unstandardised effects with frequentist 99% Confidence Intervals. This stringent alpha level has the advantage of reducing the risk of Type I error (false positive), while the large sample size means that the risk of Type II error (false negative) is low for any nontrivial effect size even with a lowered alpha level. A sensitivity analysis delivered 99% power to detect a small effect size $f^2 > .012$ in the sample specifying a multiple regression with 43 predictors. Our results are interpreted using effect size conventions (Cohen, 1992). Missing data for exogenous variables were estimated using Rubin's (1978) procedure for multiple imputation with parameter estimates averaged over 100 datasets (thinned using every 200th iteration). Syntax for all analyses is available on the Open Science Framework https://osf.io/75snb/.

RESULTS

Descriptive statistics for all variables of interest for Study 1a and 1b are presented in Table 1 (see Supplementary Tables S1 and S2 for zero-order correlations between all predictors for Study 1a and 1b, respectively). Of the participants who completed the survey in 2019 and before November 2021 (n = 5324), 93.9% reported being vaccinated for COVID-19 (n = 4997) with the remaining 6.1% indicating they had not (n = 327). At this stage in New Zealand's vaccine rollout, roughly 75% of the eligible population had received both doses of the COVID-19 vaccine (Radio New Zealand, 2021a).

Study 1a – predicting 2021 unvaccinated status from 2019 social, health, and political predictors

Results from Model 1 revealed that being younger (odds ratio 0.98 [99% CI 0.97–1.00]) and more deprived (1.08 [1.02–1.15]) were significantly associated with being unvaccinated for COVID-19 approximately 2 years later. Of the personality traits assessed, only lower levels of neuroticism (0.84 [0.71–0.98]) were significantly associated with the odds of being unvaccinated. Indicators of health and wellbeing also predicted vaccination status, as being less satisfied with one's GP (0.87 [0.76–0.99]), and both higher levels of subjective health (1.18 [1.01–1.38]) and meaning in life (1.21 [1.00–1.46]) were associated with the odds of being unvaccinated. Finally, being more politically conservative (1.19 [1.04–1.36]), less satisfied with government (0.90 [0.84–0.96]), having lower trust in the police (0.80 [0.70–0.92]) and in science (0.65 [0.57–0.74]) were significantly associated with being unvaccinated. Overall, this model explained 30.9% of the variance in vaccination status.

Study 1b – associations between 2021 unvaccinated status and social, health, and political predictors

Results from Model 2 showed that once more, being younger (odds ratio 0.98 [99% CI 0.96–1.00]) and more deprived (1.08 [1.01–1.15]) were significantly associated with being unvaccinated for COVID-19. Of the personality traits assessed, only lower levels of neuroticism (0.74 [0.61–0.89]) were significantly associated with the odds of being unvaccinated. The only health and wellbeing indicator associated with the odds of being unvaccinated was higher levels of subjective health (1.21 [1.02–1.44]). Less satisfaction with the government (0.77 [0.71–0.85]) and having lower trust in science (0.60 [0.52–0.69]) were significantly associated with being un--vaccinated for COVID-19 in 2021. In addition, not having a GP (0.52 [0.29–0.93]), reporting a lower sense of belonging (0.75 [0.62–0.91]), and lower trust in politicians (0.70 [0.59–0.82]) were significantly associated with being unvaccinated. This model explained 51.2% of the variance in vaccination status.

Table 1. Descriptive Statistics and Items

	2019 Descriptive Statistics				2021 Descriptive Statistics			
	Range	*M*	*SD*	*n*	*M*	*SD*	*n*	*Items*
COVID-19 Unvaccinated	0-1	-	-	-	.939	-	5324	"Have you been vaccinated for COVID-19?"
Age	18-94	52.92	(14.096)	5324	54.87	(14.054)	5324	"What is your age?"
Gender	0-1	.378	-	5285	0.379	-	5324	"What is your gender?" (open-ended)
Education	1-10	6.060	(2.559)	5239	5.934	(2.652)	5297	"What is your highest level of qualification?"
NZ Dep	1-10	4.649	(2.705)	5304	4.635	(2.713)	5319	NZ Deprivation Index
Ethnicity Asian	0-1	.033	-	5324	0.036	-	5324	"Which ethnic group(s) do you belong to?" (open-ended)
Ethnicity Māori	0-1	.084	-	5324	0.089	-	5324	"Which ethnic group(s) do you belong to?" (open-ended)
Ethnicity Pacific	0-1	.024	-	5324	0.028	-	5324	"Which ethnic group(s) do you belong to?" (open-ended)
Employed	0-1	.749	-	5292	0.733	-	5277	"Are you currently employed? (this includes self-employment or casual work)"
Parent	0-1	.705	-	5320	0.726	-	5324	Based on reporting having one of more children.
Partner	0-1	.736	-	5261	0.729	-	5231	"What is your relationship status? (e.g., single, married, de-facto, civil union, widowed, living together, etc.)"
Religious	0-1	.296	-	5264	0.274	-	5278	"Do you identify with a religion and/or spiritual group?"
Hours Internet	0-168	16.382	(16.699)	5279	20.120	(19.714)	5132	Hours spent … using the internet (in total)
Hours News	0-168	4.816	(5.237)	5279	5.436	(4.908)	5094	Hours spent … watching/reading the news
Hours Social Media	0-168	4.339	(6.749)	5279	5.154	(8.199)	5090	Hours spent … using social media (e.g., Facebook)
Health Care Access	0-10	7.953	(2.192)	5315	7.709	(2.393)	5311	Your access to health care when you need it (e.g., doctor, GP).
GP Have	0-1	.925	-	5287	0.932	-	5304	"Do you have a regular family doctor/GP?"
GP Cultural Respect	1-7	6.066	(1.195)	4963	5.978	(1.287)	5025	"Does your doctor/GP respect your cultural background when you are discussing health issues with them?"
GP Cultural Similarity	1-7	4.981	(1.873)	4994	4.872	(1.935)	5058	"Do you think your doctor/GP shares a similar cultural background to you?"
GP Satisfaction	1-7	5.642	(1.413)	5010	5.603	(1.481)	5068	"Are you satisfied with the service and care you receive from your family doctor/GP?"
SF Subjective Health Scale	1-7	4.998	(1.164)	5324	4.920	(1.183)	5323	(3 items: Ware & Sherbourne, 1992) E.g., "In general, would you say your health is..." (T11 α=.63; T13 α=.64)
Sense of Community	1-7	4.178	(1.659)	5307	4.286	(1.626)	5220	(Sengupta et al., 2013) "I feel a sense of community with others in my local neighbourhood."
Belonging	1-7	5.064	(1.121)	5306	5.061	(1.130)	5314	(3 items: Hagerty & Patusky, 1995) E.g., "Know that people in my life accept and value me." "Feel like an outsider." (T11 α=.62; T13 α=.61)
Life Meaning	1-7	5.456	(1.255)	5322	5.425	(1.266)	5300	(2 items: Steger et al., 2006) E.g., "My life has a clear sense of purpose." (T11 ρ=.64; T13 ρ =.65)
Life Satisfaction	1-7	5.315	(1.236)	5312	5.182	(1.281)	5322	(2 items: Diener et al., 1985) "I am satisfied with my life." "In most ways my life is close to ideal." (T11 ρ=.65; T13 ρ =.65)
Political Identity Centrality	1-7	4.326	(1.812)	5222	4.350	(1.774)	5210	(Satherley et al., 2020) "How important are your political beliefs to how you see yourself?"
Political Efficacy	1-7	4.484	(1.257)	5324	4.307	(1.314)	5311	(3 items: Paulhus & Van Selst, 1990) E.g., "The average citizen can have an influence on government decisions." (T11 α=.64; T13 α=.67)
Political Orientation	1-7	3.374	(1.424)	5250	4.307	(1.314)	5311	"Please rate how politically liberal versus conservative you see yourself as being."
Satisfaction Government	0-10	5.398	(2.832)	5315	4.981	(3.208)	5319	(Tiliouine et al., 2006) "The performance of the current New Zealand government."
Politician Trust	1-7	3.695	(1.463)	5282	3.819	(1.602)	5202	(Sibley et al., 2020) "Politicians in New Zealand can generally be trusted."
Police Trust	1-7	4.554	(1.288)	5323	4.415	(1.330)	5314	(3 items: Tyler, 2005) E.g., "People's basic rights are well protected by the New Zealand Police." "There are many things about the New Zealand Police and its policies that need to be changed." (T11 α=.78; T13 α=.78)
Science Trust	1-7	5.606	(1.235)	5310	5.873	(1.202)	5294	(2 items: Hartman et al.., 2017) E.g., "I have a high degree of confidence in the scientific community." (T11 ρ=.57; T13 ρ =.58)
Extraversion	1-7	3.755	(1.233)	5306	3.698	(1.231)	5321	(4 items: Sibley et al.., 2011) E.g., "Am the life of the party." "Don't talk a lot." "Keep in the background." (T11 α=.78; T13 α=.77)
Agreeableness	1-7	5.389	(0.991)	5306	5.361	(1.019)	5323	(4 items: Sibley et al.., 2011) E.g., "Sympathize with others' feelings." "Am not interested in other people's problems." (T11 α=.73; T13 α=.74)
Conscientiousness	1-7	5.148	(1.076)	5306	5.137	(1.074)	5322	(4 items: Sibley et al.., 2011) E.g., "Get chores done right away." "Like order." "Make a mess of things." (T11 α=.71; T13 α=.70)
Neuroticism	1-7	3.484	(1.203)	5306	3.454	(1.225)	5323	(4 items: Sibley et al.., 2011) E.g., "Have frequent mood swings." "Am relaxed most of the time." (T11 α=.77; T13 α=.77)
Openness	1-7	5.110	(1.114)	5306	5.101	(1.113)	5318	(4 items: Sibley et al.., 2011) E.g., "Have a vivid imagination." "Have difficulty understanding abstract ideas." (T11 α=.71; T13 α=.70)
Humility	1-7	5.633	(1.114)	5306	5.696	(1.110)	5323	(4 items: Sibley et al.., 2011) E.g., "Feel entitled to more of everything." "Deserve more things in life." (T11 α=.75; T13 α=.75)
Conspiracy Beliefs	1-7	-	-	-	3.922	(1.744)	5207	"I think that the official version of major world events given by authorities often hides the truth."
COVID Exaggerated	1-7	-	-	-	2.417	(1.949)	5195	"I think that health risks associated with COVID-19 have been wildly exaggerated."
COVID Lab	1-7	-	-	-	3.445	(1.993)	5252	"I think it is quite likely that COVID-19 was created in a laboratory."
COVID Trust Govt.	1-7	-	-	-	4.648	(1.981)	5214	"I trust the Government to make sensible decisions about how to best manage COVID-19 in New Zealand."
Disgust Sensitivity	1-7	-	-	-	4.089	(1.823)	5205	(Olatunji et al., 2007) "Bad smells, messes, dead animals and rotten food absolutely disgust me."
Health Locus of Control	1-7	-	-	-	4.901	(1.170)	5323	(3 items: Wallston et al., 1978) E.g.., "If I take care of myself, I can avoid illness." "I am in control of my health." (T13 α=.68)

Table 2. Logistic Regression Predicting Unvaccinated Status

	Model using 2019 predictors of unvaccinated status in 2021					Model using equivalent 2021 (October-November) predictors of concurrent unvaccinated status in 2021					Model using extended set of 2021 (October -November) predictors of concurrent unvaccinated status in 2021				
	B	*p*	*B* 99% CI	*Odds Ratio*	*OR 99% CI*	*B*	*p*	*B* 99% CI	*Odds Ratio*	*OR 99% CI*	*B*	*p*	*B* 99% CI	*Odds Ratio*	*OR 99% CI*
(Intercept)	**1.495**	**.110**	**-0.917, 3.907**	-	-	**4.146**	**<.001**	**1.399, 6.892**	-	-	**0.905**	**.445**	**-2.150, 3.961**	-	-
Age	**-0.016**	**.007**	**-0.031, -0.001**	**0.984**	**0.969, 0.999**	**-0.020**	**.004**	**-0.039, -0.002**	**0.980**	**0.962, 0.998**	**-0.020**	**.005**	**-0.038, -0.001**	**0.981**	**0.963, 0.999**
Gender	0.043	.769	-0.331, 0.416	1.043	0.719, 1.515	-0.091	.567	-0.501, 0.319	0.913	0.606, 1.375	-0.224	.185	-0.661, 0.212	0.799	0.517, 1.236
Education	-0.029	.273	-0.096, 0.039	0.972	0.908, 1.040	-0.015	.586	-0.084, 0.054	0.986	0.920, 1.056	0.007	.802	-0.069, 0.084	1.007	0.933, 1.088
NZ Dep	**0.080**	**.001**	**0.019, 0.141**	**1.084**	**1.019, 1.152**	**0.075**	**.005**	**0.006, 0.144**	**1.078**	**1.006, 1.155**	**0.085**	**.002**	**0.013, 0.157**	**1.088**	**1.013, 1.170**
Ethnicity Asian	-0.346	.337	-1.275, 0.583	0.707	0.279, 1.791	-0.081	.836	-1.092, 0.930	0.922	0.335, 2.534	0.008	.984	-1.009, 1.024	1.008	0.365, 2.785
Ethnicity Maori	-0.197	.358	-0.750, 0.356	0.821	0.472, 1.427	-0.033	.888	-0.626, 0.561	0.968	0.535, 1.752	0.089	.709	-0.526, 0.705	1.093	0.591, 2.024
Ethnicity Pacific	-0.823	.078	-2.025, 0.380	0.439	0.132, 1.462	-0.051	.908	-1.183, 1.081	0.950	0.306, 2.948	-0.193	.633	-1.231, 0.846	0.825	0.292, 2.331
Employed	-0.309	.037	-0.690, 0.072	0.734	0.502, 1.075	-0.311	.059	-0.737, 0.114	0.732	0.479, 1.121	-0.314	.074	-0.766, 0.138	0.731	0.465, 1.148
Parent	0.422	.015	-0.025, 0.869	1.525	0.975, 2.385	0.330	.122	-0.220, 0.880	1.391	0.802, 2.410	0.229	.258	-0.294, 0.752	1.258	0.746, 2.122
Partner	-0.319	.031	-0.698, 0.061	0.727	0.498, 1.063	-0.324	.057	-0.762, 0.115	0.723	0.467, 1.122	-0.302	.091	-0.761, 0.157	0.740	0.467, 1.170
Religious	0.237	.087	-0.120, 0.593	1.267	0.887, 1.810	0.188	.223	-0.210, 0.587	1.207	0.810, 1.798	0.271	.095	-0.147, 0.690	1.311	0.863, 1.993
Hours Internet	0.006	.124	-0.004, 0.016	1.006	0.996, 1.016	-0.004	.258	-0.014, 0.005	0.996	0.986, 1.005	-0.004	.357	-0.016, 0.007	0.996	0.985, 1.007
Hours News	-0.022	.155	-0.063, 0.018	0.978	0.939, 1.018	-0.005	.766	-0.052, 0.041	0.995	0.950, 1.042	0.001	.972	-0.038, 0.039	1.001	0.963, 1.040
Hours Social Media	0.004	.643	-0.019, 0.027	1.004	0.981, 1.028	0.010	.127	-0.007, 0.027	1.010	0.993, 1.027	0.003	.712	-0.021, 0.028	1.003	0.979, 1.028
Health Care Access	-0.014	.652	-0.091, 0.064	0.987	0.913, 1.066	-0.012	.706	-0.094, 0.070	0.988	0.910, 1.072	-0.009	.771	-0.093, 0.074	0.991	0.911, 1.077
GP Have	-0.421	.035	-0.934, 0.093	0.657	0.393, 1.097	**-0.646**	**.004**	**-1.222, -0.071**	**0.524**	**0.295, 0.932**	-0.526	.023	-1.120, 0.069	0.591	0.326, 1.071
GP Cultural Respect	-0.058	.313	-0.206, 0.090	0.944	0.814, 1.094	-0.114	.052	-0.264, 0.037	0.893	0.768, 1.038	-0.138	.024	-0.297, 0.020	0.871	0.743, 1.020
GP Cultural Similarity	0.008	.824	-0.088, 0.105	1.008	0.915, 1.111	0.025	.548	-0.082, 0.132	1.025	0.921, 1.141	0.042	.343	-0.072, 0.156	1.043	0.931, 1.168
GP Satisfaction	**-0.137**	**.007**	**-0.268, -0.007**	**0.872**	**0.765, 0.993**	-0.076	.166	-0.216, 0.065	0.927	0.805, 1.067	-0.076	.199	-0.229, 0.076	0.927	0.796, 1.079
SF Subjective Health Scale	**0.165**	**.006**	**0.009, 0.322**	**1.180**	**1.009, 1.379**	**0.191**	**.004**	**0.019, 0.363**	**1.210**	**1.019, 1.437**	0.127	.097	-0.070, 0.325	1.136	0.932, 1.384
Sense of Community	0.022	.612	-0.088, 0.131	1.022	0.916, 1.140	0.123	.015	-0.007, 0.253	1.131	0.993, 1.287	0.121	.021	-0.014, 0.257	1.129	0.986, 1.293
Belonging	-0.183	.013	-0.372, 0.006	0.833	0.689, 1.006	**-0.291**	**<.001**	**-0.482, -0.099**	**0.748**	**0.617, 0.906**	**-0.237**	**.003**	**-0.445, -0.029**	**0.789**	**0.641, 0.972**
Life Meaning	**0.189**	**.010**	**0.000, 0.377**	**1.208**	**1.000, 1.458**	0.135	.092	-0.071, 0.340	1.144	0.931, 1.405	0.066	.431	-0.150, 0.282	1.068	0.861, 1.325
Life Satisfaction	0.041	.576	-0.149, 0.231	1.042	0.862, 1.260	-0.114	.134	-0.311, 0.082	0.892	0.732, 1.086	-0.108	.192	-0.322, 0.105	0.897	0.725, 1.111
Political Identity Centrality	0.006	.878	-0.087, 0.099	1.006	0.916, 1.104	-0.018	.662	-0.123, 0.087	0.982	0.884, 1.091	-0.019	.659	-0.127, 0.090	0.982	0.881, 1.094
Political Efficacy	-0.053	.323	-0.189, 0.084	0.949	0.827, 1.088	0.088	.129	-0.061, 0.237	1.092	0.941, 1.267	0.100	.088	-0.051, 0.251	1.105	0.950, 1.285
Political Conservatism	**0.170**	**.001**	**0.034, 0.306**	**1.186**	**1.035, 1.358**	0.063	.272	-0.085, 0.211	1.065	0.919, 1.235	0.019	.759	-0.143, 0.182	1.020	0.867, 1.199
Satisfaction Government	**-0.109**	**<.001**	**-0.175, -0.043**	**0.896**	**0.839, 0.958**	**-0.256**	**<.001**	**-0.345, -0.167**	**0.774**	**0.708, 0.846**	0.043	.396	-0.087, 0.172	1.044	0.917, 1.187
Politician Trust	-0.127	.016	-0.263, 0.008	0.881	0.769, 1.008	**-0.360**	**<.001**	**-0.524, -0.196**	**0.698**	**0.592, 0.822**	**-0.206**	**.004**	**-0.393, -0.020**	**0.813**	**0.675, 0.980**
Police Trust	**-0.218**	**<.001**	**-0.351, -0.085**	**0.804**	**0.704, 0.919**	-0.111	.037	-0.247, 0.026	0.895	0.781, 1.026	-0.057	.322	-0.206, 0.092	0.944	0.814, 1.096
Science Trust	**-0.434**	**<.001**	**-0.560, -0.308**	**0.648**	**0.571, 0.735**	**-0.514**	**<.001**	**-0.650, -0.378**	**0.598**	**0.522, 0.685**	**-0.372**	**<.001**	**-0.517, -0.227**	**0.690**	**0.596, 0.797**
Extraversion	-0.024	.674	-0.172, 0.124	0.976	0.842, 1.132	-0.062	.300	-0.217, 0.092	0.940	0.805, 1.097	-0.106	.116	-0.281, 0.068	0.899	0.755, 1.070
Agreeableness	0.080	.258	-0.102, 0.261	1.083	0.903, 1.298	0.120	.102	-0.069, 0.308	1.127	0.934, 1.360	0.148	.060	-0.054, 0.350	1.159	0.947, 1.418
Conscientiousness	-0.124	.045	-0.283, 0.035	0.884	0.754, 1.036	-0.124	.082	-0.307, 0.059	0.884	0.736, 1.061	-0.138	.065	-0.330, 0.054	0.871	0.719, 1.056
Neuroticism	**-0.174**	**.007**	**-0.339, -0.009**	**0.840**	**0.712, 0.991**	**-0.302**	**<.001**	**-0.488, -0.117**	**0.739**	**0.614, 0.890**	**-0.299**	**<.001**	**-0.501, -0.097**	**0.742**	**0.606, 0.908**
Openness	0.157	.012	-0.005, 0.319	1.170	0.995, 1.376	0.122	.064	-0.048, 0.291	1.129	0.953, 1.338	0.136	.058	-0.049, 0.320	1.146	0.952, 1.378
Honesty-Humility	0.082	.182	-0.076, 0.239	1.085	0.927, 1.270	0.119	.084	-0.058, 0.295	1.126	0.943, 1.344	**0.168**	**.002**	**-0.018, 0.354**	**1.183**	**0.983, 1.424**
Conspiracy Beliefs	-	-	-	-	-	-	-	-	-	-	0.110	.057	-0.039, 0.259	1.116	0.962, 1.296
COVID Exaggerated	-	-	-	-	-	-	-	-	-	-	**0.183**	**<.001**	**0.072, 0.294**	**1.201**	**1.074, 1.341**
COVID Lab	-	-	-	-	-	-	-	-	-	-	**0.249**	**<.001**	**0.151, 0.347**	**1.283**	**1.163, 1.415**
COVID Trust. Govt	-	-	-	-	-	-	-	-	-	-	**-0.463**	**<.001**	**-0.665, -0.261**	**0.629**	**0.514, 0.770**
Disgust Sensitivity	-	-	-	-	-	-	-	-	-	-	0.019	.647	-0.088, 0.126	1.019	0.916, 1.134
Health Locus of Control	-	-	-	-	-	-	-	-	-	-	0.039	.623	-0.165, 0.242	1.039	0.848, 1.274
			R^2 = .309; Log Likelihood = -990.885					R^2 = .512; Log Likelihood = -771.752					R^2 = .559; Log Likelihood = -691.019		

Note. Vaccination status is coded as 1 = Unvaccinated, 0 = Vaccinated. Gender is coded as 0 = Women, 1 = Men. Education is coded as (11-unit ordinal rank). NZ Dep (SES) is coded as decile ranked level of deprivation (1 = least deprived, 10 = most deprived). Ethnicity, Employed, Parent, Parent, Partner, Religion, and GP Have is coded as 1 = indicated.

In the final model (i.e., Model 3), we added new variables measured in 2021. Results revealed that being younger (odds ratio 0.98 [99% CI 0.96–1.00]) and more deprived (1.08 [1.01–1.17]) were significantly associated with being unvaccinated. Of the personality traits, lower levels of neuroticism (0.74 [0.61–0.91]) and higher levels of honesty-humility (1.18 [0.98–1.42]) were significantly associated with being unvaccinated. Also, reporting a lower sense of belonging (0.79 [0.64–0.97]), lower trust in politicians (0.81 [0.67–0.98]) and in science (0.69 [0.60–0.80]) were associated with being unvaccinated. Furthermore, those with greater belief that COVID-19 was exaggerated (1.20 [1.07–1.34]) or was due to a lab leak (1.28 [1.16–1.42]), and reporting lower levels of trust in the New Zealand government response to COVID-19 (0.63 [0.51–0.77]) were significantly less likely to be vaccinated. Overall, this model explained 55.9% of the variance in vaccination status.

DISCUSSION

The results of our lagged analyses show that a subset of our theoretically relevant variables prospectively predict vaccination status in Aotearoa New Zealand, in the period following the availability of the COVID-19 vaccine. Specifically, unvaccinated participants were more likely to live in more deprived areas, report more conservative political attitudes and less positive attitudes towards their GPs, Government, police and science. They were also more likely to endorse a greater sense of meaning and satisfaction with their health than were vaccinated participants. Of the Big Six personality variables, lower neuroticism predicted lower likelihood of vaccination (Lin & Wang, 2020). These results hint at two, somewhat paradoxical, patterns. First, the unvaccinated in this sample are more likely to report a societal position that is more socially, economically, or politically marginalised. Second, these same people tell us that they are more *satisfied* with their lives and health.

Feeling connected to one's local community was also not predictive of vaccination status, nor was subjective belonging. This indicates either that these variables are unrelated to vaccination attitudes, or are better explained by other variables in the dataset. Either way, this finding suggests that exhortations centred around collective responsibility to get vaccinated for your neighbours, or similar others, may not be a strong motivator for the remaining minority of New Zealanders yet to be vaccinated. Importantly, complacency and social process factors such as gender, ethnicity, and education were not significant predictors of vaccination status and therefore work against several of the negative characterisations of non-vaccination that have been articulated since the onset of COVID-19. For example, media discourse has, among other tropes, asserted that relatively low rates of vaccination among Māori have held the rest of the nation back from reopening post-Delta (Rātana, 2021). A counter to this argument is that the New Zealand vaccine roll-out initially prioritised vaccination for older New Zealanders, disadvantaging Māori peoples who are a disproportionately young population (only 5% of Māori are aged over 65, compared to 16% of non-Māori)—strongly reaffirmed by a recent Waitangi Tribunal decision in late December 2021 that the Government response and vaccination rollout put Māori peoples at risk (Radio New Zealand, 2021b). Indeed, our results reinforce an age-effect whereby younger people are more likely to be unvaccinated.

Being a parent, or having a partner, were statistically unrelated to vaccination status. Previous NZAVS research has indicated that attitudes to standard vaccinations among parents are important predictors of whether parents vaccinate their children (Lee & Sibley, 2017, 2020a). COVID-19 vaccination status among parents, however, were statistically similar to those of non-parents. Additionally, participants who self-identified as religious were no more, nor any less, likely to report being vaccinated. On the one hand, Destiny Church members have been vocally involved in the spate of anti-vaccination and anti-mandate protests in the closing months of 2021 (Macdonald, 2021). On the other hand, Aotearoa is a famously secular nation in which religion is relatively un-politicised, and Destiny Church represents a small fraction of those who broadly identify as Christian (the 2018 New Zealand Census reported 1772 adherents; Palmer, 2019).

Beyond the lagged predictors of vaccination status, we also examined the concurrent predictors of unvaccinated status in late 2021. Our model using the same predictors once more suggested that unvaccinated participants were younger, living in more deprived areas, reporting less satisfaction with the government, less trust in science, and greater levels of subjective health and lower levels of neuroticism. This underscored the importance of multiple antecedents to vaccine acceptance: confidence, constraints, and complacency. Factors related to what people think and feel were also associated with unvaccinated status, such as not having a GP, reporting feelings of lesser belonging, and lower trust in politicians. A final model with additional COVID-19 specific predictors also suggested that being unvaccinated was associated with vaccine confidence factors of increased levels of honesty-humility and lower trust in the New Zealand Government having made sensible decisions in managing the COVID-19 pandemic.

While vaccination status was not associated with general conspiracy theory belief, those who reported greater beliefs in COVID-19 related scepticism that the virus was created in a laboratory and that the health risks associated with COVID-19 were exaggerated were significantly less likely to be vaccinated, consistent with recent research on the impact of conspiracy belief on future COVID-19 health related decisions including vaccination (van Prooijen et al., 2021). It may be the case that specific COVID-19 scepticism mediated the relationship between general conspiracy beliefs and vaccination status, in line with recent research finding an indirect association between general conspiracy beliefs and intentions to leave the EU through specific "Brexit" conspiracy theories (Jolley et al., 2021). These findings highlight the importance of social processes in vaccination acceptance. Finally, there were no significant differences between vaccinated and unvaccinated status on disgust sensitivity, nor health locus of control.

As well as the specific findings relating to vaccination behaviour interpreted above, these results reveal that information contained in the NZAVS from before

vaccines became available in New Zealand (and even before the pandemic emerged) can predict vaccination status after availability between October 1 and November 22 2021. The lagged model we report (i.e., Model 1) explained 31% of the variance in 2021 vaccination decisions from information collected in 2019. Moreover, by including indicators from 2021, Models 2 and 3 predicted vaccination status while explaining between 51-56% of the sample variance. Importantly, because our models controlled for various plausible confounders, we strengthen our ability to make tentative causal inferences of vaccination status in the absence of an experiment (Grosz et al., 2020).

Our research has important implications for understanding and addressing motivations to vaccinate for future pandemics. The largely successful response early on during the COVID-19 pandemic of elimination and control in Aotearoa New Zealand was in part due to both the science-led response (Geoghegan et al., 2021) and communication efforts by the Government which fostered trust and mobilised support for public health measures prior to the availability of vaccines (Beattie & Priestley, 2021). Our results suggest that positive attitudes and trust towards actors and institutions central to the pandemic response (i.e., GPs, Government, Police, Science) was predictive of future vaccination status. Public health messaging that is transparent, acknowledges complexity, risk or uncertainty, while being empathic and inclusive is likely to engender trust and encourages behaviour change (Beattie & Priestley, 2021).

The current uptake of vaccination by 94% of eligible New Zealanders indicates that on average vaccine hesitancy is low relative to world figures (Ritchie et al., 2021), yet there remains a small number of individuals who are either reluctant to or willing not to vaccinate. Intentions and decisions to vaccinate are not uniquely motivated by personal attitudes, but also depend on systemic factors such as the availability and access of vaccinations (Dubé et al., 2014). Not only does this research highlight the diverse factors associated with vaccination status in New Zealand adults, but it also underscores that these are not necessarily the same factors predictive of parental attitudes and intentions towards childhood vaccinations. For example, research in New Zealand Aotearoa indicates that unemployment, ethnicity and lower educational attainment were associated with lower confidence in childhood vaccinations among adults (Lee et al., 2017), whereas these factors were non-significant predictors of prospective COVID-19 vaccination status for adults. This suggests the need for more research understanding adult vaccination hesitancy, not merely drawing inferences from research on parental vaccination attitudes and intentions. Future studies are needed to better inform interventions targeted to those who are hesitant to adult vaccines.

Another key finding and implication of our final model was that increased belief in COVID-19 scepticism was associated with being unvaccinated. These findings suggest the importance of actively combatting vaccine related scepticism that may lend itself to conspiracy theories during a pandemic (see Lazić & Žeželj, 2021, for a review of narrative vaccination interventions), given that belief in conspiracy theories are associated with socially (e.g., van Prooijen et al., 2018), economically (e.g., Salvador Casara et al., 2022), and politically marginalised groups (e.g., Uscinski & Parent, 2014). It is a wicked problem since the fundamental needs associated with belief in conspiracy theories are also those likely to be brought about during a global pandemic—the need for certainty, safety, and belonging (Douglas et al., 2017).

There are some limitations to our research. We caution our audience against a direct causal interpretation of the coefficients presented in Study 1b (Models 2 and 3). Any coefficient that we report in this study is predictive of vaccination outcomes *relative* to the 36 (or 42) other indicators included in each of our regression models on the logit scale. A common fallacy in regression analysis is to interpret the coefficients of multiple regression models as mutually independent total causal effects. This "Mutual Adjustment Fallacy" (Green & Popham, 2019), or "Table 2 Fallacy" (Westreich & Greenland, 2013) is unfortunately somewhat commonplace in the psychological, medical, and social sciences. In short, the coefficients presented here should not be interpreted as "like-for-like" total effect causal estimates, or even comparable estimates of association.

The NZAVS contains rich participant-level measures repeated prior to and during the COVID-19 pandemic, at a national-scale. This study is important because it reveals the extraordinary predictive power of NZAVS indicators prior to vaccination availability in New Zealand to forecast national-level vaccination rates following New Zealand's vaccine roll-out in late 2021. Overall, our results highlight meaningful diverse psychological and social mechanisms that underpin vaccinations decisions and underscore the importance for future research using the NZAVS.

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SUPPLEMENTARY MATERIALS

Table S1. Summary of Intercorrelations, Means, and Standard Deviations for all T11 predictors

	M	*(SD)*	*n*	1	2	3	4	5	6
1. Age	52.920	(14.096)	5324	1					
2. Gender	.378	(.485)	5285	.119					
3. Ethnicity Asian	.033	-	5324	-.127	-.010	1			
4. Ethnicity Māori	.084	-	5324	-.045	-.040	-.007	1		
5. Ethnicity Pacific	.024	-	5324	-.030	-.003	.047	.072	1	
6. Employed	.749	-	5292	-.319	.035	.041	.008	.008	1
7. GP Have	.925	-	5287	.161	-.032	-.024	-.013	-.011	-.050
8. NZ Dep	4.649	(2.705)	5304	-.042	-.018	.030	.118	.035	-.053
9. Parent	.705	-	5320	.455	.020	-.076	.014	-.002	-.082
10. Partner	.736	-	5261	.064	.102	-.036	-.042	-.021	.063
11. Religious	.296	-	5264	.098	-.033	.063	.007	.031	-.033
12. GP Cultural Respect	6.066	(1.195)	4963	.073	-.069	-.056	-.079	-.042	-.038
13. GP Similarity	4.981	(1.873)	4994	.147	-.004	-.114	-.157	-.078	-.034
14. GP Satisfaction	5.642	(1.413)	5010	.157	.001	-.046	-.039	-.003	-.059
15. Health Care Access	7.953	(2.192)	5315	.115	.025	-.018	-.061	-.016	.004
16. Hours Internet	16.382	(16.699)	5279	-.209	.018	.057	.057	.024	.004
17. Hours News	4.816	(5.237)	5279	.270	.052	-.027	-.045	.016	-.171
18. Hours Social Media	4.339	(6.749)	5279	-.191	-.126	.025	.072	.030	-.021
19. Education	6.060	(2.559)	5239	-.100	-.033	.060	-.075	-.010	.128
20. Political Identity Centrality	4.326	(1.812)	5222	.090	.037	-.018	.004	-.018	-.046
21. Political Orientation	3.374	(1.424)	5250	.149	.063	.020	.019	.004	-.045
22. Trust in Politicians	3.695	(1.463)	5282	.077	-.013	-.011	-.067	-.044	.012
23. Satisfaction with Govt	5.398	(2.832)	5315	-.013	-.157	-.008	-.003	-.012	-.005
24. Sense of Community	4.178	(1.659)	5307	.269	-.064	-.044	.006	-.017	-.070
25. Belonging	5.064	(1.121)	5306	.153	-.058	-.036	-.029	-.025	.019
26. Agreeableness	5.389	(.991)	5306	.035	-.289	-.020	-.021	-.019	-.020
27. Conscientiousness	5.148	(1.076)	5306	.083	-.070	.010	.016	-.005	-.016
28. Extraversion	3.755	(1.233)	5306	.034	-.043	-.017	.031	.013	.052
29. Honesty-Humility	5.633	(1.114)	5306	.215	-.118	-.032	-.044	-.030	-.104
30. Neuroticism	3.484	(1.203)	5306	-.244	-.116	.019	.033	.013	.013
31. Openness	5.110	(1.114)	5306	-.061	.061	.002	.015	-.007	.036
32. Meaning in Life	5.456	(1.255)	5322	.246	-.077	-.024	-.010	.010	<.001
33. Life Satisfaction	5.315	(1.236)	5312	.153	-.069	-.013	-.057	-.012	.012
34. Political Efficacy	4.484	(1.257)	5324	-.008	-.073	.027	-.007	-.001	.017
35. Trust in Police	4.554	(1.288)	5323	.089	.013	-.018	-.090	-.041	.020
36. Trust in Science	5.606	(1.235)	5310	-.063	.055	-.019	-.080	-.035	.044
37. SF Subjective Health Scale	4.998	(1.164)	5324	.075	-.007	.015	-.067	-.018	.095

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S1** continued...

	7	8	9	10	11	12	13	14	15	16
7. GP Have	1									
8. NZ Dep	-.054	1								
9. Parent	.128	-.057	1							
10. Partner	.037	-.181	.239	1						
11. Religious	.030	.037	.090	.004	1					
12. GP Cultural Respect	.155	-.053	.041	.013	.024	1				
13. GP Similarity	.105	-.111	.042	.037	-.003	.261	1			
14. GP Satisfaction	.207	-.064	.079	.009	.034	.436	.245	1		
15. Health Care Access	.131	-.120	.069	.124	-.004	.245	.142	.458	1	
16. Hours Internet	-.064	.065	-.157	-.098	-.041	-.029	-.054	-.049	-.039	1
17. Hours News	.053	.004	.082	.011	.001	.012	.030	.062	.042	.193
18. Hours Social Media	-.037	.100	-.117	-.088	<.001	-.017	-.07	-.051	-.056	.432
19. Education	.009	-.078	-.068	.054	-.017	.015	.045	-.008	.071	.051
20. Political Identity Centrality	.037	.001	-.015	.010	-.008	.040	.080	.045	-.002	.041
21. Political Orientation	.027	-.028	.131	.040	.274	.010	.008	.010	.008	-.125
22. Trust in Politicians	.044	-.062	.057	.039	-.007	.103	.110	.166	.223	-.029
23. Satisfaction with Government	.011	.060	-.033	-.071	-.065	.064	.029	.068	.112	.072
24. Sense of Community	.065	-.108	.221	.102	.059	.117	.091	.175	.188	-.140
25. Belonging	.059	-.099	.154	.176	.007	.196	.139	.221	.314	-.157
26. Agreeableness	.059	-.038	.064	.021	.054	.132	.087	.089	.067	-.049
27. Conscientiousness	.056	-.096	.094	.088	.039	.090	.061	.080	.118	-.146
28. Extraversion	.011	-.071	.070	.078	.018	.053	.049	.047	.092	-.042
29. Honesty-Humility	.023	-.001	.100	.022	-.007	.078	.049	.097	.104	-.111
30. Neuroticism	-.005	.078	-.172	-.051	-.015	-.077	-.053	-.152	-.222	.111
31. Openness	.008	.023	-.068	-.035	-.051	.040	.022	.009	.032	.100
32. Meaning in Life	.079	-.071	.244	.154	.122	.185	.107	.191	.275	-.17
33. Life Satisfaction	.037	-.137	.154	.228	.013	.172	.123	.210	.357	-.158
34. Political Efficacy	.016	-.014	-.019	-.010	-.037	.089	.061	.112	.134	.030
35. Trust in Police	.045	-.115	.098	.083	.067	.140	.104	.173	.248	-.099
36. Trust in Science	.018	-.096	-.069	.045	-.203	.105	.102	.112	.155	.072
37. SF Subjective Health Scale	-.017	-.100	.073	.077	-.005	.084	.073	.127	.236	-.133

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S1** continued...

	17	18	19	20	21	22	23	24	25	26
17. Hours News	1									
18. Hours Social Media	.111	1								
19. Education	.011	-.012	1							
20. Political Identity Centrality	.118	.036	.130	1						
21. Political Orientation	-.020	-.093	-.246	-.2	1					
22. Trust in Politicians	.082	-.035	.122	.077	-.130	1				
23. Satisfaction with Govt	.047	.089	.163	.102	-.401	.364	1			
24. Sense of Community	.072	-.090	.003	.079	.057	.160	.051	1		
25. Belonging	.029	-.098	.021	.015	.053	.196	.040	.369	1	
26. Agreeableness	.017	.055	.091	.067	-.143	.118	.181	.184	.244	1
27. Conscientiousness	-.007	-.113	-.037	-.082	.146	.058	-.045	.103	.267	.097
28. Extraversion	.029	.034	.044	.089	-.057	.091	.025	.240	.320	.201
29. Honesty-Humility	.030	-.093	.070	.018	-.087	.045	.104	.135	.147	.190
30. Neuroticism	-.073	.139	-.012	.009	-.047	-.145	.013	-.265	-.461	-.046
31. Openness	.012	.031	.233	.160	-.285	.035	.106	.034	.004	.200
32. Meaning in Life	.039	-.100	.101	.082	.081	.161	.030	.381	.531	.226
33. Life Satisfaction	.026	-.113	.079	.006	.042	.213	.069	.357	.567	.147
34. Political Efficacy	.058	.076	.175	.233	-.276	.363	.325	.153	.150	.172
35. Trust in Police	.042	-.095	-.001	-.094	.180	.373	.118	.155	.244	.029
36. Trust in Science	.069	-.011	.271	.147	-.293	.227	.197	.052	.106	.064
37. SF Subjective Health Scale	-.023	-.113	.044	-.023	.051	.100	-.017	.172	.331	.058

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S1** continued...

	27	28	29	30	31	32	33	34	35	36
26. Agreeableness	1									
27. Conscientiousness	.040	1								
28. Extraversion	.090	-.07	1							
29. Honesty-Humility	-.202	-.162	-.176	1						
30. Neuroticism	-.097	.161	.029	-.013	1					
31. Openness	.262	.240	.191	-.445	.083	1				
32. Meaning in Life	.236	.248	.189	-.45	.006	.652	1			
33. Life Satisfaction	-.010	.124	.046	-.066	.143	.155	.146	1		
34. Political Efficacy	.150	.043	.008	-.168	-.085	.172	.244	.139	1	
35. Trust in Police	-.029	.027	.074	-.056	.207	.033	.115	.245	.131	1
36. Trust in Science	.226	.131	.125	-.343	.020	.331	.396	.080	.152	.058

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

Table S2. Summary of Intercorrelations, Means, and Standard Deviations for all predictors from T13.

	M	*(SD)*		1	2	3	4	5	6
1. Gender	.379	-	5324	1					
2. Age	54.870	(14.054)	5324	.116					
3. GP Have	.932	-	5304	-.029	.147	1			
4. Employed	.733	-	5277	.012	-.388	-.058	1		
5. Ethnicity Asian	.036	-	5324	-.014	-.112	-.004	.031	1	
6. Ethnicity Māori	.089	-	5324	-.039	-.046	-.013	.005	-.010	1
7. Ethnicity Pacific	.028	-	5324	-.003	-.024	-.008	-.003	.059	.078
8. Religious	.274	-	5278	-.035	.073	.026	-.014	.061	.009
9. Parent	.726	-	5324	.016	.420	.068	-.086	-.077	.019
10. Partner	.729	-	5231	.106	.030	.055	.073	-.037	-.051
11. NZ Dep	4.635	(2.713)	5319	-.015	-.044	-.058	-.041	.016	.104
12. Trust in Politicians	3.819	(1.602)	5202	-.030	.040	.043	.018	-.003	-.054
13. GP Cultural Respect	5.978	(1.287)	5025	-.052	.092	.231	-.039	-.037	-.066
14. GP Similarity	4.872	(1.935)	5058	-.002	.125	.142	-.065	-.102	-.171
15. GP Satisfaction	5.603	(1.481)	5068	.006	.158	.256	-.058	-.019	-.017
16. Health Care Access	7.709	(2.393)	5311	.012	.134	.168	-.023	.007	-.059
17. Hours Internet	2.120	(19.714)	5132	-.019	-.251	-.031	.080	.053	.049
18. Hours News	5.436	(4.908)	5094	.043	.293	.052	-.207	-.006	-.030
19. Hours Social Media	5.154	(8.199)	5090	-.133	-.192	-.040	.018	.045	.060
20. Education	5.934	(2.652)	5297	-.045	-.163	.005	.132	.060	-.084
21. Political Identity Centrality	4.350	(1.774)	5210	.052	.071	.033	-.062	-.005	.020
22. Political Orientation	3.291	(1.345)	5227	.063	.157	.014	-.055	.018	.007
23. Satisfaction with Govt	4.981	(3.208)	5319	-.115	.013	.047	-.027	.007	.013
24. Sense of Community	4.286	(1.626)	5220	-.068	.257	.093	-.076	-.036	-.002
25. Agreeableness	5.361	(1.019)	5323	-.272	.025	.053	.001	-.028	-.032
26. Conscientiousness	5.137	(1.074)	5322	-.056	.094	.059	-.007	.003	.015
27. Extraversion	3.698	(1.231)	5321	-.029	.041	.045	.041	-.020	.028
28. Honesty-Humility	5.696	(1.11)	5323	-.096	.243	.038	-.135	-.037	-.055
29. Openness	5.101	(1.113)	5318	.077	-.036	-.010	.019	-.017	.012
30. Neuroticism	3.454	(1.225)	5323	-.119	-.276	-.014	.046	.029	.019
31. Belonging	5.061	(1.13)	5314	-.047	.164	.100	-.002	-.028	-.035
32. Meaning in Life	5.425	(1.266)	5300	-.048	.232	.086	-.026	-.024	-.013
33. Life Satisfaction	5.182	(1.281)	5322	-.033	.160	.077	-.015	-.013	-.057
34. Political Efficacy	4.307	(1.314)	5311	-.031	.004	.045	.021	.037	-.009
35. Trust in Police	4.415	(1.33)	5314	.018	.144	.063	-.017	-.020	-.100
36. Trust in Science	5.873	(1.202)	5294	.002	-.061	.066	.048	-.032	-.087
37. SF Subjective Health Scale	4.92	(1.183)	5323	.001	.064	-.027	.080	.005	-.061
38. Conspiracy Belief	3.922	(1.744)	5207	.019	.153	-.041	-.101	-.005	.070
39. COVID Exaggeration	2.417	(1.949)	5195	.098	.036	-.084	-.019	.006	.011
40. COVID Lab Leak	3.445	(1.993)	5252	.054	.100	-.039	-.022	.006	.026
41. COVID Trust Govt.	4.648	(1.981)	5214	-.108	.005	.070	-.014	.009	<.001
42. Disgust Sensitivity	4.089	(1.823)	5205	-.104	-.141	.001	.002	.085	.023
43. Health Locus of Control	4.901	(1.170)	5323	.043	.084	-.017	.045	.015	.021

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S2** continued...

	7	8	9	10	11	12	13	14	15	16
7. Ethnicity Pacific	1									
8. Religious	.033	1								
9. Parent	-.005	.074	1							
10. Partner	-.033	-.002	.237	1						
11. NZ Dep	.024	.035	-.067	-.191	1					
12. Trust in Politicians	-.033	-.062	.001	.011	-.052	1				
13. GP Cultural Respect	-.027	.012	.039	.042	-.06	.139	1			
14. GP Similarity	-.090	-.005	.035	.043	-.123	.119	.302	1		
15. GP Satisfaction	.012	.018	.065	.028	-.049	.175	.489	.264	1	
16. Health Care Access	.005	-.003	.034	.077	-.086	.260	.312	.175	.532	1
17. Hours Internet	.059	-.045	-.158	-.077	.073	-.007	-.044	-.059	-.068	-.015
18. Hours News	.038	.020	.092	.030	-.013	.098	.039	.041	.061	-.030
19. Hours Social Media	.084	-.001	-.093	-.059	.106	-.040	-.028	-.049	-.046	-.052
20. Education	-.016	-.027	-.102	.043	-.082	.155	.026	.040	-.006	-.002
21. Political Identity Centrality	-.002	-.022	-.032	-.011	.022	.093	.030	.059	.029	.006
22. Political Orientation	.016	.269	.145	.047	-.016	-.230	-.013	-.008	.015	.012
23. Satisfaction with Govt	-.010	-.087	-.064	-.081	.045	.567	.109	.080	.140	-.019
24. Sense of Community	-.025	.037	.224	.114	-.102	.133	.138	.100	.183	.043
25. Agreeableness	-.017	.067	.050	.015	-.027	.085	.107	.070	.075	-.133
26. Conscientiousness	.003	.031	.098	.084	-.105	.026	.104	.053	.112	-.045
27. Extraversion	.032	.007	.089	.085	-.070	.064	.06	.052	.063	.052
28. Honesty-Humility	-.037	.010	.098	.012	.006	.078	.058	.044	.068	.063
29. Openness	-.002	-.047	-.053	-.013	.007	.050	.044	.026	.007	-.115
30. Neuroticism	.010	-.029	-.179	-.051	.060	-.107	-.071	-.05	-.152	-.068
31. Belonging	-.031	-.002	.141	.168	-.095	.197	.212	.156	.232	-.272
32. Meaning in Life	.010	.121	.233	.165	-.081	.091	.168	.104	.187	-.056
33. Life Satisfaction	-.004	.020	.160	.239	-.125	.190	.189	.139	.238	-.029
34. Political Efficacy	.006	-.013	-.030	-.004	-.016	.433	.107	.081	.123	-.096
35. Trust in Police	-.016	.037	.092	.075	-.102	.371	.171	.124	.212	.077
36. Trust in Science	-.038	-.202	-.060	.068	-.096	.339	.152	.101	.157	-.119
37. SF Subjective Health Scale	-.017	-.009	.071	.098	-.110	.074	.08	.075	.118	-.047
38. Conspiracy Belief	.022	.079	.067	-.063	.055	-.413	-.084	-.063	-.095	-.048
39. COVID Exaggeration	.020	.059	.074	-.015	.038	-.280	-.101	-.083	-.110	-.033
40. COVID Lab Leak	.019	.115	.099	.002	.022	-.276	-.056	-.070	-.074	-.031
41. COVID Trust Govt.	-.027	-.072	-.063	-.072	.035	.589	.137	.101	.166	.018
42. Disgust Sensitivity	.027	.040	-.112	-.047	.044	-.036	.004	-.023	-.025	.002
43. Health Locus of Control	.018	.009	.073	.042	-.039	.032	.087	.039	.128	.001

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S2** continued...

	17	18	19	20	21	22	23	24	25
17. Hours Internet	1								
18. Hours News	.11	1							
19. Hours Social Media	.388	.086	1						
20. Education	.063	-.025	-.022	1					
21. Political Identity Centrality	.050	.102	.018	.139	1				
22. Political Orientation	-.126	.008	-.056	-.265	-.212	1			
23. Satisfaction with Govt	.050	.058	.020	.172	.092	-.397	1		
24. Sense of Community	-.120	.097	-.054	-.009	.079	.047	.049	1	
25. Agreeableness	-.012	.010	.034	.061	.051	-.125	.128	.163	1
26. Conscientiousness	-.123	.001	-.105	-.037	-.080	.140	-.017	.136	.108
27. Extraversion	-.019	.027	.045	.035	.106	-.049	-.007	.246	.198
28. Honesty-Humility	-.132	.058	-.114	.054	-.005	-.066	.119	.121	.181
29. Openness	.068	.002	-.004	.222	.141	-.265	.100	.032	.185
30. Neuroticism	.126	-.071	.133	.016	.025	-.058	-.009	-.284	-.025
31. Belonging	-.111	.054	-.085	.013	.035	.030	.078	.383	.202
32. Meaning in Life	-.148	.054	-.086	.070	.079	.076	.017	.389	.209
33. Life Satisfaction	-.149	.054	-.114	.050	.018	.040	.067	.365	.114
34. Political Efficacy	.044	.085	.033	.153	.239	-.265	.367	.162	.132
35. Trust in Police	-.134	.068	-.112	-.017	-.116	.131	.190	.177	.033
36. Trust in Science	.046	.062	-.029	.245	.110	-.302	.316	.064	.062
37. SF Subjective Health Scale	-.127	-.026	-.095	.026	-.037	.066	-.035	.174	.065
38. Conspiracy Belief	-.024	-.044	.023	-.195	-.038	.224	-.337	-.034	-.067
39. COVID Exaggeration	-.045	-.075	.014	-.16	-.076	.238	-.359	-.032	-.110
40. COVID Lab Leak	-.043	-.005	.002	-.213	-.056	.294	-.333	.001	-.069
41. COVID Trust Govt.	.046	.053	.017	.154	.089	-.354	.832	.069	.134
42. Disgust Sensitivity	.066	-.026	.075	-.017	.010	.035	-.018	-.076	.007
43. Health Locus of Control	-.108	-.029	-.043	-.125	-.060	.181	-.078	.174	-.005

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S2** continued...

	26	27	28	29	30	31	32	33	34	35
26. Conscientiousness	1									
27. Extraversion	.069	1								
28. Honesty-Humility	.077	-.086	1							
29. Openness	-.066	.144	.044	1						
30. Neuroticism	-.242	-.148	-.162	-.040	1					
31. Belonging	.283	.295	.147	.008	-.435	1				
32. Meaning in Life	.283	.252	.184	.101	-.446	.283	1			
33. Life Satisfaction	.252	.222	.170	.022	-.460	.252	.645	1		
34. Political Efficacy	.004	.108	.044	.153	-.069	.004	.162	.157	1	
35. Trust in Police	.165	.050	.041	-.073	-.181	.165	.181	.233	.130	1
36. Trust in Science	.006	.035	.052	.167	-.038	.006	.029	.102	.277	.204
37. SF Subjective Health Scale	.245	.155	.117	.024	-.336	.245	.315	.389	.078	.124
38. Conspiracy Belief	-.004	-.044	-.046	-.083	.034	-.004	-.025	-.109	-.270	-.234
39. COVID Exaggeration	.023	.001	-.069	-.082	-.024	.023	-.003	-.031	-.202	-.102
40. COVID Lab Leak	.029	-.010	-.101	-.079	-.011	.029	.019	-.044	-.191	-.056
41. COVID Trust Govt.	-.014	-.007	.112	.077	.001	-.014	.030	.090	.390	.232
42. Disgust Sensitivity	.011	-.062	-.145	-.078	.156	.011	-.101	-.096	-.015	-.036
43. Health Locus of Control	.212	.103	.023	-.039	-.240	.212	.274	.329	.106	.154

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

... **Table S2** continued...

	36	37	38	39	40	41	42	43
36. Trust in Science	1							
37. SF Subjective Health Scale	.031	1						
38. Conspiracy Belief	-.362	-.039	1					
39. COVID Exaggeration	-.353	.029	.325	1				
40. COVID Lab Leak	-.314	-.004	.349	.290	1			
41. COVID Trust Govt.	.374	-.033	-.384	-.413	-.362	1		
42. Disgust Sensitivity	-.043	-.109	.066	.001	.043	<.001	1	
43. Health Locus of Control	-.042	.493	.104	.142	.138	-.079	-.033	1

Notes. n = 5324. All correlation coefficients are significant at $p < .01$ where $r \geq .036$

New Zealand Counselling Psychologists' Views and Experiences of Using Telepsychology in Clinical Practice

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The use of telepsychology has become increasingly prevalent in the professional practice of psychology worldwide, particularly so in the context of the COVID-19 pandemic. Counselling psychology adopts a pluralistic epistemology that values the diversity of perspectives and takes a critical approach to research, theory and intervention, including recognition of the importance of debating the issues and understanding alternative views on telepsychology integration into the clinical practice. The current study sought to explore New Zealand counselling psychologists' views and experiences of using telepsychology. Thematic analysis of seven semi-structured interviews with counselling psychologists identified themes around the perceived benefits and limitations of telepsychology, the fit of this approach with counselling psychology, telepsychology as an adjunct, and the need for training. Findings from this study have contributed to the knowledge base on the use of telepsychology amongst psychologists and in particular counselling psychology.

Keywords: *counselling psychology; telepsychology; telehealth; New Zealand; qualitative research*

Introduction

Psychological care and support have traditionally been delivered in face-to-face therapy. The advent of technology-based communications created an opportunity for delivering psychological care remotely. Telepsychology is defined by the American Psychological Association (APA, 2013) as, "the provision of psychological services using telecommunication technologies" (p. 3), and in this study refers to both synchronous (eg teleconferencing) and asynchronous (eg email and text) approaches to service delivery. This method of delivering clinical service remotely enables access and reduces barriers to mental health intervention and therapeutic support for those populations that have difficulty accessing support (Godine & Barnett, 2013), assuming people have access to technology. In turn, telepsychology could help reduce disparities among those in need (McCord, et al., 2015) including people living in poverty or who experience stigmatization (Gulliver, et al., 2010); people who are unwell or disabled (Godine & Barnett, 2013); people suffering from disorders that lead them to withdrawal from others, such as, depression or social anxiety (Perle, et al., 2011). Furthermore, in the context of the COVID-19 pandemic, telepsychology has become a necessity for providing mental health support.

Effectiveness of telepsychology

In recent years, telepsychology has been building momentum, along with evidence that suggests its effectiveness (Thompson, 2016). Research indicates remote psychological care is effective and increases access (Hilty et al., 2013). A systematic review on telepsychology using video and phone demonstrated that it was effective for depression, anxiety and adjustment disorder (Varker et al., 2019), and a meta-analysis on the use of videoconferencing to deliver therapy concluded it had been used in a range of therapeutic modalities and diverse populations, was associated with good user satisfaction, and had similar outcomes to traditional in-person interventions (Backhaus et al., 2012).

Challenges associated with telepsychology

Delivering mental health care remotely may pose particular challenges in the clinical practice of psychology (Perle, et al., 2011). These can include potential impact on the therapeutic relationship, ethical concerns, and lack of training in using telepsychology in clinical practice.

Some authors have argued telepsychology could weaken the therapeutic relationship (Lovejoy et al., 2009) due to lack of physical "presence" (Castelnuovo, et al., 2003), and through not having access to full visuals/contextual cues of facial expressions, tone of voice and body language (Mallen & Vogel, 2005). Yet there is considerable evidence that delivering care remotely does not negatively affect the therapeutic relationship. Therapeutic alliance was found to be the same whether CBT was delivered by telephone or in-person (Stiles-Shields et al., 2014) and a systematic review reported similar treatment satisfaction and therapeutic alliance across remote and in-person delivery of care (Jenkins et al., 2015).

Limitations and ethical considerations relating to telepsychology and its usage in the clinical practice of psychology have been raised (Perle, et al., 2011). The lack of clear professional and ethical guidelines has resulted in ambiguity among clinicians in terms of their professional responsibilities including confidentiality, client privacy, security and risk management (Glueckauf et al., 2018; Perle et al., 2013; Evans, 2014).

However, increases in telepsychology in response to the COVID-19 pandemic has resulted in greater development of telepsychology guidelines and resources, including a scoping review to identify available telepsychology guidelines (McCord et al., 2020).

The need to train psychologists in telepsychology has been clearly identified in the literature. Whilst clinicians generally report positive attitudes towards remote delivery

of care (Connoly et al., 2020) and have had to embrace telepsychology in order to provide service during the COVID-19 pandemic, they noted insufficient training in this area (Knott, et al., 2020; Aafjes-van Doorn, et al., 2020). Furthermore, many accredited training programs do not incorporate course content on delivery of telepsychology (McCord et al., 2020). Training is particularly important for those therapists less experienced in remote delivery of care, may encourage a more positive experience and support effective future use of telepsychology (Aafjes-van Doorn et al., 2020). Incorporating telepsychology into training programs will assist clinicians with managing professional and ethical responsibilities in the practice of telepsychology (Glueckauf et al., 2018).

Counselling and telepsychology

There is limited research on counselling psychology and telepsychology. The core values of counselling psychology can provide therapists and researchers with a strong foundation to formulate and question procedures, limitations and ethical issues related to telepsychology, and to scrutinise, examine, evaluate and implement new modalities of service delivery (Mallen & Vogel, 2005). Furthermore, telepsychology fits well with core principles of counselling psychology: to counter disparity in mental health access; incorporate counselling psychology values into telepsychology training and education; promote social justice by integrating telepsychology in service delivery; incorporate cultural factors into telepsychology (Cooper, et al., 2019). Benefits of telepsychology training for counselling psychologists has been noted (McCord, et al., 2015), and a proposed curriculum based on benchmark competencies for integrating telepsychology into counselling psychology developed (Cooper et al., 2019).

The rapid increase in delivering psychological care remotely has been important and necessary in the context of the COVID-19 crisis. It has also been proposed that there is an opportunity for counselling psychologists to advance practice in telepsychology for the greater good (Cooper et al., 2019). However, there are areas related to telepsychology that still need clarification, including counselling psychologists' views on telepyschology use. The current study aimed to explore and document counselling psychologists' views and experiences of using telepsychology in their clinical practice within a New Zealand context. Findings from the current study aimed to fill a gap in the international and national literature on telepsychology and counselling psychology.

METHODS

Epistemological/Methodological Framework

Research was undertaken from within a post-positivist philosophical framework. This research paradigm is grounded in the ontological assumption that reality exists, that it is culturally and socially constructed, multiple, and only known probabilistically and imperfectly (Grant & Giddings, 2002). This post-positivist epistemological stance aligns well with the methodological framework of Qualitative Descriptive research (QD) used in the current study, as this methodology draws on the general tenets of naturalistic inquiry and recognises the effects of bias (Sandelowski, 2000). Qualitative methodologies seek to capture the myriad of subjective feelings, perceptions and meanings that are contextually tied to phenomena and experiences (Magilvy & Thomas, 2009; Neergaard, et al., 2009). Qualitative research also aligns well with the counselling psychology paradigm and is an elegant way of embracing the scientist practitioner model within the field. The research process facilitates the development of a psychologically sophisticated understanding of researchers' personality and viewpoint, and assists with the development of an empathetic respectful and curious ability to become fully immersed in the lived world of the research participant (Thorpe, 2013).

Participants

Registered counselling psychologists currently practicing in New Zealand or counselling psychology interns were eligible for the study. Potential participants were recruited through professional networks (the counselling psychology graduate registrar and the New Zealand Psychological Society Institute of Counselling Psychology Facebook group), and snowball sampling, a process of spreading the word about this study through social networks of people, who could assist by recruiting suitable participants from among their acquaintances (Heckathorn, 2011). From this outreach, seven counselling psychologists practicing within a New Zealand setting consented to participate in the current study. Participants were mostly female (six women and one man), and aged between 36 and 56. All participants were of European descent, with one also reporting African heritage. In terms of professional status, participants' length of registration as a psychologist within New Zealand ranged from between 6 months to 16 years; six of the psychologists were employed in either private practice or for a non-profit organisation or both; one was employed by a public health service. Whilst experience with using telepsychology was not an inclusion criteria, all participants in the study reported they used telepsychology to some degree in their clinical practice.

Procedure

Ethical approval was obtained through the Auckland University of Technology Ethics Committee. One member of the research team (CP) conducted semi-structured interviews at a location convenient to the participant (home, office) using an interview guide to lead the process. Participants were asked about their views on how telepsychology might fit within the paradigm of counselling psychology; when they would consider using telepsychology and in what situations they might be more apprehensive; their actual experiences of using telepsychology in their clinical practice; and their intentions and needs in regards to training in the area. The interviewer's professional background was counselling psychology. Interviews ranged from 45 to 60 minutes, were audio-recorded and subsequently transcribed and checked for accuracy. Participants were invited to review their individual transcript.

Analytic Approach

Transcripts were analysed using thematic analysis (Braun & Clarke, 2013), which permits an exploratory examination and provides a detailed and rich account of participant data by using participants' exact words. Thematic analysis is useful for analysing, identifying and reporting themes within the data and enables the reporting of the reality, meanings and experiences of participants (Braun & Clarke, 2013). An inductive approach was taken

that allowed for the natural development of themes, relative to the data set. The thematic analysis process followed the phases outlined by Braun and Clarke (2013). Initially, one team member (CP) became familiar with the interview transcripts and looked for potential themes. The researcher then undertook initial data coding by identifying interesting and meaningful aspects of the data relevant to the research question. This was followed by organising the codes into potential themes, and a subsequent cross-checking process with the other researchers (KvK, JF). Themes' names and definitions were developed and circulated to all authors, and further feedback and clarifications were incorporated. This review process led to the refinement of the themes and subthemes presented below.

ANALYSIS

The analysis of the seven transcripts revealed five major themes identified as: 1) Paradox between counselling psychology and telepsychology; 2) Benefits of tele-psychology; 3) Limitations of telepsychology; 4) Telepsychology as an adjunct; 5) Training needs. Each of the five themes had several corresponding sub-themes. These are presented in Table 1.

The first theme relates to the paradoxical view that arose universally among participants in relation to telepsychology and its fit with the counselling psychology paradigm. The majority (5 out of 7 participants) stated that telepsychology fits well with the counselling psychology paradigm. Counselling psychologists noted telepsychology as a medium was congruent with the values of counselling psychology in terms of the holistic and preventative focus, emphasis on context, being flexible and responsive, and by adopting psychological practice to benefit the client by implementing telepsychology where relevant.

> "*I think it can fit in the context of counselling psychology quite well as we do take that holistic whole-person approach and are responsive to the person and their situation*" (P2)

Participants also noted that telepsychology has the ability to provide additional support to clients and aim to prevent future problems, which is consistent with the preventative focus in counselling psychology. Psychologists noted that telepsychology can empower clients to seek support when they are triggered or to build/maintain resilience, and encourage clients to be their own therapist.

> "*I think it fits well into the preventative focus … for instance mindfulness… online resources and apps … enables them to really take it in their lives and run with it and I think ultimately that can really help to prevent further struggle in people's lives*" (P2)

On the other hand, one aspect of telepsychology was not considered to be a good fit with counselling psychology. All participants considered that the use of technology by way of a computer screen could detract from the therapeutic relationship.

> "*In terms of … the therapeutic relationship…I do find the screen a … barrier*" (P7)

This sense that the screen could negatively impact on the rapport and quality of the therapeutic relationship was considered inconsistent with the crucial importance counselling psychology places on therapeutic alliance between client and therapist.

So while most participants considered telepsychology generally provided a good fit for counselling psychology, it also created a paradox given telepsychology as a medium may not facilitate the importance counselling psychology places on the therapeutic relationship.

The second theme relates to participants' experiences of using telepsychology and describes the perceived benefits of using this approach. All of the psychologists referred to general benefits of telepsychology including access, flexibility, and additional resources.

Participants outlined that telepsychology could increase access for people who struggle to get into face-to-face therapy due to physical or psychological constraints (e.g., people with social anxiety, people without a car, people who travel, who live rurally or live with an illness/disability and working parents).

> "*I think that therapy should be accessible to everybody and if it's not possible to do that in person then I think there's nothing better than telepsychology. Access to health services is one of the biggest barriers*" (P7)

Alongside access, the flexibility inherent in the use of telepsychology was mentioned by the majority of the psychologists as an obvious advantage. Participants reported that telepsychology allowed them to adapt their clinical practice to the contextual and cultural needs of the client such as if a client with young children needed to stay home or for a young millennial client preferring telepsychology.

> "*That flexibility is a really good benefit…For the younger generation … That's going to be really important to be well versed in technology and different forms of telepsychology to help them relate*" (P2).

Similarly, the flexibility of telepsychology facilitated responsiveness when required. Several participants noted they were open to or have used video-conferencing when they or their client were travelling nationally or overseas in order to be responsive to the needs of the client.

"*I decided to offer a video-conferencing therapy to my longer-term clients' … so we did video calls while I was overseas*" (P4).

A final area identified as a benefit of using telepsychology was related to the availability of technology based resources.

> "*I might refer them to a good app if they are a really stressed person*" (P5).

The use of such resources was considered to be an important aspect of telepsychology by participants, with nearly all reporting they had recommended technology based resources to clients as a form of additional support outside of face-to-face therapy (e.g., mindfulness apps,

Table 1. Summary of Themes and Sub-Themes of the Thematic Analysis

	Themes	# participants who endorsed theme	Sub-themes	# participants who endorsed sub-theme
1.	Paradox between counselling psychology and technology	All	1.1. Fits well 1.2. The screen as barrier	5 All
2.	Benefits of telepsychology	All	2.1. Access 2.2. Flexibility 2.3. Additional resources.	All 5 6
3.	Limitations of telepsychology	All	3.1. Ethical issues 3.2. Technical issues 3.3. Different therapeutic context	All All 6
4.	Telepsychology as an adjunct	All	4.1. Strengthen the therapeutic relationship 4.2. Need for human connection 4.3. Suitability	All 4 All
5.	Training needs	All	5.1. Evidence–based telepsychology training 5.2. Practice and ethical guidelines 5.3. Practical/technical skills	4 5 All

websites, psychoeducation, YouTube, TED Talks and podcasts).

The third theme identified in the thematic analysis relates to the perceived limitations or concerns participants had in relation to the use of telepsychology. These included ethical and technical issues as well as the different therapeutic context created through using telepsychology.

All of the participants identified ethical issues as a limitation to using telepsychology in clinical practice. More specifically, issues of safety and risk, vulnerable groups and privacy were mentioned frequently. Participants described concerns using telepsychology with clients who were highly distressed or who were suicidal. Participants outlined vulnerable groups that were not suitable for specific telepsychology modalities (video-conferencing and computer automated programmes) due to risk and safety concerns, along with a lack of resilience and mental capacity. For example, clients with trauma histories (sexual abuse), highly distressed clients, emotionally volatile clients (personality disorders), clients with suicidality or clients who were unsafe (at high risk of harming themselves or doing harm to others). Delivering psychology remotely with this client group may be considered unethical, and could impact on the psychologist's ability to respond.

> "*If we were talking about video-conferencing for anyone who is … high risk or emotionally quite volatile … people sitting on … the borderline or any kind of personality disorder I probably steer away from .. video-conferencing.*" (P2)

> "*I don't think it would work in trauma…. because trauma has so much going on …sexual abuse trauma - so many little things can trigger a person and if they are doing an online course in their bedroom there's so many pitfalls there …. I want to ensure that they are safe so …. It's about being mindful of that, that's a potential drawback is not knowing the material well enough myself to be able to ensure their safety at either end*" (P4)

> "*I think one of the potential risks or challenges is if you have a client who is high risk or highly suicidal … if you are having a video-conferencing session with them they are not in the room and they act out …There's a lot more limitations*" (P2).

Participants also expressed concern about ethical issues related to privacy and confidentially when undertaking telepsychology. For example, two participants highlighted that the security of the videoconferencing platforms are a concern:

> "*I'm not really sure about video-conferencing itself and how secure that is –that's a bit of a worry…… I think that can be a problem if the client doesn't have a place to be able to kind of do that… and not be interrupted*" (P3)

> "*There are all sorts of problems with confidentiality that need to be ironed out… I don't video-conference any clients because we are not allowed* [participant employed within a national health service context in 2017]" (P6)

Another participant highlighted that clients may lack a private and confidential space to undertake telepsychology:

> "*There might be interruptions in the background or people's children coming in and out and people aren't able to talk so loud because they might have other family members sitting near or people could potentially hear them*" (P7)

Another limitation noted by participants was related to the technical aspects of using telepsychology. The majority (6 out of 7 participants) described technical

issues with computer/connection issues and their general lack of technological proficiency.

> "*When I video-conference sometimes the line goes down so that would be a worry for me*" (P1).

Despite not feeling fully competent in providing clinical services remotely, one participant had attempted to use video-conferencing.

> "*I couldn't get video-conferencing working last time so we did a phone therapy session*" (P3).

The third sub-theme on limitations of telepsychology related to the different therapeutic context when delivering care remotely. Nearly all of the participants observed changes when telepsychology replaced face-to-face therapy including an absence of non-verbal information, distractions, boundary issues and an overall sense the therapeutic frame/setting felt different. All four participants whom had used video-conferencing described that some information was absent when a therapist works using telepsychology modalities.

> "*I think there's just so much that you get from face-to-face that does go missing on video-conferencing… the amount of information and energy that is contained when you are in the room with someone is quite different*" (P2)

> "*There's a lot of things you don't see about a person, how they behave, facial expressions, how they hold themselves, all these things that give you so much insight into a person and how they are feeling that day so it becomes a little bit …it disappears a bit*" (P7)

These four participants also highlighted that the therapeutic context changes during video-conferencing in comparison face-to-face therapy, whereby these psychologists felt detached from their clients.

> "*There's this kind of disembodiment in the therapeutic experience and I think most of my clients would of felt that, like we both talked about it afterwards when we reconvened*" (P4)

> "*It feels quite removed when you are not in the same room as the person … things might be misinterpreted.... It's not as easy communicating with someone through video-conferencing*" (P3).

One participant mentioned there is increased potential for distraction and boundaries issues as well as experiencing a shift in the power dynamic in session.

> "You don't know what the client is doing while you are talking to them. They could very well be drunk, stoned or distracting themselves with other stuff" (P7)

> "*It almost becomes a bit more conversational than therapeutic that was what I found it was almost like… when you talk to someone on the video-conferencing usually it's a friend or family member you sit and chat and I found that it became more chatty rather than therapeutic*" (P7)

So far, the thematic analysis of the structured interviews highlighted participants generally considered there was a good fit between telepsychology and counselling psychology and considered both advantages and limitations to providing psychological care remotely. Interestingly, a fourth theme emerged from the data which in and of itself proposed a synthesis of some the earlier issues raised.

The fourth theme referred to telepsychology as an adjunct. Participants suggested that integrating tele-psychology within a more traditional face-to-face format could enhance delivery of care. Data analysis identified a subtheme that combining telepsychology with face-to-face therapy could strengthen the therapeutic relationship. This was noted by all participants, who expressed that there was a time and place for it where telepsychology can benefit, and even strengthen, the therapeutic process and outcomes.

> "*Telepsychology always has its benefits but ultimately if we rely completely on that there's always going to be something missing in terms of that person-to-person therapeutic relationship…but we can … use them both together wisely. So in that sense, we can use it to add value to the therapeutic relationship … to strengthen it*" (P2)

Another sub-theme identified was the need for human connection in psychological care. The majority of participants expressed the importance of real human connection and support for mental health difficulties.

> "*We have to keep that therapeutic relationship that human-to-human relationship at the front of everything we do*" (P2)

Participants (5 out of 7 participants) also highlighted that the need for face-to-face contact was particularly important during the initial contact before undertaking any form of telepsychology.

> "*I wouldn't do it with a new client because I don't feel that I know them well enough…I need a therapeutic relationship*" (P4)

It was unclear from the data whether the emphasis on human-to-human relationships directly excluded telepsychology, and several participants (3 out of 7 participants) were concerned that mental health stakeholders (e.g., clients, practitioners, organisation leaders, and politicians) may conclude telepsychology is the panacea of all mental health problems.

> "*I think it should be an adjunct rather than a be all end all. I think policy makers might potentially see it as a quick-fix solution.*" (P5)

The final sub-theme related to telepsychology as an adjunct was suitability. It was noted by all participants that the suitability of telepsychology in the clinical practice of psychology is dependent on the client and their presenting issues. They commented that psychologists need to consider carefully whether telepsychology is feasible and appropriate for the client, their context and their mental health challenges.

> "*I think there are probably clients that wouldn't like it at all. I think it would be good to provide it as an option rather than the only way*" (P3)

The fourth theme of 'telepsychology as an adjunct' describes some thoughtful considerations from

counselling psychologist participants about how they could utilise telepsychology, including the idea of using it as an adjunct to traditional face-to-face delivery of care. This may also apply during a pandemic or other circumstances when, by necessity, therapy needs to move online.

The final and fifth theme from the analysis highlights the training needs of counselling psychologists. All participants agreed that upskilling/training in telepsychology would benefit all counselling psychologists. This final theme encompassed three subthemes: evidence-based telepsychology training, ethical guidelines, practical /technical skills.

The majority (4 out of 7 participants) expressed that it would be beneficial for training to incorporate evidenced-based telepsychology modalities and outline relevant research. This included in relation to specific client presentations.

> "*It would be great to have some training available … about evidence-based sites or apps that would benefit my clients … what particular one's work best for what population groups.*" (P1)

The majority of participants indicated that clear practice and ethical guidelines from a counselling psychology perspective would be helpful in order to feel more comfortable and confident in administering telepsychology.

> "*There could be a set of clear guidelines around what exactly telepsychology is and how to implement it … having a specific … process or ways that it's practiced within counselling psychology*" (P3)

> "*I need to know about the ethical implications … how it might impact on the therapeutic proces*s" (P7)

All participants explicitly expressed they would like training on practical/technical skills relevant to telepsychology. For example how to deliver cognitive behaviour therapy or self-compassion therapy remotely, and developing e-resources. One of the points participants made multiple times was that they wanted training on practical video-conferencing skills.

> "*Training around again the technology side of things …for instance, video-conferencing …that's the main one because that's the main medium I could see myself potentially using…just how to conduct therapy over video-conferencing*" (P2)

Data also revealed that psychologists could benefit from training that incorporated learning from peer practitioners who were proficient in using telepsychology.

> "*Hearing from therapists who have done it, so them running a session where they can talk about the challenges or benefits they have and how they have overcome it*" (P6)

The findings representing the fifth theme of training needs reflect a clear interest and need for both knowledge acquisition and opportunities to enhance practice.

In summary, thematic analysis of the seven transcripts revealed several themes relating to counselling psychologists' views and experiences of using telepsychology in clinical practice. These included the general view that telepsychology can fit within counselling psychology paradigm; that participants considered various benefits as well as limitations to using telepsychology in clinical practice from a counselling psychology perspective; that telepsychology could be an adjunct alongside more traditional face-to-face therapy; and that counselling psychologists have clear training needs in the telepsychology space.

DISCUSSION

The current study aimed to explore and document counselling psychologists' views and experiences of using telepsychology in their clinical practice within a New Zealand context. Counselling psychologists expressed paradoxical views on the practice of telepsychology situated within the counselling psychology paradigm. They generally perceived telepsychology as having a good fit with counselling psychology values in terms of the preventative focus; the holistic whole-person approach to mental health; facilitation of social justice; emphasis on context and being responsive to client needs; and the scientist-practitioner approach to telepsychology as a modality. These findings were consistent with existing literature that indicated the core values of counselling psychology, with its emphasis on process and outcome research, equip counselling psychologists with skills to examine, evaluate and implement new modes of service delivery such as telepsychology (Mallen & Vogel, 2005; Mallen, et al., 2005; Mallen, et al., 2005), and that telepsychology fits well with the core principles of counselling psychology (Cooper et al., 2019).

Findings suggested less of a fit between counselling psychology and telepsychology in relation to the primacy of the therapeutic relationship. The predominant view of the counselling psychologists was that the screen detracted from the therapeutic relationship, and could result in miscommunication and misinterpretation. This perspective reflects other research that advocates the importance of the therapeutic relationship for successful therapeutic outcomes (Norcross & Wampold, 2011), and that new online modes of service delivery can negatively impact the psychologist-client relationship (Thorpe & Farrell, 2016; Lovejoy et al., 2009). At the same time, there is also evidence that delivering care remotely does not negatively affect the therapeutic relationship (Jenkins et al., 2015; Stiles-Shields et al., 2014), is associated with good user satisfaction, and has similar outcomes to traditional in-person interventions (Backhaus et al., 2012). More research is needed to investigate the process of telepsychology and the impact it has on the therapeutic relationship and therapy outcomes, especially within counselling psychology.

Advantages and limitations of telepsychology reported in the current study were consistent with those noted elsewhere in the literature. The counselling psychologists had all used telepsychology to some degree within their clinical practice, and identified advantages of delivering care remotely consistent with the counselling psychology paradigm. For example, increased access to therapeutic support was considered an important advantage. This finding was similar to other reports that telepsychology increases access to mental health services and reduces barriers for people (Godine & Barnett, 2013;

Perle, et al., 2011), and is aligned with core principles of counselling psychology (Cooper et al., 2019). Furthermore, while this study was carried out prior to the current pandemic, COVID-19 has been a major constraint to in-person therapy and telepsychology has offered a useful alternative for providing access to care.

Limitations of telepsychology commonly reported in the literature include ethical and professional concerns (Perle, et al., 2011; Glueckauf et al., 2018; Perle et al., 2013; Evans, 2014). Counselling psychologists in the current study raised similar concerns, and proposed the integration of telepsychology within a more traditional face-to-face format as one way to overcome some of the limitations of delivering psychological care remotely. Combining both approaches has been suggested by other authors (Grassi, et al., 2009; Reid et al., 2013; Riva, et al., 2007). Where this may not be possible, such as in the context of a pandemic like COVID-19, psychologists need to be proficient in providing clinical services remotely. This highlights the need for training and research in how to best transition from one mode of delivery to the other, and how to build and maintain the therapeutic relationship if remote service delivery is the only option.

Whilst participants had used telepsychology in their practice, they all agreed there had been a lack of training in the area and that upskilling in telepsychology would benefit counselling psychologists. Insufficient training in this area had been noted prior to the pandemic (Knott, et al., 2020; Aafjes-van Doorn et al., 2020). The preference for using telepsychology as an adjunct suggests an area for training might also focus on how to transition from one mode of delivery to the other whilst building/maintaining a sound therapeutic relationship. Psychologists also need to actively keep up to date with guidelines, legislation and policies, relating to telepsychology and privacy (Gamble, et al., 2015).

It is interesting that despite the call for specific telepsychology training, many accredited training programs have not incorporated course content on remote delivery of psychological care (McCord et al , 2020). Incorporating telepsychology into training programs would support clinicians with managing professional and ethical responsibilities in the practice of telepsychology (Glueckauf et al., 2018). A proposed curriculum based upon the benchmark competencies for integrating telepsychology into counselling psychology has been developed in the United Kingdom (Cooper et al., 2019), and could potentially be adapted for other countries and contexts. For example, in a pandemic, face-to-face psychological care may no longer be a certainty and counselling psychology could take a lead in promoting and developing the best possible approaches to telepsychology. A set of practical and ethical guidelines concerning the integration of telepsychology into clinical practice for counselling psychologists and other mental health professionals could be established to promote a cohesive practice in this area.

Findings from this small-scale study need to be interpreted cautiously given the size and homogeneity of the sample, and do not necessarily represent the views and experiences of telepsychology in counselling psychologists universally. While all participants reported they had used telepsychology to some degree in their clinical practice, little is known about the nature of the remote delivery of care they had used and whether they had received any training in the area. The fact that all participants identified strongly with the need for training does suggest they had not participated in any formal telepsychology training. Despite these study limitations, the findings regarding telepsychology are likely relevant to practicing counselling psychologists more broadly.

There are a number of potential future research directions that follow on from the work already completed. It would be of interest and relevance to investigate: client experiences of telepsychology; the effectiveness of telepsychology as an adjunct to face-to-face therapy within the counselling psychology scope; the process of telepsychology and its impact on the therapeutic relationship from a counselling psychology perspective; aspects of the therapeutic process such as client's and therapists' experience of the change from face-to-face to telepsychology; the benefits and risks inherent in the use of telepsychology. Once telepsychology training programmes are developed and implemented, it would be useful to evaluate what effect these have on counselling psychologists' confidence, competence and use of telepsychology.

In summary, this study investigated counselling psychologists' views and experiences of using telepsychology in clinical practice. It has contributed to the limited body of literature on telepsychology by providing a unique practice-based counselling psychology perspective from within a New Zealand context. Face-to-face psychological care, particularly in the pandemic era, may no longer be the only way to provide psychological care and support. Telepsychology, and approaches that integrate face-to-face with remote delivery of care, are likely to become an important aspect of psychological service. Counselling psychology could make an important contribution to research and development of approaches and training in telepsychology and thereby offer the best possible quality of care for clients.

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Māori voices in healing childhood maltreatment and breaking the cycle of family harm

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Psychologists in Aotearoa are frequently tasked with addressing the adverse outcomes of childhood maltreatment and family harm perpetration. Opportunities for hope and healing proffered by Indigenous practices are under-utilised in mainstream psychology. Through purposeful sampling, 16 semi-structured interviews with adult perpetrators of family harm were undertaken, seeking to explore the relationship with experiences of childhood maltreatment. This paper focuses on the interviews provided by 8 Māori (Indigenous people of Aotearoa) participants. Findings revealed two main themes entitled 'Culture of Silence' and 'Pathways to Wellbeing'. The wāhine (women, n=4) and tāne (men, n=4) described being isolated and silenced by adults within their home and community settings. The culture of silence was pervasive, as evident in the lack of inter-agency communication, further silencing Māori voices. Cultural beliefs and healing practices helped interrupt the intergenerational transmission of trauma and family harm. Three core concepts emerged as key to stopping family harm and helping heal adverse trauma outcomes as identified in the words of the participants: Wairua (spiritual connection), Pou (becoming a symbol of strength and support for self and others), and Tūrangawaewae (finding a sense of belonging). The findings are in unison with previous research highlighting the multiple pathways to wellbeing Indigenous knowledge and practice provide to stop the intergenerational transmission of trauma and violence.

Keywords: *Childhood maltreatment; family harm; intergenerational trauma and violence; Indigenous psychology.*

Introduction

The adverse effects of family harm reverberate through individuals, families, communities, and generations in multiple and detrimental ways (Kahui & Snively, 2014; Goddard & Pooley, 2019; Lambie, 2018). For these reasons, it is crucial that psychologists strive to understand the relationships between childhood experiences of maltreatment and family harm perpetration to stop the devastating cycle. The enduring consequences of intergenerational trauma and violence echo through Indigenous populations (Brave Heart & DeBruyn, 1998; Drywater-Whitekiller, 2014). Indigenous researchers have long highlighted the utility of drawing upon cultural knowledge when supporting people's psychological wellbeing (Glover & Hirini, 2005; Milne, 2005; Valentine et al., 2017). Yet, mātauranga Māori and kaupapa Māori models of health and wellbeing are not widely employed in mainstream psychological practice (Bennett, 2017; McNeill, 2009; Muriwai et al., 2015; Pitama et al., 2007). This paper explores the relationship between childhood maltreatment and family harm perpetration and pathways to wellbeing.

Indigenous consideration of human psychology has long been a bedrock of knowledge and understanding (Nikora et al., 2006; Levy, 2016). The significance of Indigenous psychology for Māori has long been highlighted in Māori models of wellbeing such as Te Whare Tapa Whā model (Durie, 1994); Te Wheke (Pere, 1984), Meihana Model (Pitama et al., 2007), Whānau Rangatiratanga framework (Superu, 2016; 2017), Te Pauawaitanga o Ngā Whānau model (Durie, 2001). Kaupapa Māori models contain a wealth of knowledge regarding family systems and the interconnected nature of intergenerational wellbeing. Indigenous researchers Pihama, Miller, Greensill, Te Nana, Campbell and Lee-Morgan (2021) highlight traditional Māori and Hawaiian childrearing practices focused on wellbeing through loving, nurturing, and collective childrearing practices. McLachlan, Waitoki, Harris and Jones (2021) presented the Whiti Te Rā model for Māori practitioners to guide whai ora Māori (Māori clients) through traditional pathways to wellbeing.

Colonisation interrupted the passing on of traditional knowledge and disrupted the configuration of whānau and social bonds for Indigenous populations (Cavino, 2016; Ruwhiu et al., 2009). To understand the impact of historical trauma, we need to look beyond the individual to acknowledge the cumulative emotional and psychological effects across generations (Pihama et al., 2014; Wirihana, 2014). Being placed in the care of the state results in loss of ties to cultural knowledge, practices, identity (Aboriginal Children in Care Working Group, 2015; Office of the Children's Commissioner, 2015). Gram, Gulliver, Ota and Wislon (2015) illustrate that the adverse effects of colonisation and systemic bias are part of the explanation regarding the overrepresentation of

Indigenous children in the state's care. The recent public outcry about the removal of tamariki (children) Māori from whānau provided the impetus for the recent inquiries into state care and protection policies and practices (New Zealand Government, 2018; Office of the Children's Commissioner, 2020).

Researchers and practitioners across disciplines endeavour to understand the relationship between childhood experiences of maltreatment and family harm to inform prevention and postvention strategies (Kimber et al., 2018; Lamotte et al., 2018; Reid & Sullivan, 2012; Semiatin et al., 2017). To do this successfully, psychologists must take time to evaluate the theories that inform practise critically. For non-Māori psychologists in Aotearoa, this means actively engaging with mātaurangi Māori and Indigenous psychology. On an individual practitioner level, this allows non-Māori psychologists to enact the Treaty of Waitangi principles of participation and partnership outlined in the Code of Ethics New Zealand Psychological Society (2002), the Continuing Competence Programme (New Zealand Psychologist Board, 2018) and the Health Practitioners' Competence Assurance Act (Ministry of Health, 2019). On a service delivery level, the expectation of comprehensive and collaborative assessment and treatment development with Māori embeds the basic principles of participation and partnership as the core foundation. However, the principles outlined in these guiding documents only present the baseline for best practice expectations. Without the deeper exploration and understanding of Mātauranga Māori and Kaupapa Māori models, non-Māori practitioners' risk only using these models at a surface level, restricting the potential healing properties inherent in these models (McLachlan et al., 2021).

Examining the relationship between childhood maltreatment and family harm perpetration within existing data samples and self-report questionnaires provides important information about prevalence. However, research that merely outlines prevalence does not explain contributing factors for the overrepresentation of Māori and other Indigenous populations in the cycle of family harm. Exploring the lived experience of the intergenerational transmission of trauma and violence through qualitative research allows for an in-depth exploration of experiential understanding. Methodologies that centre on collaborative approaches to facilitate examining the intertwined contributing factors, such as the impact of nurturing or inhibition of cultural identity and knowledge. Therefore, we need more research to understand better the relationships between childhood experiences of maltreatment and family harm to guide the development of targeted individual, group, and community interventions. This study elicited retrospective personal narratives from adults regarding their insights into the relationship between childhood maltreatment and the perpetration of family harm.

METHODS

Design and Methodology

The current study employed a semi-structured interview format that allowed for a flexible approach to exploring interviewees' thoughts regarding the relationship between childhood maltreatment experiences and family harm perpetration. The research was approved by the Human Research Ethics Committee of Te Whare Wānanga of Waikato The University of Waikato (Health; 2018#56). The current study is part of broader doctoral research undertaken by the lead author (KDR) who is a non-Māori clinical psychologist who has worked in the area of childhood maltreatment and family harm for 20 years. Key motivations for undertaking this research were moral and ethical drivers to inform and challenge her clinical practice in the context of working alongside whai ora Māori and in her role as a teaching fellow educating undergraduate and graduate students in mental health and wellbeing. The research panel consisted of three women who regularly reviewed the research process, giving primacy to the people's psychological wellbeing. At the beginning of research development, a male advisory panel was established to provide a gender balance to review the analysis (suggested by our central recruitment agency). It included two kaumātua (Māori elders) to help guide and shape the research throughout in terms of culturally safety and utility. Braun and Clarke's (2006; 2013) six-step interpretive thematic analysis was utilised to analyse the interview content. This approach allowed an iterative process to identify common themes in the interviewee's responses regarding the relationship between childhood experiences of maltreatment and family harm perpetration. The emerging analysis by KDR was also discussed within individual cultural supervision, under the guidance of co-author BMA, and with the aforementioned kaumātua to challenge mainstream assumptions and facilitate an Indigenous lens to the thematic analysis.

Inclusion criteria: To participate, people had to be 25 years or older to allow for broad retrospective reflection regarding their experiences of the relationship between childhood maltreatment experiences and family harm. Participants self-identified experiencing childhood maltreatment including one or more of the following forms of abuse: physical; sexual; emotional; neglect (emotional or physical); and had caused family harm that was either known to the justice sector or was self-reported. The term family harm was chosen to be consistent with Aotearoa legal terminology and encompass all forms of harm, such as coercion, emotional and verbal abuse towards family members.

Recruitment: Three key agencies in the-North Island of Aotearoa that provide assessment and treatment for people who met the selection criteria were contacted regarding recruitment for this study. Initially, information about the research was sent to relevant agencies via a Service Provider information Sheet, inviting them to contact the lead researcher (KDR) with any questions before providing written agency consent for recruitment. Approximately 70 counsellors, psychologists, and social workers within each agency were given participant information sheets and flyers (electronically and hard copies) to invite eligible people to participate.

Participants

Eight Māori participants, 4 tāne (men) and 4 wāhine (women), were recruited with an age range from 40 to 60 years. The people interviewed identified their iwi (tribe) connections which covered Ngāpuhi from the Te Tai Tokerau (Northland) region, through to Waikato Tainui,

Ngāti Maniapoto, Te Arawa, Tūhoe, Ngāti Porou, Ngāti Tūwharetoa and Ngāi Tahu (South Island region). Each participant either chose their pseudonym or a pseudonym was assigned before transcription with ongoing care to remove any identifying information.

Interview Process

People interested in participating in this study contacted the main researcher (KDR) via email or phone directly or through their key worker. Prospective participants were invited to talk with the researcher about the Participant Information Sheet and have any queries answered. The interview date and time were arranged, and contact was made the day before reconfirming this was still suitable. All interviews were conducted by KDR in a private office space organised by the recruitment agency or their key worker. Those interviewed were invited to bring whānau or support people with them to be part of the process if they desired. Key workers were informed of the day and time of the interview to ensure the availability of post-interview debriefing should that be required. Three of the four wāhine and one of the tāne interviewed asked their counsellor/psychologist to remain in the room for the interview process. One person invited whānau to remain during the interview process, and two had whānau meet the interviewer and chose to wait in another space when confident the interviewee was safe and informed about the interview process. The confidentiality of the interview content and each person's identity was assured unless they disclosed that they were at imminent risk of hurting themselves or others. In one instance, in consultation with the participant, a key worker and counsellor were informed that the interviewee had expressed recent suicidal thoughts and the study safety plan was employed. Upon follow up, this person reported feeling supported and encouraged by the process to tell their therapist about issues contributing to suicidal thoughts.

Before commencing the interview, the information sheet was reviewed with participants and any questions answered before obtaining consent. A karakia (prayer) or whakatauki (proverb) was recited (either by the researcher or participant) before and after the interview process to help create a safe space consistent with cultural protocols. A flexible semi-structured interview format was followed, exploring how maltreatment experiences as children had affected them personally and the relationship, if any, with later adverse life outcomes, including the perpetration of family harm. Thus, allowing the interviewee to lead the interview process with prompts from the interviewer to further explore pertinent issues. The interviewees were asked to reflect on the and relationship to childhood maltreatment and perpetuation of family harm were discussed. Near the end of the interview, the focus moved to what advice and wisdom they would like to pass on to others with similar lived experiences and the professionals working in this field. As an acknowledgement of participation, everyone interviewed was provided with a $30 supermarket voucher and were provided with the contact details of a range of services available if they required support at any point. The day after the interview, participants were contacted as part of a wellbeing check and reminder of supports available.

Data Analysis

All interviews were audio-recorded to allow for transcription. Braun and Clarke's (2006; 2013) interpretive thematic analytic approach was utilised to analyse the interview content. This approach allowed an iterative process to explore the themes emerging from the interviewee's responses regarding the pathways between childhood maltreatment and family harm. The analysis was led by the first author and interviewer (KDR) with regular input from the second author (BMA) and co-authors (KR and NS). The male advisory and kaumātua group were also engaged in discussions about the emerging findings (not given access to raw data or interview transcripts) to provide input regarding responsivity and relevance to Māori.

A summary of the key points from each interview transcript was collated, including pertinent quotes. The summary was then sent to each participant to confirm accuracy, gain permission to use the quotes in research reports, and encouraging them to add or change anything they deemed pertinent. Opportunity to meet or talk through the summaries was offered to facilitate a collaborative research approach 'with' the participants. Participants were kept informed about what was happening with the progress and nature of the research analysis at regular intervals. Interviewees engaged invited to engage in regular communication and provided feedback about what should be included in subsequent presentations and publications. These strategies aimed to provide a collaborative nature to the research. Near the end of the research project, interviewees and key workers attached to the recruitment agencies were invited to attend an interactive workshop where findings were presented. Care was taken to ensure that interviewees were not identified throughout, instead were part of the wider audience gathered under the auspice of presenting findings and seeking feedback from people interested in stopping the intergenerational transmission of trauma and violence.

ANALYSIS

The wāhine and tāne interviewed described multiple experiences of maltreatment that were ignored and actively silenced, contributing to a culture of silence surrounding childhood maltreatment evident on individual and systemic levels. The neglect of physical and emotional needs was manifest during interactions with social services, amplifying cultural isolation as children. However, intergenerational patterns of trauma and violence were disrupted by reconnection to cultural identity and mātaranga Māori. The following section outlines the critical interview findings for the four wāhine Māori, and four tāne Māori interviewed captured in the themes entitled 'Culture of Silence' and 'Pathways to Wellbeing'.

Culture of Silence

One of the main threads throughout the interviews was that the wāhine and tāne interviewed did not feel like they were heard. This experience's breadth was pervasive emerging from within their living environments as children through to the professional and government agencies involved in their lives. The descriptions did not

reflect the commonly referred to 'code of silence' around abuse but rather a systemic culture of silence.

No-one stopped it: The first sub-theme of the 'Culture of Silence' was given the title of 'no one stopped it.' As children, the wāhine and tāne described being ignored when they disclosed abuse and the adults minimised what they were saying, thinking, and feeling. Childhood experiences of being ignored were amplified by the lack of intervention on the part of adults to stop the abuse by the adults charged to care for them (such as family, teachers', and social service employees). Three of the interviewees were removed from whānau as babies and two in mid to late childhood. For the 4 interviewees removed from whānau and placed in non-whānau placements experiences of abuse and neglect occurred at the hands of people charged with their care such as foster parents and group home staff. The lack of intervention was confusing and disturbing when recalling the severity of their physical injuries that included bruises and lacerations, to broken bones in some cases. Manaia was removed from his parents and subsequently placed in multiple foster homes, wherein all but one he was sexually and physically abused. The following is an example of the lack of communication between professionals acknowledging Manaia's pain and suffering.

> *"I've been to fuckin* ***[over 40]*** *schools in my life…. I wasn't settling well in them so they* ***[school and social welfare agency]*** *were moving me from school to school cause schools couldn't handle me…. nobody asked why I was the problem you know. We'll try this school then you know I got a hiding if I got sent home.... I'm more angry now* ***[as a grown man]*** *at the system because I'm more aware of what was going on, what wasn't going on and what could have happened and those things weren't happening because nobody was listening to a 7-year-old, nobody was doing what I wanted to do, nobody came and said to me…. are you happy here* ***[in foster placement]****?" Manaia*

For any child having to adjust to a new school, new rules and routines and make new friends are a big step and stressful life event. Children in care often change schools a to move closer to their new placement (described by the tāne who were in the care of the state), and the above quote from Manaia puts into words how challenging this can be. As an adult reflecting on his childhood experiences, he recognised that the reason for the changes was not addressed. Furthermore, engagement in a transition process to each school in a meaningful and developmentally appropriate manner did not occur. The more critical realisation for Manaia was regarding the way adults charged with his care framed him as bad, punishing him and changing schools rather than seeking to understand what was happening to him. Had those adults provided Manaia with appropriate support that sought to understand the underlying problem (the abuse inflicted upon Manaia) adulthood may have been very different.

Childhood isolation: A sub-theme of the culture of silence was entitled 'childhood isolation' and captured repeated experiences of being physically and emotionally isolated from others (neglect). As a child, being isolated contributed to behaviours that maintained a distance from strength-based connections that would have enabled positive attachment and emotional development. More specifically, being ignored meant being taught to ignore their own needs and wants as children. Furthermore, positive role-modelling regarding relationships were not regularly observed or personally experienced. The sense of being invisible as a child resulted in the interviewees at times withdrawing from intimacy and love in various ways as apparent in the following quote from Daphne.

> *"I didn't know what love was…. How to receive love and how to give love are two different things, um how to accept love, self-love, self-worth. I did not have those back then you just got on with it." Daphne*

This led to a form of silencing of their own needs and wants that was evident when describing scenarios of family harm. For example, Nikau attributed the abuse he experienced in multiple care and juvenile correctional settings with feeling void of emotions. He attributed ongoing issues with feeling and expressing emotions with instances of family harm particularly struggling to process the emotions of family members and partners in his life.

> *"How things were, um when growing up it* ***[physical, emotional, and sexual abuse in care]*** *had affected me, because it affected me mentally, emotionally, and how I dealt with life, um at that young age…. It affected my youth, 20s, 30s. Sometimes a lot of it* ***[emotion]****, it was like a void, there was a big void, silly as that sounds, but it was like that too." Nikau*

Our analysis of the transcripts revealed an extra layer of systemic neglect evident in the information provided by reflecting a lack of intervention from the schoolteachers and social services. For example, all the Māori tāne interviewed were removed from their family of origin and placed in non-Māori run foster or adoptive homes. The neglect of Māori identity and connection to whānau, hapū (kinship group) and iwi (extended kinship group) lead to a deep sense of loss. Caleb was placed with a non-Māori family when he was a baby and described a sense of isolation, rejection, and shame about this amongst his friends at school.

> *"Oh, yeh that, the whole me being brown and them being white* ***[adopted parents],*** *that was the main thing when I was going to school. Hey, you've got a white mother and, yeh, you know. But I didn't know how to answer it…. but I had always brought that thing that I was ashamed because I had a different mother and yeh that was the start of my journey, the downward spiral I think and being rejected." Caleb*

Ultimately, what was evident was an additional level of cultural isolation on top of a childhood that was characterised as isolated. As adults looking back, there was a palpable sense of grief at the loss of not only knowing and living with whānau, but of a lost connection and relationship with their whenua, ancestors, hapu and iwi. In addition, they were losing opportunities to learn established kawa and protocols for managing the

complexity of family life. Moana, was not told her true ethnicity by her adoptive parents, completely denying her access to her cultural identity. Thus, representing another layer of silence and isolation through the lack of acknowledgment of her cultural heritage.

> *"I had no whakapapa…. I felt really just there…. then I was gifted my whakapapa … So, my identity played a huge role in my wholistic wellbeing, not just for me but for my descendants…. They want to hear the stories; they want to know where I've come from…. With that identity came the whakapapa of health, mental health you know what they were like, which you know is really important too." Moana*

In this quote, we can see that eventually knowing her whakapapa (genealogy) was a gift that opened to Moana the wealth of kaupapa Māori values and principles she found essential to her adult journey towards healing and wellbeing. The wāhine and tāne were clear that stopping the intergenerational transmission of trauma and violence was a hard and an ongoing process but were steadfast in a commitment to protect and nurture future generations. The following section summarises the key aspects the people interviewed attributed to changing the trajectory from psychological distress, trauma, and violence to stopping the intergenerational transmission of trauma and violence.

Pathways to Wellbeing

Freedom in adulthood to engage in te ao Māori were associated with personal wellbeing and improving interpersonal and familial relationships. The following section summarises the 'pathways to wellbeing' interviewees described that gave them a voice to talk about their lives and make sense of their childhood experiences of maltreatment and how these impacted them as adults. Each person had their own journey towards wellbeing and stopping the cycle of harm, but all started out on this journey to change for the benefit of their children and younger family members. The nature of structural supports that helped varied, for instance, Candace found becoming active in the life of her marae essential to helping her continue to heal. Caleb found engagement with faith-based social networks with others who had similar life experiences very beneficial. Three core concepts emerged in our analysis that encompassed the pathways to wellbeing: Wairua, Pou, and Tūrangawaewae. These headings are derived from the words of the participants and illuminate their understanding of the concepts, and thus may or may not reflect accepted translations/understanding of these words.

Wairua (spirituality): A crucial step in facilitating the transition from feeling isolated and ignored was enhancing an understanding of wairua. A spiritual connection to the land was a source of rejuvenation and strength essential for the eight people interviewed mental health and wellbeing. Hence, incorporating time in nature, whether in the bush, mountains, river, or beach, was part of their wellbeing strategies. As part of understanding, cultural identity came with a reconnection to ancestors who were present unconditionally, resulting in a sense of belonging and support via a spiritual realm. The importance of spiritual connection is evident when Aroha attributed her tūpuna (ancestors) for saving her life in many ways.

> *"I think one of the things that does get a lot of people who have experienced trauma, though, is wairua, so the fact that we don't talk a lot about that, or we talk about it in colonising ways, is really, I wouldn't have gotten here if it hadn't of been for my ancestors." Aroha*

The presence of a spiritual realm provided a source of unconditional listening even when they were hurting themselves and others. Indeed, this provided an essential source of steadfast support, a stark contrast to their childhood experiences. Both the wāhine and tāne described communicating with tūpuna as children over the course of time. Thus, spiritual connections provided a sense of protection and strength that was absent during childhood, as highlighted in the following quote from Moana:

> *"In the end I'm saying son…. the only people you need to trust is your tūpuna…. that know you. They are the only ones that are driving you….. That's what I do, that's who I trust. Like when I get an A+ I take it up to my Tūpuna who are on my wall and I celebrate with them." Moana*

For three of the people interviewed, the spiritual connection identified was with God (from differing religious beliefs systems). For example, after being in and out of juvenile residential facilities and prison, Caleb said that he began to change when he "met" God in prison. In the following quote, we can see that Caleb found a place to belong in his spiritual connection) with God and the family of Christian tāne who continued to walk alongside him.

> *"My rejection and my sexual abuse that really that I covered with all the drugs that I didn't want to face. At the time I was going through* **[a faith-based]** *counselling realising I wasn't to blame, and other people encouraged me. That's where I started getting free from all my anger and just people loving me for who I am and understanding and that's a lot of my journey was I needed someone to hear…. I have helped people that abuse other people and I won't look at them like I want to give them a hiding or something, I just say to them you need help, you need help." Caleb*

Caleb was steadfast in his commitment to creating a safe home for his partner, tamariki, mokopuna (grandchildren), and helping other men wanting to stop the intergenerational transmission of trauma and violence. This commitment was evident in the interview content of the others and is explored in the following section entitled Pou.

Pou (steadfast and reliable): A link between engaging with cultural identity to locating their voice was a key aspect of healing and interrupting the transmission of trauma and family harm. Nevertheless, it is essential to acknowledge that it was more than a desire to stop family harm rather a steadfast commitment to being a point of

change in the family and a facilitator of the transmission of health and wellbeing. Daphne's quote highlights her journey towards change by understanding her role in her children and grandchildren's life as one of safety and consistency. Like Moana's message to her son, Daphne talked to her children about learning to become their own Pou.

> *"Inconsistency is huge, I think in my generation…. Our kids don't know to trust us because we are supposed to be their Pou…. we are supposed to be who they come to….. They're all trying to find somebody to love. So that's their consistency there, their Pou is the other person. They're trying to make the other person their constant, their base, their foundation, their everything. Now they're coming to me going mum what do I do…. I've been able to stand in my truth and be consistent in it, and they're starting to trust me." Daphne*

Daphne articulated her realisation that she can rely on and validate herself and in turn, act as the cornerstone that can now exist for her children and her mokopuna to change the patterns of violence that existed before. To validate themselves and not seek validation in from others is the essence of this quote, a concept of challenging a belief system not dissimilar to that used within psychological cognitive and schema therapies. The willingness to face the reality of the harm caused and make personal change is echoed through all the interviews. In the face of generations of trauma and violence, the honesty, strength, and conviction to begin this change was quite remarkable and is exemplified in the following quote from Manaia.

> *".... that's a whole other generation* ***[children in his family]*** *and I'm glad. And I think the only proud thing I have to stake claim on is that, as far as all that ugly shit goes it stops right with me. Because they're not going to carry that on, they're going to be a policeman or famous sportsman and do really well in life." Manaia*

The overarching sentiment of everyone was the belief that family harm stopped with them. Moreover, evident in the interview content was an emerging awareness that the changes that were being made on individual, family group and societal levels were significant and provided hope. For example, Nikau's observation about how the current generation has made changes so that children are seen and heard is poignant for two reasons. Firstly, he described himself as being at the beginning stages of wanting to change and was still involved with the justice system. Secondly, the tone of this comment was one of wonder and astonishment as if he were observing for the first-time children expressing emotions and that these were heard and validated.

> *"Anger came as a result of a lot of that abuse because when you get abused you've got no say in it, you can't, you can't stand up because you're little. You know back in our era, it would've been, it was ok to be seen. But not heard! And those were part of the old concepts of what that generation had brought us up in…. So really, we have no voice compared to as what the voices* ***[of children]*** *today. You know you get a lot of youth that can, or a lot of children that actually are quite open* ***[with thoughts and feelings]****." Nikau*

Nikau's comment highlights that efforts to stop family harm and focus on the intergenerational transmission of hope and wellbeing are seen and heard and can be inspiring and motivating for others.

Tūrangawaewae (a place to stand): Through cultural reconnection all the wāhine and tāne expressed a sense of feeling validated with a destined place in the world. Thus, providing a sense of belonging and an identity that they could proudly talk about instead of their childhood experiences. Aroha described a framework she developed based on a Māori concept of belonging that has helped her regain her voice and be an active agent in her life.

> *"I have a tūrangawaewae and at one stage it was woven for me and I didn't understand that I could weave it for myself. So, in my mind and how I'm thinking of it now is that the tūrangawaewae is the relationships, the connections in life …. I have come to understand that I weave my own tūrangawaewae, my own standing place and that has to be firm and so I took* ***[supportive people]*** *with me I'm weaving them into my tūrangawaewae, so when I go into shaky places, I have got a firm place to stand." Aroha*

Caring for and looking after others was a critical foundation identified as something that gave life purpose and meaning and a sense of belonging to something bigger than themselves. For example, all expressed a desire that their life story could act as a roadmap for others' wellbeing. The following quote from Candace represents the message that pervaded all the interviews regarding the next generation. A message of hope and the essential role of human decency when thinking about people who have a history of childhood maltreatment and family harm.

> *"When you've got all that rubbish going around in your head it's all negative. All you want to do is hurt yourself and that's sad ay, cause they're beautiful people. It doesn't matter what walk of life they came from, they have a right to be respected and to be loved and accepted just for who they are." Candace*

Inherent in Candace's quote was her appreciation of the existence of mauri (life force) and beauty within everyone. An aspect of humanity that can be forgotten within experiences of abuse and trauma as children and within institutions but never lost.

Knowing whānau who have similar lived experiences provided solace and connection robbed when removed from living with whānau. For example, in addition to the sense of isolation and removal from his family due to sexual abuse, Brian described a sense of isolation and separation as he thought he was the only gay person in his whānau. Learning later in life that an aunty, and one of the only whānau he recalled as being "whole" was lesbian, provided reassurance he was not alone and gave a sense of kinship he had not previously felt.

> *"She wasn't married, and this is back in late 70s, she had no children, she was a teacher, and she was interested in travelling the world.… She was lesbian…. To know about my aunty…. would have been nice to know about …. her life but never got to. Cause that was all taken away from me you know, from my uncle from what he did you know. And that's where I sort of just went wayward." Brian*

For Brian, knowing he was not the only gay person in his family and having a positive role model in his aunty later in life was the beginning of a healing journey from a sense of shame and isolation related to his sexual identity. He described feeling increasingly proud of who he is and feels he belongs to a long line of takatāpui (individuals who identify as gay, lesbian, bisexual, transgender, intersex) who provide models for healthy relationships part of a family going forward.

To summarise, it was not one element that helped the wāhine and tāne interviewed to stop family harm perpetration and move towards personal and familial wellbeing. It was many aspects occurring in multiple ways over time. The experiences of being ignored and silenced as children were inverted when their voice was finally heard, and the process of healing began through values and practices inherent in the essence of mātauranga Māori and kaupapa Māori models.

DISCUSSION

The findings of this study reinforce the importance for psychologists working in the area of childhood maltreatment and family harm perpetration to engage in trauma and Indigenous-informed practises to stop the intergenerational transmission of trauma and violence. For these 8 participants, intergenerational patterns of trauma and violence were healed through their reconnection to Indigenous knowledge and practices. Our analysis revealed three key components critical to stopping family harm perpetration and facilitating psychological wellbeing: Wairua (spiritual connection), Pou (becoming a symbol of strength and support for self and others), and Tūrangawaewae (finding a sense of belonging). The findings outlined in this paper support the ever-increasing compendium of knowledge that demonstrates that Indigenous understandings and practice facilitate the intergenerational transmission of hope and healing (Durie, 2001; Cooper & Rickard, 2016; Fox et al., 2018; Tapsell, 2020). Therefore, Indigenous Māori psychologists working from kaupapa Māori perspectives is essential to healing intergenerational trauma. Equally, there is a need for non-Māori psychologists to actively engage in cultural supervision and training to eliminate the intergenerational transmission of trauma and violence.

The launchpad for healing and self-determination has repeatedly been identified is a return to Māori value systems to restore a sense of purpose, meaning and progress towards positive life outcomes (Ruwhiu et al., 2009; Cooper & Rickard, 2016; Fox et al., 2018). As evident in the experience of Manaia, childhood maltreatment resulted in a sense of isolation amplified by the lack of support and intervention from professionals. However, reconnection to whenua, whakapapa and ancestors provided Moana and Aroha with strength and support to pivotal to their healing journey. These findings are in alignment with kaupapa Māori models of health and wellbeing that highlight the importance of reconnection with forbearers, Hā a Koro Mā, a kui Mā (Pere, 2017) and spiritual and faith-based figures, Waiuratanga (Valentine et al., 2017). Therefore, interventions to stop the intergenerational trauma and violence and facilitate psychological wellbeing must include the essential component of Wairua.

One of the core facets of relating to others is expressing and responding to emotions in ourselves and others. However, childhood experiences of maltreatment can interfere with the processing of emotions in relational contexts and have been linked to family harm perpetration (Young & Widom, 2014). For example, Daphne linked the lack of love she experienced as a child to her struggles in adulthood to know how to love herself or others. Nikau linked the void of emotions evident in care settings with ongoing issues relating his adult experiences with expressing and feeling emotions to family harm. Consequently, exploring the nature and experience of whatumanawa (emotions) is an important pathway for stopping family harm perpetration and can be fostered through engagement with kaupapa Māori models such as outlined in Pere's (2017) Te Wheke model. Therefore, our findings highlight the importance of including kaupapa Māori models to help people better understand the role of emotions within relational contexts to stop the transmission of trauma and violence. For this recommendation to be achieved, services must allow Indigenous Māori psychologists to work from kaupapa Māori perspectives and for non-Māori psychologists to foster and continually develop their understanding of working within kaupapa Māori practices to eliminate the intergenerational transmission of trauma and violence.

It is important to note that the wāhine and tāne interviewed did not suggest that childhood neglect and abuse were an excuse for family harm perpetration, but instead, it helped them make sense of their reactions. But what was clear was the ongoing and detrimental impacts of the abuse and neglect that occurred for the interviewees removed from whānau and placed into non-Māori settings. The pain and suffering experienced outweighed any harm experienced within whānau settings prior to removal. The critical sentiment running through the interviews was the desire to positively change for themselves and future generations, aligning with kaupapa Māori models of wellbeing. Such as Superu's (2016; 2017) Whānau Rangatiratanga conceptual framework that highlights elements of kotahitanga (collective unity) and manaakitanga (responsibilities to honour the mana, authority, of others). Daphne's conceptualisation that she was becoming a model of strength of her family, as her own Pou, offers a beautiful challenge to previous beliefs around hopelessness and powerlessness. Through cultural reconnection, the wāhine and tāne expressed a sense of feeling validated a sense of belonging, Tūrangawaewae. Caring for and looking after others was a critical foundation that gave life meaning and a sense of belonging to something bigger than themselves. Ultimately fostering supportive relationships that provided opportunities to talk through issues and

psychological distress, a stark contrast to childhood experiences. Therefore, fostering reconnection to people and places where people have a sense of purpose and belonging is a key aspect of healing and interrupting the transmission of trauma and family harm.

One of the major recommendations that stand out in the narratives of the people interviewed is the need for all of us demand that tamariki receive a high level of care and nurturing. The devastating impact of the cultural isolation was evident in the experiences of Caleb and Moana and reflected an additional layer to the culture of silence. The information emerging from the ongoing national and international inquiries into the abuse of Indigenous children in state care confirm that the effects of childhood maltreatment can continue into adulthood (Aboriginal Children in Care Working Group, 2015; Office of the Children's Commissioner, 2015). Manaia and Nikau linked the chronic abuse and neglect they experienced in state care placements to psychological and interpersonal challenges. Therefore, non-Māori psychologists must ensure that our practices do not further silence Māori from talking about their childhood maltreatment experiences or minimize the impact abuse within the context of state care. One way to ensure this is to employ trauma-informed practices. At the heart of trauma-informed principles is enabling people's voice with past traumatic experiences, so childhood experiences of silencing and powerlessness are not replicated (Short et al., 2019; Wirihana, 2014; Pihama et al., 2017). The five key trauma-informed principles are safety, trustworthiness, empowerment, choice, and collaboration (Dempster-Rivett, 2019). These principles are intertwined with kaupapa Māori values such as those of Kaitiakitanga (guardianship), Manaakitanga, Rangatiratanga (leadership) that brings people together and the anchoring and protective aspects of Wairuatanga. Ultimately, non-Māori psychologists working in trauma and Indigenous informed ways would not replicate the childhood experiences of being ignored and isolated.

Our analysis clearly showed that all the people interviewed experienced multiple times where they did not feel heard or kept safe from the adults in their lives. Therefore, one of the implications of this study is that for non-Māori psychologist working in the area of trauma and violence to enable spaces for Māori to talk about lived experiences of intergenerational trauma and violence in all forms. Specifically, ensuring the voice of Māori is integral to the development and implementation of programmes to address the intergenerational transfer of trauma and violence. Our study focused on the reflections provided by people who had harmed their families and the relationship with childhood experiences of maltreatment. In the future, it would be beneficial to extend this research to talk to whānau, such as partners, children and parents, which would provide valuable insights into contributors and inhibitors of the intergenerational transmission of trauma and violence. The age group of the interviewees ranged between 40-60 years of age. It would be helpful to explore the intergenerational transmission of trauma and violence with younger and older cohorts. Ongoing research is needed to guide and support partnership models and Māori for Māori approaches in developing and implementing programmes to address adverse impacts of childhood maltreatment.

In conclusion, the findings of this study highlight the importance of infusing Indigenous psychological approaches to facilitate the intergenerational transmission of hope and wellbeing. Three core concepts were identified in breaking the cycle of family harm and healing childhood maltreatment: reconnection with Wairua, becoming a beacon of strength and support for self and others, Pou, and finding a sense of belonging and Tūrangawaewae. Therefore, psychologists need to create therapeutic environments where Māori are free to engage in cultural beliefs and healing practices for personal and familial wellbeing.

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Glossary of Māori terms

This glossary identifies Māori words used in this article. The English version reflects the researchers' interpretation, often based on how the Māori word was used by participants. The terms presented here are in alignment with Health Research Council of New Zealand terminology (HRC, 2010).

Māori	English
Hapū	Kinship group
Iwi	Extended kinship group, tribe
Kaitiakitanga	Guardianship
Karakia	Prayer, incantation
Kaumātua	Māori elders
Kotahitanga	Collective unity
Manaakitanga	Cultural and social responsibility; Respecting the mana (authority) of others
Mātauranga	Traditional knowledge
Mokopuna	Grandchildren
Pou	Steadfast and reliable; becoming a symbol of strength and support for self and others*
Rangatiratanga	Leadership
Tāne	Men
Tamariki	Children
Tangata whenua	Indigenous people
Takatāpui	Individuals who Identify as Gay, Lesbian, Bisexual, Transgender, Intersex
Te ao Māori	Māori worldview
Tūrangawaewae	A place to stand, finding a sense of belonging*
Tūpuna	Ancestors
Wairua	Spirit; spiritual connection*
Wairuatanga	Spirituality
Wāhine	Women
Whai ora Māori	Māori clients
Whakatauki	Proverb
Whakapapa	Genealogy
Whānau	Family
Whatumanawa	Emotions

* Interpretation as emerged from the interview content.

"lemme get uhhhhh froot": Internet memes for consciousness-raising in Aotearoa's Bird of the Year conservation campaign

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Bird of the Year has become a cultural phenomenon. Designed by Forest and Bird to raise awareness of New Zealand's endangered wildlife, the competition attracts engagement from dedicated campaign managers, fans, and baffled international news outlets. Internet memes have become an integral part of the competition. We analyse how Bird of the Year memes (*n* = 489) support engagement with the campaign. Our thematic analysis of 489 memes circulated on Facebook and Twitter revealed that memes invoke emotions, reflect and (re)produce identities, and encourage pro-environmental action. Memes mobilised humour and fear, cultural ideas about what it means to be a New Zealander, and information about how to conserve endangered species. Memes also self-referentially questioned the efficacy of memes for conservation, raising questions about the potentials and pitfalls of online engagement. Our findings point to the powerful psychological processes through which seemingly light-hearted memes can operate for consciousness-raising.

Key words: *Internet memes, consciousness-raising, conservation, digital activism, identity, emotion*

Introduction

New Zealanders' affiliation with native birdlife runs deeper than simply naming ourselves 'Kiwis'. The annual Bird of the Year competition to crown the nation's favourite native bird attracts fierce rivalry and is heralded as indicative of the New Zealand psyche (Hunt, 2019; Langstone, 2019). In this paper we examine the internet memes that have become a defining part of the Bird of the Year competition. Although seemingly light-hearted and frivolous, we argue that these memes are an important way everyday people engage with the purpose of the competition. We examine how memes function as a form of online consciousness-raising about the threats facing New Zealand's birdlife and explore their possibility to generate pro-environmental action.

Bird of the Year

Bird of the Year is a competition managed by Forest and Bird, a conservation organisation that works to raise awareness of New Zealand's native wildlife and advocate for protections for vulnerable species and ecosystems. Bird of the Year has become one of Forest and Bird's most popular campaigns, with over 40,000 votes cast in recent years (Radio New Zealand, 2020). The aim of the campaign is to raise awareness of the threats facing New Zealand's birds (Forest and Bird, n.d.). More than 80% of New Zealand's native bird species are threatened or at risk and 23 species face an immediate high risk of extinction (Department of Conservation, n.d.a; Parliamentary Commissioner for the Environment, 2017).

The digital environment offers exciting potential for conservation campaigns and initiatives. Digital engagement with conservation campaigns can be just as effective as real exposure to threatened species for generating emotional connection and attitude change as real exposure to threatened species (Skibins & Sharp, 2019). Digital media campaigns that offer multiple pathways for participation and forms of "entertainment engagement" can offer routes towards meaningful pro-environmental action (Senbel et al., 2014, p.84)

In this paper we examine a particular feature of the digital landscape—memes—and their operation within the Bird of the Year conservation campaign. Internet memes have become a defining feature of Bird of the Year. Forest and Bird encourages members of the public to campaign for their favourite bird. Campaigns are endorsed by politicians and celebrities and operate across the digital social media landscape including Facebook, Twitter, TikTok, Instagram and Tinder (Green, 2020). Many campaign managers create dedicated social media accounts, sharing memes to support their candidate and oppose rivals (Huffadine, 2018). Although Bird of the Year and its associated internet memes have received widespread national and international media attention (Hunt, 2019; Taylor, 2019), we provide the first analysis of the psychological processes through which Bird of the Year raises awareness of conservation issues.

Internet memes and consciousness-raising

The term 'meme' was coined by Dawkins (1976) to describe a unit of cultural transmission analogous to the

gene. Internet memes are rapidly shared images, videos, audio, or text that are reconfigured as they spread, but retain a link to the items from which they originated (Börzsei, 2013; Castaño Díaz, 2013; Shifman, 2013). Memes fluctuate in popularity in short periods of time (Burton, 2019) and their meanings constantly change as they circulate through different online communities (Pettis, 2021). Part of memes' appeal is that, rather than commercially produced images such as advertisements, memes are produced by ordinary people—often with deliberately poor graphics and simple text (Burton, 2019).

Digital content that invokes strong emotional responses is more likely to spread (Guadagno et al., 2013) and memes that are "playfully serious" are more likely to become popular (Laineste & Voolaid, 2017, p. 44). The playful-serious nature of memes can provide a vehicle for speaking difficult truths in ironic ways (Owens, 2019). For example, depression memes speak the realities of living with mental illness in ways that can offer beneficial social support and emotion regulation for people experiencing clinical symptoms (Akram et al., 2020). Diaosi (loser) memes signal young people's disillusionment with socio-economic mobility and offer forms of affective identification for young people in China (Szablewicz, 2014). Memes can be particularly powerful for young people and members of marginalised groups who have traditionally been denied access to civic life as they offer accessible ways to exercise political voice and engage with cultural politics (Burton, 2019; Gal et al., 2016).

Memes are central to online participatory culture and digital activism, which has been conceptualised as contemporary forms of consciousness-raising (Anderson & Keehn, 2020; Gleeson & Turner, 2019). Memes are well suited for consciousness-raising activism because they are based on shared frameworks but require variation, meaning people can participate in collective action while maintaining a sense of individuality (Shifman, 2013). For example, feminist memes mobilise parody and humour to critique sexism in politics (Rentschler & Thrift, 2015) and everyday life (Jane, 2016). Similar techniques have been used to call attention to economic inequality in the Occupy Wall Street protests (Milner, 2013) and racial injustice in the Black Lives Matter movement (Dynel & Poppi, 2021).

Memes are increasingly being used to engage people in environmental issues. Many memes created by young people balance nihilistic feelings of eco-anxiety with calls for political action (Burton, 2019; Scott, 2019). The ease of creating and sharing memes facilitates civic engagement with environmental issues such as climate change (Ross & Rivers, 2017). Memes about climate change can invoke feelings of empathy and make viewers more likely to participate in climate change campaigns (Zhang & Pinto, 2021). Some conservation organisations have harnessed the power of memes to run successful campaigns. For example, Greenpeace protested oil company Shell's plans for oil drilling in the Arctic by creating memes based on Shell advertisements and encouraging members of the public to create their own (Davis et al., 2016). Research suggests that humorous memes can be effective in generating interest and concern for 'unappealing' endangered species who are less likely to feature in traditional conservation campaigns than their 'cute' counterparts (Lenda et al., 2020).

The tacit assumption of the Bird of the Year campaign is that increased awareness will translate into action to save New Zealand's at-risk birds. However, the knowledge-deficit approach to conservation has been widely criticised (Clayton et al., 2013; Kidd et al., 2019; Senbel et al., 2014). Knowledge of environmental problems like climate change and habitat destruction is necessary but not sufficient to engender action (Schultz, 2011). Understanding the psychological drivers of behavioural change, such as engaging values (Saunders et al., 2006) and tailoring messages to different audiences (Kidd et al., 2019), might better support conservation campaigns to translate awareness into action. Memes fulfil important psychological functions, from expressing social identities (Burton, 2019; Eschler & Menking, 2018) to maintaining communities and ideologies (Miltner, 2014; Nissenbaum & Shifman, 2017). Yet how do memes operate as consciousness-raising endeavours? In this paper, we examine how internet memes support engagement with the Bird of the Year conservation campaign and explore memes' self-referential engagement with debates around their potential for inspiring action.

METHODS

Positioning and Theoretical Framework

The current study was conducted using a poststructural framework, meaning we acknowledge there is no one 'truth' about Bird of the Year memes to be discovered. Rather, any knowledge we produce is partial, bound by culture and context, and shaped by who we are as researchers (Acker, 2001; Harrison et al., 2001). This study grew out of the Qualitative and Critical Collective, a group of graduate students at Te Herenga Waka—Victoria University of Wellington who discuss issues and ideas relating to critical psychology and qualitative methods. All authors of this paper are women psychology graduate students or early career researchers in our twenties and thirties. We identify as politically left-wing and describe ourselves as feminists and environmentalists. We vary in our familiarity with internet memes and qualitative methods. We took a reflexive approach to our research, considering at each stage of the research how our various subject positions impacted on data collection, analysis, and discussion.

Data Collection

After an initial meeting discussing Bird of the Year memes from our own social media feeds (approximately 30 memes), we created a corpus of memes to examine the role of memes in Bird of the Year. We collected publicly available memes from Facebook and Twitter and obscured names and profile pictures to protect the identity of individuals who shared or interacted with the memes.

We first searched Facebook using #birdoftheyear and identified fan pages that had posted at least 10 memes related to Bird of the Year. Nine pages campaigned for a specific bird, while the tenth, "Feathery Memes for New Zealand Bird Teens", posted general Bird of The Year memes and reposted memes from other pages. We collected 487 memes between 17-30 November 2019.

Table 1. Overview of the 12 Facebook pages from which the Bird of the Year memes were sourced.

Page name	# Memes posted	Average engagement with meme	Bird Placings
Team Kākāpō	77	160.3	2008 Bird of the Year
Feathery Memes for New Zealand Bird Teens	68	237.1	N/A
Hoiho - Bird of the Year 2019	66	107.3	2019 Bird of the Year
Kererū 2019	54	205.4	2018 Bird of the Year
Takahē for bird of the year	47	50.4	-
Rockhopper Penguin #birdoftheyear	46	33.0	-
Courageous Kakī Memes for Bird of the Year Voting Teens	37	12.8	-
NZ Falcon/Kārearea BOTY 2019	28	29.0	2012 Bird of the Year
NZ Dotterel/Tūturiwhatu for Bird of the Year	24	9.0	-
South Island Kōkako for Bird of the Year 2019	16	19.4	2016 Bird of the Year
Vote Rifleman for Bird of the Year 2017	14	9.0	-
Tawaki for bird of the year 2019	10	12.6	-

Memes had been posted between 8 October 2017 and 10 November 2019. See Table 1 for information about the 12 Facebook pages used to source memes.

Given the large number of memes in our corpus, we completed an initial round of coding to ascertain which memes were candidates for a more in-depth thematic analysis. We considered the memes only, rather than including accompanying captions and comments. For this initial round of coding, the first and last authors independently recorded which Facebook page had posted each meme, the engagement each meme received (i.e., the combined number of reactions to each post, including 'likes' and other emotion-specific reactions like 'angry' or 'sad' faces), which specific bird (if any) each meme supported, whether each meme contained comparisons to other specific birds, and whether each meme was a candidate for analysis. Memes were considered candidates for thematic analysis if they accomplished something over and above communicating that a specific bird should win, or that New Zealand native birds are, in general, interesting or worthy of admiration. PW coded a subset of the memes (35%; 171 memes) using the same criteria. Memes were taken to the wider research team if one or more coders had marked it as a candidate for analysis. When marking a meme for analysis, coders made brief notes of their reasoning for why the meme met the analysis criteria (e.g., "promotes conservation", "contains New Zealand cultural reference").

Before conducting our thematic analysis, we searched for Bird of the Year memes on Twitter to ensure we had not overlooked any memes suitable for analysis or which differed significantly from the memes we had collected from Facebook. Most Bird of the Year campaigners have a Twitter account and a Facebook fan page and post the same content to both sites. However, we suspected that some Bird of the Year fans may create Bird of the Year content that is posted to Twitter, but not Facebook. We searched #birdoftheyear on Twitter and collected an additional three memes to add to our corpus and subset of memes for in-depth analysis. As such, after this initial coding process, we were left with 489 memes in total and 188 candidate memes for thematic analysis. All deidentified memes are publicly available at OSF: https://osf.io/3zhkr/.

Iterative Development of Research Question

Developing a research question for a qualitative study is often an evolving process where researchers reformulate their question in response to shifts in theoretical framing and new insights that arise during data collection (Agee, 2009). Although research questions typically become more focused as a study progresses, we made the decision to broaden our research question during data collection and analysis. We first decided to explore how memes reflected and constructed New Zealand cultural identity. However, while collecting memes for our data corpus we realised this research question was too narrow and revised it to examine how memes reflect New Zealand values and ideals. This question was further broadened after coding the candidate memes for analysis, as our coding included ideas worthy of further exploration, but which were outside the initial scope of our research question. As such, the final research question investigates how memes support engagement with the Bird of the Year competition.

Data Analysis

We coded the memes using Braun and Clarke's (2006) thematic analysis to identify patterns of meaning across the dataset. Thematic analysis is typically used to analyse written text but is increasingly used as a visual methodology to analyse images or a combination of written text and images (Choi, 2018; Ponnam & Dawra, 2013).

The memes were coded in data sessions involving seven of the eight authors. Each meme was displayed on a data projector, and we used a whiteboard to create and map codes: "pithy labels identifying what is of interest in the data" (Braun & Clarke, 2019, p. 2). As we were still

refining our research question at this stage of data analysis, we used complete coding (where we coded anything of interest in the data) rather than exclusively creating codes relevant to our research question (Braun & Clarke, 2006). Following coding, we used our simple, descriptive codes to identify higher-order and complex themes that captured patterns of meaning in our dataset. For example, codes such as "ways of being", "New Zealand identity", and "cultural references" were folded into a higher-order theme about reflecting and (re)producing identity (see second theme below). At the end of this process, we had identified three themes that captured how memes operate in the Bird of the Year competition.

ANALYSIS

Our thematic analysis of how memes work to support engagement in Bird of the Year identified three themes. We found that memes invoked emotional responses, reflected and (re)produced identities, and debated the potential for pro-environmental action. We provide an overview of each theme in the sections below. Where relevant we provide background about the origins of the meme to better contextualise the meme. Although we did not consider the memes' captions and comments during coding, we include the captions and comments of our exemplar memes to support our thematic analysis.

Memes Invoke Emotional Responses

During data analysis, one of the most noticeable aspects of Bird of the Year memes was their potential to invoke emotional responses among our research group. Although humour is often treated as a defining feature of memes (Laineste & Voolaid, 2017), memes involved in activism can be serious (Dynel & Poppi., 2021). Some Bird of the Year memes are humorous, supporting light-hearted engagement with birds. Other memes leverage humour to convey serious environmental messages, supporting consciousness-raising through the competition.

Humorous Memes

Figure 1 shows an example of a meme we coded as funny. A kererū (New Zealand wood pigeon, Hemiphaga novaeseelandiae) appears from a car window at a McDonald's Drive-Thru and places an order with the caption "lemme get uhhhhh froot". This meme is an iteration of the "Can I Get Uhhh" meme parodying indecision at fast food restaurants, which became part of drug culture, invoking the confusion of someone ordering under the influence (KnowYourMeme, 2018).

Figure 1 brought forth chuckles from our research group each time we came across it. The meme is humorous for several reasons. Not only are kererū incapable of speaking and driving cars, but "froot" does not feature on McDonalds' menu in any meaningful sense. Moreover, the meme is relatable—many of us have also experienced such moments of indecision while ordering food. The association between the original meme and substance use invokes the kererū's reputation for routinely becoming intoxicated by eating fermented fruit and falling out of trees (Roy, 2018). The connection between kererū and drunkenness is also extended in the caption which refers to a "6 pack of froot".

Humorous memes like Figure 1 present native birds as relatable and endearing, offering a light-hearted form of engagement. Birds like the kererū are material for users to make and share jokes (see iteration of further memes in the comment section). By contrast, other memes leveraged humour to make serious points, supporting a

Figure 1. "lemme get uhhhhh froot" Kererū, an example of humorous Bird of the Year memes.

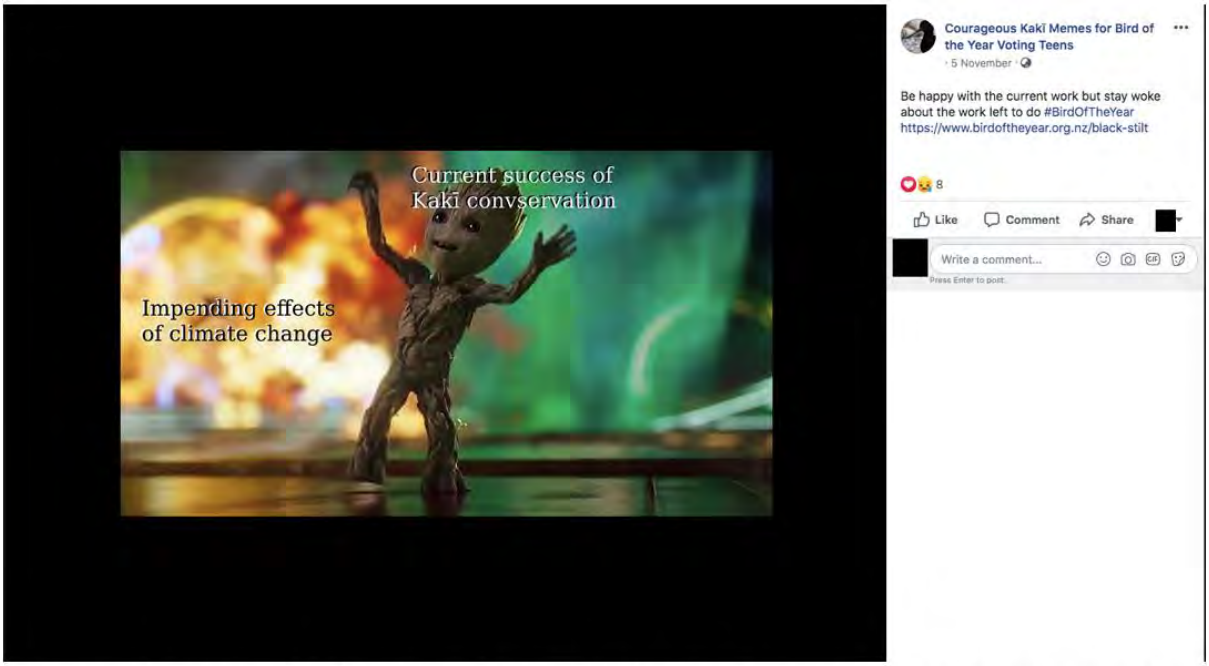


Figure 2. Dancing Baby Groot Amidst Explosions, an example of dark humour in Bird of the Year memes.

different form of engagement with native birds and conservation.

Dark Humour Memes

Figure 2 is an example of a meme we coded as funny and upsetting. The meme is a screenshot from the film Guardians of the Galaxy Vol. 2 where Baby Groot, a tree-like character, dances happily despite the explosion behind him. The image is overlaid with text that links Baby Groot's dance with recent conservation success and the background explosion as the "impending effects of climate change."

The meme leverages a funny image, and a reference to a funny moment in the film, to deliver a serous point. The meme draws the viewer in with an entertaining cultural reference before invoking feelings of sadness with the harsh reality of climate change. The caption directs viewers to celebrate conservation success "but stay woke about the work left to do" Thus, contrasting emotions of humour, celebration, and fear are leveraged to argue for the necessity of ongoing conservation efforts.

In the context of Bird of the Year, light-hearted memes can endear viewers to native birds while dark humour memes can communicate important messages about conservation. Emotions are invoked by drawing connections with the viewer, whether relating to the struggles of an intoxicated kererū ordering take-out or by juxtaposing emotions to warn against the dangers of complacency in the face of climate change.

The way that memes invoke emotion is closely linked to identity, which we explore in the following section.

Memes Reflect and (Re)produce Identities

A second way that memes support engagement with Bird of the Year is through identity. In this section we analyse how memes articulated aspects of a shared (or contested) national identity and how this supports engagement with the competition.

National Identity

The local character of Bird of the Year memes was reflected in the number of memes that articulated aspects of a shared national identity.

Figure 3 is a grid of six photographs of native birds entitled 'NZ Bird coffee orders' with lists of behavioural and personality characteristics for each bird. This meme is an iteration of the tag-yourself-tag-a-friend meme where viewers are encouraged to identify themselves or others with a particular bird—made explicit in the caption "tag urself". This dynamic is evident in the first comment post where the user has nominated a bird for a friend.

The tag-yourself meme format offers an explicit way to express identities (Burton, 2019) and here different native birds are presented as emblematic of different 'types' of New Zealanders. The typology presents coffee-drinking as a part a New Zealand identity and suggests the kind of coffee and how it is ordered are indicative of personality. The meme works by invoking viewers' presumed knowledge of native birds. Knowledge about different species' characteristics makes understandable the contrast between the nocturnal kiwi (Apteryx mantelli) who is polite to the barista and "happy to shout the crew" and the notoriously destructive kea (Nestor notabilis) who "screams and rips things apart" if they don't get their drink. Likewise, knowledge about local news events, such as the police removal of kororā (little blue penguin, Sphenisciformes spheniscidae) from a sushi cart in central Wellington (Cropp, 2019) allows viewers in on the joke.

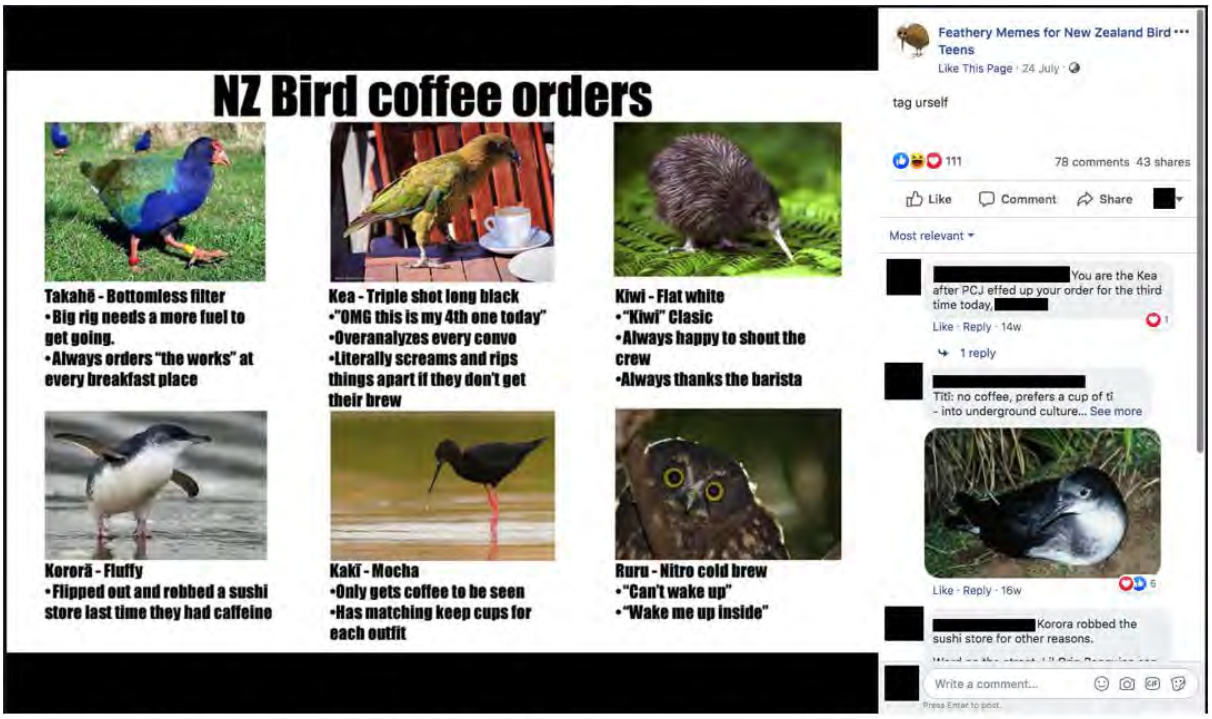


Figure 3. New Zealand bird's coffee orders, an example of memes highlighting similarities between birds and voters.

By encouraging viewers to see themselves (and others) as the birds depicted, the meme encourages identification with native birds. Likewise, identifying birds with anthropomorphised human traits and behaviours encourages affiliation and engagement with native species. Shared by the Facebook group 'Feathery memes for New Zealand bird teens', this meme draws connections between viewers and birds without directly intervening in the Bird of the Year competition. The same dynamic evident is in Figure 4A, a meme shared by the 'Hoiho for Bird of the Year' Facebook group. The meme (re)inscribes features of national identity to present the hoiho as relatable in order to solicit votes.

Figure 4A is built from a photograph of a hoiho (yellow-eyed penguin, Megadyptes antipodes) overlaid with text captions in a style characteristic of image macro memes (Davison, 2012). The use of "our spirit animal" as the meme caption suggests the hoiho represents some inner aspect of shared New Zealand identity, while the overlaid text reproduce characteristic national features. For example, the spelling of "fush and chups" references both the New Zealand accent and an iconic national meal. The suggestion that the hoiho considers this a "balanced diet" and is "a bit socially awkward" reference the 'Kiwi humour' popularised internationally by artists such as Flight of the Conchords and Taika Waititi (Robinson, 2019).

Generational Identity

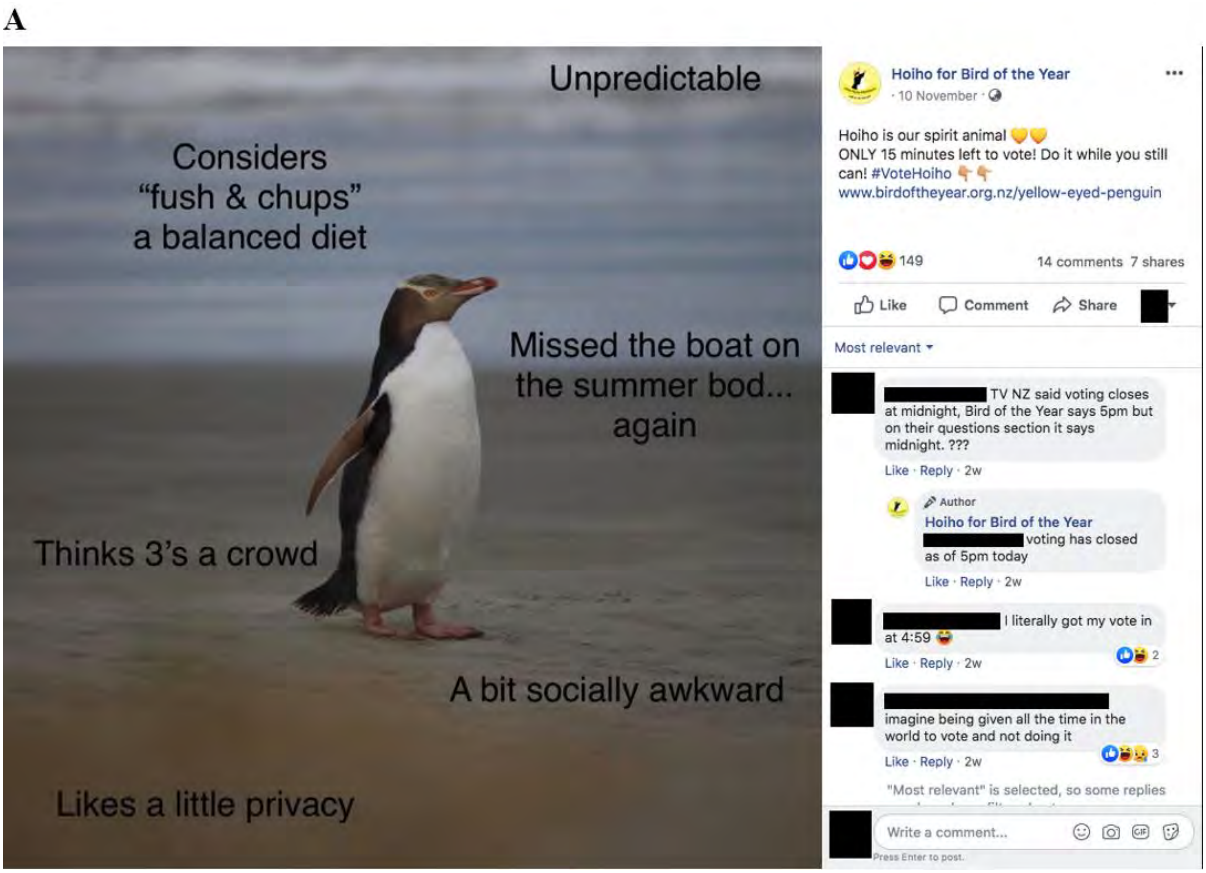
Figure 4B represents a different way identification between birds and viewers was realised. The top panel is an illustration of a kākāpō (owl parrot, Strigops habroptilus) at a podium, surrounded by kākāpō chicks, announcing that they will win Bird of the Year. The bottom panel is a screenshot from the New Zealand House of Parliament where Member of Parliament Chlöe Swarbrick responds "ok boomer" to a heckler during a speech about the Zero Carbon Bill. Swarbrick's face has been overlaid with a photograph of a hoiho.

The meme draws on real political event, linking kākāpō with Baby Boomers and hoiho with Swarbick. The quip "ok boomer" is as a pithy retort to comments from the Baby Boomer generation (Lim & Lemanski, 2020) and Swarbick's use of it in Parliament went viral online (Carlisle, 2019). Knowledge about native birds is required to make sense of the layered generational joke here. Male kākāpō make a booming sound to attract mates and so, in a literal sense, are boomers. Like others in the dataset, this meme links the booming kākāpō with the Baby Boomer generation. Although kākāpō remain critically endangered, they are a flagship conservation species who have received intensive funding and support from the Department of Conservation (Department of Conservation, n.d.b). Kākāpō won Bird of the Year in 2008 and in 2019 reported their best breeding season on record (Department of Conservation, 2019). Many campaigns argued that a previous winner should not be crowned again.[i]

Kākāpō, who have already won Bird of the Year and currently benefit from conservation efforts, are associated with Baby Boomers who also benefit from systematic societal advantages. The hoiho is identified as Swarbick, the youngest Member of Parliament and a vocal member of the Green Party (a green and left-wing political party). The meme thus works to disavow kākāpō's legitimacy as a candidate and position hoiho as the voice of a younger generation.

The first two sections have demonstrated how memes support engagement with Bird of the Year through the

A



B

Figure 4. Hoiho macro meme (Panel A) and Ok Boomer Hoiho (Panel B), two examples of memes highlighting similarities between birds and voters.

Figure 5. Simpsons Angry Mob meme, an example of memes as an accessible source of information.

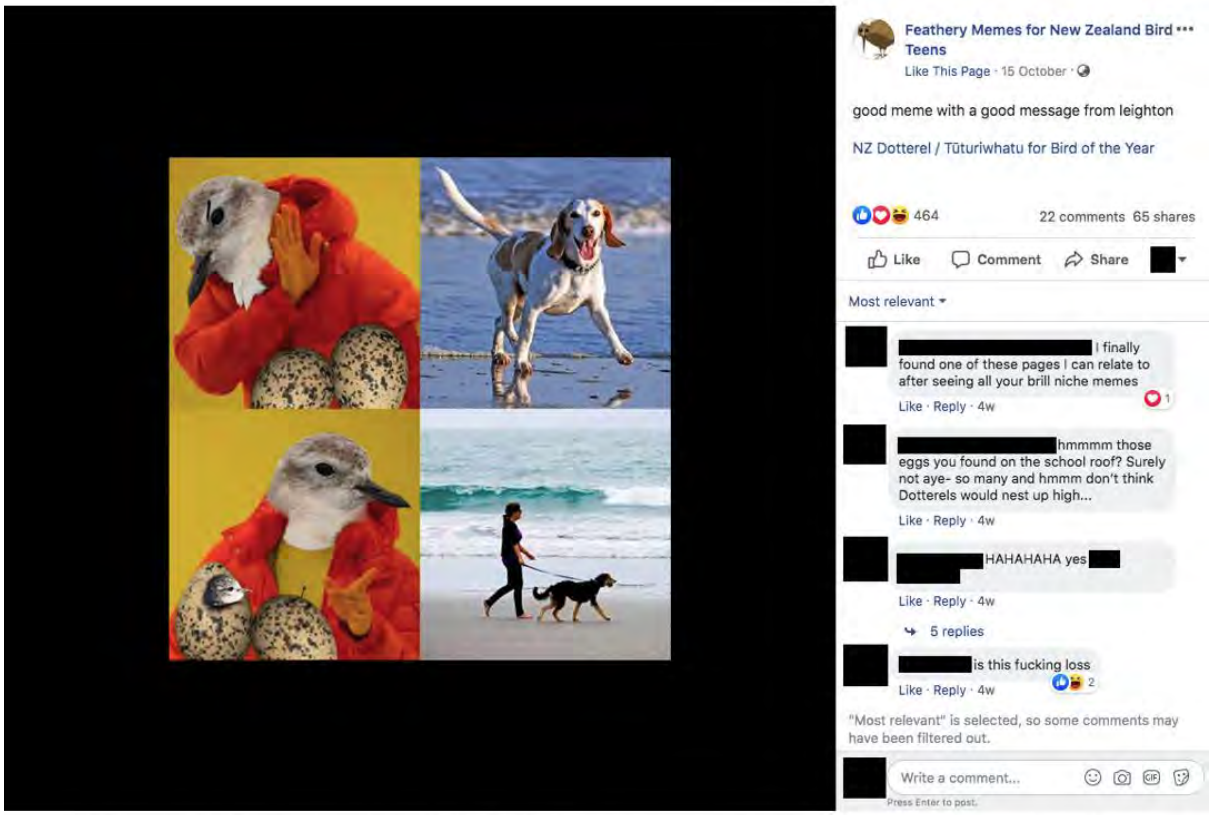


Figure 6. Drakeposting tūturiwhatu, an example of memes advocating for behavioural change.

psychological processes of invoking emotion and identity. But whether these forms of engagement constitute consciousness-raising or translate to action remains in question. The final section examines the possibilities for memes to further pro-environmental action.

Memes Encourage Pro-environmental Action

Memes conveyed contradictory positions about their possible impacts in conservation efforts. In this section we first present memes that argue for and demonstrate the possibilities for conservation education and behavioural change. The final example raises questions about the efficacy of digital engagement compared to other forms of political action.

The Power to Educate

Figure 5 offers a meta-commentary on memes' ability to support conservation. The image consists of still images from The Simpsons Movie overlaid with text captions. The caption "me" positions the viewer as Homer Simpson, staring in alarm at a mob of townsfolk who represent "being too busy to learn about conservation issues". The solution comes in the form of "bird memes", offered as an escape by friendly neighbour. This meme self-referentially suggests that digital media can offer accessible routes to learn about native birds and conservation. Memes are thus presented as an accessible form of education for those who would otherwise be "too busy".

Although knowledge alone is insufficient for behavioural change (Schultz, 2011), knowledge of social problems is necessary to address them (Pothitou et al., 2016). To care about the fate of endangered native birds and act, one must first be aware of the issue. Memes are constructed from recognisable visual images, and are integrated into personal social media feeds, so can offer time-poor individuals an accessible medium to engage with conservation issues. Given that access to time and education are unequally distributed in society, memes may be uniquely suited to educate mass audiences and engender pro-environmental action.

An example of environmental education through memes is demonstrated in Figure 6. Although Figure 6 is constructed from multiple layers it presents a conservation message that is easy to grasp, even without knowledge of the meme's background. The original images on the left panel are screenshots from a music video by hip hop artist Drake. In the top image, Drake holds up his hand and expresses disgust, while in the bottom he points his finger approvingly. In the four-panel format, Drake or a superimposed image (here, the bird) communicates a negative and positive stance towards the adjacent images. The meme presents a comparison between two scenarios. In the first, the tūturiwhatu (New Zealand dotterel, Charadrius obscurus) frowns and turns aside from an image of an unleashed dog on the beach. In the second, the bird gestures approvingly towards a dog on a leash and is accompanied by a hatched chick. The personified tūturiwhatu indicates disapproval of unleashed dogs, portraying a key conservation goal to restrict pet dogs' access to tūturiwhatu nesting sites (Department of Conservation, n.d.c).

Figure 6 is an example of meme with low barrier to entry for viewers to learn about, care, and potentially enact behavioural change for pro-environmental ends. People who might be otherwise too busy to learn about conservation issues can learn at a glance that tūturiwhatu nest on beaches, that dogs pose a threat to tūturiwhatu, and that a simple solution is to walk dogs on a leash. The standard format of Drakeposting memes provides a script for interpretation (rejecting the first scenario in favour of the second) which allows complex ideas to be conveyed with greater cognitive fluency. Both knowledge and

Figure 7. Bird of the Year Sword of a Thousand Truths, an example of memes advocating for political action.

personal values are important predictors of pro-environmental actions (Bolderdijk et al., 2013). For people who value native wildlife (and are members of the Facebook group "Feathery Memes for New Zealand Bird Teens"), this informational message may align with their values and promote pro-environmental behaviour that can conserve the tūturiwhatu's habitat.

However, some memes raised questions about the efficacy of memes and the Bird of the Year competition.

The Efficacy of Memes for Conservation

Figure 7 is a modified web comic where characters encounter the Sword of Truths. The third panel has been altered so the truth spoken by the sword reads "If you enjoyed BOTY [Bird of the Year] you should donate or volunteer to save birds and other wildlife in real life.". This meme was posted after the announcement of the winner of the 2018 Bird of the Year and appeals for continued engagement in conservation efforts beyond the competition.

The meme draws a contrast between enjoying the competition and meaningful action. The suggestions of volunteering and donating are classic examples of traditional political action that are often contrasted against forms of online participation (McCafferty, 2011). Like much of the debate around activism and digital media, this meme suggests that participating in a (largely online) competition for Bird of the Year is not enough. Instead, the uncomfortable truth revealed by the Sword of Truths is that people who voted for their favourite bird "should" also donate or volunteer. Notably, these forms of political engagement presuppose time and money that can be contributed. As critics have demonstrated (e.g., Storr & Spaaij, 2016) these presuppositions can structure activism in ways that are exclusionary or elitist.

A salient concern for Bird of the Year is whether memes—and the contest itself—translate into actions which help New Zealand's critically endangered wildlife. Memes are an engaging format that can provide information, such as pro-environmental behavioural change strategies. However, memes may be enjoyed and shared without leading to actions that contribute to tangible change.

DISCUSSION

We examined memes' potential for consciousness-raising by analysing memes circulating through the Bird of the Year conservation campaign. Bird of the Year is one of Forest and Bird's most successful campaigns with widespread local and international media coverage (Hunt, 2019). Although launched in 2005 as an email-based campaign, the competition has adapted well to the digital landscape and internet memes have become a key part of the competition in recent years. Some memes are created by campaigns for specific birds while others participate in or comment on the competition more broadly. Our thematic analysis identified that memes support engagement with the campaign by invoking emotions, reflecting and reproducing identities, and encouraging pro-environmental action.

Humour is a defining character of internet memes (Guadagno et al., 2013) and many Bird of the Year memes were humorous and whimsical. Memes are layered intertextual objects that combine local community knowledge with global cultural influences (Laineste & Voolaid, 2017). Both local knowledge about native birds and familiarity with global pop culture references can be necessary to 'get the joke'. For example, knowing that kereru get 'drunk' on fermented berries, and that the "can I get uhhh" meme format is associated with drug culture adds a layered dimension to what would otherwise be a curious (but less humorous) image of a super-imposed bird at a drive through (Figure 1). Likewise, knowledge about news events (such as the kororā sushi incident; Cropp, 2019; Figure 3), or shared understandings of national characteristics (a love of "fush and chups" and an awkward disposition) are necessary for the operation of memes' humour. The humour of Bird of the Year memes is thus distinctly local in character.

Seemingly light-hearted memes can function for consciousness-raising by increasing engagement with native birds and reflecting and (re)producing ideas about what it means to be a New Zealander. The links between emotion and identity were mobilised as strategies to solicit votes for different campaigns. Memes drew connections between birds and viewers, encouraging viewers to see themselves as birds and portraying birds with anthropomorphised traits and behaviours. These traits and behaviours clustered as features of national or generational identities (e.g. being a tidy Kiwi or an underdog competitor). Memes are powerful tools for constructing identities (Eschler & Menking, 2018; Gal et al., 2016) and maintaining communities (Burton, 2019; Nissenbaum & Shifman, 2017). Engagement with native birds through Bird of the Year memes can be a means through which shared ideas about New Zealand identities and values can be circulated and negotiated.

Bird of the Year memes also make use of emotion and identity for more explicit consciousness-raising aims. Some memes juxtaposed playful images with serious messages about conservation, climate change, and the dangers of complacency (e.g., Figure 2). Others conveyed information about pro-environmental behaviours like walking dogs on leashes in nesting areas (e.g. Figure 6). Digital engagement with conservation campaigns can be just as effective as in-person exposure to threatened species (Skibins & Sharp, 2019) and humorous memes may be uniquely suited for increasing engagement with "unappealing" species (Lenda et al., 2020, p.1200). Bird of the Year memes can act as a form of "entertainment engagement" that has been shown to support pro-environmental action (Senbel et al., 2014, p.84)

However, a distinctive subgroup of memes offered meta-commentary about the role of memes for consciousness-raising. On the one hand, memes can be an accessible way to "learn and care about conservation issues" (Figure 6). Knowing and caring about the fate of endangered bird is a necessary first step for conservation action, and increasing awareness is part of Bird of the Year's aim as a conservation campaign. Memes can be a forum through which people can learn about environmental issues (e.g. threatened species; climate change), become motivated to care (through emotional involvement) and be informed about actions they can take. On the other hand, knowledge and emotional engagement is not sufficient to engender behavioural change (Schultz,

2011). Some memes made this explicit, arguing those who enjoyed the competition should "donate or volunteer to save birds and other wildlife in real life" (Figure 7). Memes thus self-referentially addressed questions about digital activism's ability to bring about meaningful change (Gleeson & Turner, 2019).

Our analysis illuminates the psychological processes through which Bird of the Year memes increase engagement with New Zealand's native birdlife and, in some cases, raise awareness of conservation issues. Given the widespread threats facing Aotearoa's indigenous wildlife—and the centrality of native birds in how New Zealanders see ourselves—internet memes have potential to make a real difference in conservation efforts. Despite Bird of the Year's popularity and reach, we found no published data on whether the widespread circulation of memes is connected to donation activity or the uptake of pro-environmental behaviours. International research suggests viewing humorous memes increases viewers' emotional engagement and donation decisions (Lenda et al., 2020) but this is yet to be tested in New Zealand. Future research could investigate whether Bird of the Year memes are effective in their attempts to translate online engagement to conservation efforts.

In the Bird of the Year competition, lines of difference (such as campaigns for different birds) are largely in jest, and their calls to action endorse pro-environmental behaviour. Yet the same mechanisms of humour, appeals to identity, and calls to action have been deployed to form and police communities in exclusionary and even violent ways (Eschler & Menking, 2018; Nissenbaum & Shifman, 2017). For example, memes were intimately connected to violence in the 2019 Christchurch terrorist attack, with the killer framing his actions as a real-life escalation of meme-based violence, including memes in his manifesto, and posting about his actions in online communities (Romano, 2019). Feminist researchers highlight memes as a site for "acceptable" sexism, particularly when couched in humour (Drakett et al., 2018; Massanari & Chess, 2018). The potential for internet memes to help and to harm emphasises the need for ongoing research investigating these tensions, as well as the real-world consequences of creating and sharing internet memes.

Concluding Comments

Aotearoa New Zealand's Bird of the Year contest is designed to raise awareness of endangered native species and has become a cultural phenomenon. The circulation of internet memes is an integral part of the competition. Here, we highlight the psychological processes through which Bird of the Year memes function as a form of online consciousness-raising. Internet memes support engagement with the Bird of the Year campaign by invoking emotion, reflecting and (re)producing New Zealand identities, and communicating conservation messages. Moreover, Bird of the Year memes have an ability to self-reflect by considering their own potential for enacting real-world change. We encourage further research on the psychology of internet memes, and exploration of their potential to help our feathered friends.

[i] Although, this did go on to happen in 2020, when the kākāpō won.

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Authorship Contributions
The study concept was developed collaboratively by all authors. The data corpus was created by GF, KM, JS, PW, and SH. Initial coding was completed by GF and ET with support from PW. Data analysis was conducted by GF, FG, JS, SH, KM, PW, and ET. GF, FG, JS, and ET wrote the manuscript, and KR provided critical revisions. ET and GF revised the manuscript in response to reviewers' feedback. All authors approved the final version of the manuscript.

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The Broad Inventory of Specific Life Events (BISLE): Development, Validation, and Population Prevalence

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This study presents the Broad Inventory of Specific Life Events (BISLE), a comprehensive inventory and coding schedule that categorizes a far wider range of life events occurring in the past year than those covered in previous inventories. The BISLE uses a checklist of select probe events combined with a coding scheme for qualified responses to an open-ended question capturing the broad range of other events people perceive as being important to them in the past year. We demonstrate the utility of the BISLE using a large-scale national probability New Zealand sample (N = 47,951). Life events relating to health (29.65%), death (21.25%), work (13.78%), and relationships (9.61%) were the most frequently reported as having occurred in the past year. Further, women, younger people, and ethnic minority group members reported more overall annual events. Coding of open-ended responses from the BISLE demonstrated excellent inter-rater reliability. Validation analyses indicated that the BISLE predicted key outcomes in expected directions, including life satisfaction and psychological distress. The BISLE was developed for large-scale panel studies with limited space that could benefit from capturing self-reports of diverse life events occurring in people's lives over a given timeframe.

Keywords: *Major life events, life events inventory, prevalence, demographic differences, validity, inter-rater reliability*

Introduction

Stressors—exposure to environmental demands that cause stress—play a critical role in people's health and well-being (Wethington, 2016). Research typically categorizes stressors by (a) daily hassles which require little adaptation (e.g., bad traffic), (b) major life events, which encompass unexpected or extraordinary events that alter daily routines and/or provoke an emotional response (e.g., divorce), and (c) chronic stressors, which reflect enduring or recurring adverse circumstances in an individual's life (e.g., chronic illness; Carr & Umberson, 2013; Wethington, 2016). Although all three types of stressors provide valuable information about the amount and type of stress exposure people are experiencing in their lives, researchers have predominantly focused on major life events to examine the impact of stressors on key outcomes such as health, personality development, and subjective well-being (e.g., Bleidorn et al., 2018; Chang et al., 2015; Luhmann et al., 2012).

Yet, despite the plethora of checklists measuring life events, most inventories only focus on a subset of major life events (e.g., traumatic events; Gray et al., 2004). As such, researchers are limited in the types of life events they can capture, and little is known about the prevalence of the diverse range of events that people may experience each year (Hatch & Dohrenwend, 2007). In this paper, we introduce the Broad Inventory of Specific Life Events (BISLE), a comprehensive inventory and coding scheme that categorizes major life events to detail the national prevalence of various life events occurring during the previous year. The BISLE was specifically designed for large-scale panel studies that want to capture self-reports of a wide range of events that people may experience over time. We aim to demonstrate the utility of the BISLE using a large-scale, national probability sample from New Zealand to examine: (1) the annual population prevalence of diverse types of life events, (2) demographic differences in reported life events, and (3) the convergent and discriminant validity of the BISLE with key outcomes, including life satisfaction and psychological distress.

A Review of Previous Life Events Checklists

Checklists with specific probe items are the most popular way of measuring life events (Turner & Wheaton, 1997; Wethington, 2016). Table 1 highlights the five most-cited life events inventories and their main features. Table S1 (see online supplemental materials [OSM]) provides further information on a larger sample of previous checklists which are ordered chronologically to display their development over time. Major life events were commonly defined using the life change-readjustment perspective (Wethington, 2016). This perspective defines life events as time-discrete environmental changes that impact how people conduct their lives (Dohrenwend, 2006; Luhmann et al., 2012; Wethington, 2016). The first—and still widely used (Dohrenwend, 2006)—life events checklist was the Social Readjustment Rating Scale (SRRS; Holmes & Rahe,

1967), which quantified environmental changes through 43 positive and negative life events.

Since the SRRS, life events checklists have proliferated (see Table 1 and Table S1 in OSM; Dohrenwend, 2006; Turner & Wheaton, 1997). Previous checklists inventoried a diverse number of events (9 to 320) depending on their aim. Some checklists attempted to update the SRRS with more specific events (e.g., Dohrenwend et al., 1978; Hobson et al., 1998), whereas others attempted to make population-specific checklists, such as for older adults or non-western societies (e.g., Murrell et al., 1984; Singh et al., 1984). However, over time, checklists increasingly narrowed their focus to capture traumatic and/or adverse life events, limiting the scope of events researchers can examine (e.g., Gray et al., 2004; Kubany et al., 2000). This is because most inventories were created to understand life events in relation to physical and mental illness (e.g., Brugha & Cragg, 1990; Gray et al., 2004). Therefore, the majority employed a simple checklist for participants to code and rate their own experiences, including perceived readjustment or distress (e.g., Holmes & Rahe, 1967; Hurst et al., 1978).

Additionally, the reliability and validity of previous life events checklists has been questioned (see Dohrenwend, 2006). Upon review (see Table 1 and Table S1 in OSM), we found that the internal consistency and total score test-retest reliability of the presented inventories fluctuated greatly (e.g., Holmes & Rahe, 1967; see Casey et al., 1967; Hurst et al., 1978). In contrast, some demonstrated high inter-rater reliability (see Cochrane & Robertson, 1973) and individual item reliability over time (see Brugha & Cragg, 1990). For validity, the reviewed checklists correlated with other checklists (see Carlson et al., 2011) and associated outcomes (e.g., depressive symptoms; see Lewinsohn et al., 1985).

Prevalence of Life Events and Demographic Differences

Checklists are often used to generate prevalence estimates for various life events. Population-based research revealed that the most common life events were in the domains of work, death, finance, housing, travel, and health (Goldberg & Comstock, 1980; Hobson & Delunas, 2001). For example, the Department of Internal Affairs (DIA; 2014) revealed that the most common annual life events among New Zealanders in 2014 were overseas travel (41%), a family member's death (26%), starting a new job (22%), and major illness, injury or accident (12%). In contrast, buying a house (9%), having a baby (5%), getting married (5%), retirement (3%), and divorce (3%), were less frequent.

However, most research has only provided estimates for traumatic events because previous checklists only include traumatic and/or adverse events. This literature indicated that amongst the general population, accidents and traumatic events—particularly unexpected deaths of loved ones—were frequently reported (Benjet et al., 2015; Breslau et al.; 1998; Hepp et al., 2006; Norris, 1992; Vrana & Lauterbach, 1994). In New Zealand, where the current study is situated, comparable estimates have also been shown, with 9% of people on average experiencing a traumatic event every year (Kazantzis et al., 2010).

Prior research has also revealed that the experience of major life events may be qualified by demographic differences based on gender, ethnicity, and age. First, research consistently shows gender differences in the types of stressful life events experienced (Hatch & Dohrenwend, 2007). Specifically, men experienced more work, financial, legal, and traumatic events, whereas women experienced more events related to housing, social, and interpersonal domains (Kendler et al., 2001; Kessler & McLeod, 1984; Norris, 1992; Turner & Avison, 2003). However, although men reported more traumatic events overall, women reported higher rates of specific traumatic events, particularly sexual assault (Norris, 1992). In New Zealand, men reported more combat (i.e., military warfare involvement), physical assault, and accidents, whereas women reported more sexual assault, domestic violence, and tragic death such as suicide (Flett et al., 2004; Hirini et al., 2005).

Second, evidence also shows ethnic differences across life events. For example, most studies suggested that ethnic minority group members report more negative life events than their ethnic majority counterparts (e.g., Turner & Avison, 2003; Turner & Lloyd, 2004). For instance, research conducted primarily in North America revealed that ethnic minority group members experienced more discrimination (Kessler et al., 1999), death, illness, interpersonal, and financial events relative to the ethnic majority (Franko et al., 2004; Lu & Chen, 2004). However, there was a notable exception: Asian people reported the fewest traumatic events overall (Roberts et al., 2011). Within New Zealand, Hirini and colleagues (2005) found that traumatic events were common amongst Māori (65% over lifetime). Specifically, Māori reported more assaults and tragic death, while New Zealand Europeans often reported more combat (Flett et al., 2004).

Finally, research has shown age differences across life events. Younger people consistently experienced more negative life events than older people (e.g., Breslau et al., 1998; Hatch & Dohrenwend, 2007). Research from North America found that within one year, 27% of young people experienced a traumatic event, most commonly assaults (e.g., physical or sexual) and tragic death, compared to 14.2% of older adults (Norris, 1992). In contrast, older adults experienced more health, non-traumatic death, and family events compared with younger adults (Murrell et al., 1984). Similar differences were also found in New Zealand, with traumatic life events decreasing with age (Flett et al., 2004; Hirini et al., 2005).

The Present Study

For researchers wanting to study or assess life events, the types and number of life events that can be examined is currently limited to a specific subset of traumatic and/or adverse events (see Hatch & Dohrenwend, 2007; Sotgiu, 2010). Accordingly, little is known about the diverse types of life events people experience each year. This is a significant gap because research shows that various life events differentially affect—and may provide buffers for—important health and well-being outcomes (see Chang et al., 2015; Monroe & Slavich, 2020). For example, research suggests that positive events—or a lack

thereof—may be more important in predicting psychological maladjustment than the occurrence of negative events alone (Chang et al., 2015). Thus, a more comprehensive inventory that widens the scope of life events experienced by individuals that ranges in both valence (i.e., positive versus negative) and normality (i.e., common versus rare) will be an important addition to the field. This includes helping resolve current inconsistencies regarding the differential effects of life events, as well as in advancing understandings of how different life events predict different clinical outcomes (see Monroe & Slavich, 2020).

Here, we present the BISLE, a comprehensive inventory and coding scheme that categorizes major life events to detail the national occurrence of a wider range of life events occurring in the past year than those covered by previous inventories. We chose the name BISLE to highlight the unique aspect and primary aim of the inventory to provide a broad assessment of a range of specific life events with different characteristics (e.g., positive to negative and common to rare). This allows the BISLE to be used to examine a variety of specific life events that have not been included in other inventories. Additionally, the specific events can be collapsed into broader categories and domains for examination of more general trends across different types of life events.

The BISLE was developed as a population screening measure for use in the New Zealand Attitudes and Values Study (NZAVS)—a longitudinal panel study that began in 2009—to track changes in life events over time. In other words, the BISLE was developed for large-scale panel studies wanting to follow the same people over time and capture naturally occurring life events (e.g., the transition to and from marriage), as well as to track national-level rates of life events during key societal events (e.g., the COVID-19 pandemic). As the NZAVS collects data on a rolling basis, the BISLE can provide monthly averages of reported life events from the past year to examine trends in life events over time.

The BISLE employs a novel approach to assessing life events by combining a quantitative checklist of select probe events with qualitative open-ended responses that allow participants to provide descriptive accounts of self-generated events. The use of an open-ended section allows the BISLE to capture (a) a wide range of events in limited space, (b) what people themselves perceive to be an important life event in their own lives, and (c) changes in events that we might not anticipate, such as experiencing lockdowns. Although self-generated events rely on people's subjective appraisals (see Dohrenwend, 2006; Monroe, 2008), research has shown that events regarded as personally important are more proximal predictors of important outcomes such as depression (Boals et al., 2010). Furthermore, asking participants to generate their own events presents issues with memory and may mean participants do not report all experienced events (see Frissa et al., 2016). Therefore, the BISLE employs the initial checklist of focal events to prompt participants' recall and illustrate what types of experiences would classify as a life event.

We used previous life events checklists and participants' open-ended responses to create the events indexed by the BISLE. We started with the events listed in the SRRS, as this inventory provided a variety of both positive and negative events using the life change-readjustment perspective (Holmes & Rahe, 1967; Wethington, 2016). However, the BISLE is distinct and different from the SRRS as it includes: (1) more specific events (see Dohrenwend et al., 1978), (2) new events relevant to the current New Zealand population, and (3) significant events reported by participants. The BISLE also incorporates several unique domains that make it distinct from prior inventories (see Table S2 in OSM for included versus novel events coded by the BISLE compared to prior inventories). Specifically, the BISLE uniquely codes several underexplored domains: discrimination, immigration, gender identity and sexuality, and social issues. We develop a new coding scheme that categorizes participants' open-ended responses into three hierarchical levels that group events to differing degrees of specificity to provide informative population-level prevalence estimates across an array of life events, including how prevalent events are relative to others.

However, the BISLE does not examine event characteristics (e.g., impact or valence) of life events like many other checklists. For example, the Life Experiences Survey by Sarason and Colleagues (1978) asks participants to indicate the occurrence of event, followed by rating the positive versus negative impact of the event. Unlike prior checklists, the BISLE was developed for the unique purpose of providing a large pool of possible life events (with a variety of characteristics) for large-scale panel studies that are designed to follow the same people, and any possible life events they may experience, over time. As the BISLE was designed to fit into large omnibus surveys, the inventory was restricted in its form, length, and detail. Therefore, our use of combined probe events and open-ended responses allowed us to gain in-depth information of stress exposure in limited space.

Researchers have predominately focused on major life events to measure stress exposure (see Wethington, 2016). However, some researchers suggest that other types of stressors—particularly daily hassles—are better predictors of psychological outcomes than the sum of life events (Kanner et al., 1981) and provide a more proximal indicator of stress exposure than major life events (DeLongis et al., 1982). However, as the emotional effects of daily hassles are only temporary (i.e., lasting one or two days; Bolger et al., 1981) and can be easily forgotten (Monroe, 2008), measuring daily hassles requires intensive repeated daily assessments that are not feasible in large-scale panel studies. Therefore, while we acknowledge that daily hassles are important indicators of stress exposure and may work together with major life events to affect health and well-being outcomes (see Carr & Umberson, 2013), we developed the BISLE for large-scale panel studies where capturing reports of major life events each year is more practical and useful.

In presenting the BISLE, we are not suggesting that there is one right way to assess life events. The variety of available life events checklists highlights the numerous purposes for measuring life events (see Table 1 and Table S1 in OSM). Rather, we developed the BISLE for large-scale panel studies, where space is limited and a general

Table 1. Overview of Main Features of the Top Five Most Cited Life Events Inventories (Listed Chronologically)

Reference	Name of inventory	Popularity	# of events, time period assessed, and sample used	What was assessed	Focus of inventory	Validity & reliability	Event examples
Holmes & Rahe, 1967	Social Readjustment and Rating Scale (SRRS)	19515	Events: 43 positive and negative events Time period: Not stated Sample: 394 male and female patients	Event occurrence Ratings of readjustment to create total life change score	First inventory that measures environmental events requiring significant change to assess their relationship with illness onset	Internal consistency: α = .51 (Hurst et al., 1978) Test-retest reliability (total scores): 9-month interval (*r* = .74; Casey et al., 1967) Fall-off in reporting: 3 years = 35% and 5 years = 50% (Casey et al., 1967)	Marriage; change in financial state; wife began or stop work; revision of personal habits; change in social activities; vacation
Brown & Harris, 1978	Interview Schedule for Events and Difficulties/ LEDS	10956	Events: 11 sections Time period: Previous year Sample: Psychiatric patients and their relatives (to test reliability)	Event occurrence Emotional impact, severity, and what happened before and after the event	Interview method and schedule to overcome methodological issues in pre-existing measures of stress by gaining more in-depth information	Inter-rater agreement: 79% for all events and 92% for severe events (Brown et al., 1973)	Sections: health; marital; crises; employment; housing; role changes; money; leisure and interaction; interaction with parents; general
Dohrenwend et al., 1978	Psychiatric Epidemiology Research Interview (PERI) Life Events Scale	1729	Events: 102 events Time period: Lifetime Sample: 2,877 American adults	Event occurrence Domain event categories Ratings of readjustment for each event	Extension of the SRRS to provide more specific events and better agreement ratings	Inter-rater reliability: 22 most frequently reported events (*r* = .43; indicative not exact; Schless & Mendels, 1978)	Birth of first child; started work for the first time; graduated from school or training; built a home; arrested; went on welfare; made new friends; physical health improved
Sarason et al., 1978	Life Experiences Survey (LES)	4261	Events: 57 events Time period: Previous year Sample: 345 American university psychology students	Event occurrence (0-6 months or 7 months to 1 year) Perceived negativity/ positivity and impact of the events	Scale that extends the SRRS to measure life changes in the general population with the addition of an academic domain and the ability to create subscales of negative and positive stress	Test-retest reliability: 5-6 week interval, positive change score (*r* = .19 and .53), negative change score (*r* = .56 and .88), total change score (*r* = .63 and .64; *ps* < .001, moderately reliable)	Failing a course or important exam; death of close family member; sexual difficulties; abortion; leaving home for the first time; engagement
Gray et al., 2004	The Life Events Checklist (LEC)	1563	Events: 16 traumatic events Time period: Not stated Sample: 108 college students	Event exposure type experienced on a 5-point scale (1 = *happened to me*, 2 = *witnessed it*, 3 = *learned about it*, 4 = *not sure*, and 5 = *does not apply*)	Scale that measures potential exposure to traumatic events to assist in the diagnosis of PTSD	Test-retest (direct trauma exposure): 1-week interval (mean kappa for all items was .61; *r* = .82, *p* < .001) Test-retest (including indirect measures: 1-week interval (mean kappa for all items of .47, *p* <.001) Validity: *r* = .44 (*p* <.05) with modified PTSD symptom scale and. *r* = .48 (*p* <.05) with PTSD checklist	Fire/explosion; sexual assault; combat; motor vehicle accident; sudden unexpected death of loved one

Note. Popularity refers to the number of citations on Google Scholar as of July 2021. More information and details on a wider range of previous inventories are provided in Table S1 (OSM).

screening measure that captures as many life events as possible is needed. Incorporating the BISLE is particularly beneficial for panel studies in the context of unforeseen events, such as the COVID-19 pandemic, as life events data are collected on a rolling basis allowing comparisons over time. Other uses of the BISLE include focusing on specific events (e.g., retirement), tracking changes due to societal events (e.g., terrorist attacks), and creating sum scores from reported life events to indicate the amount of stress people have been exposed to at a given time. We aim to illustrate the utility of the BISLE using a large-scale, national probability sample from New Zealand to examine: (1) the annual rates of prevalence in the population across an array of life events, (2) gender, age, and ethnic differences in the prevalence of different life events, and (3) the associations of the BISLE domains

with key outcomes (e.g., life satisfaction, subjective health).

METHODS

Participants

The NZAVS is a 20-year long panel study that started in 2009. Our analyses focus on Time 10 (2018/19), in which 47,951 participants completed the survey. This is the first time point where the NZAVS fully incorporates the BISLE. Further information regarding sampling procedures, retention rates, sample demographics, and questionnaire items can be found on the NZAVS website (see Sibley, 2021). The NZAVS is highly representative overall, yet there is some bias: (a) women are overrepresented, whereas men are underrepresented, by approximately 12% (b) people in their 20s are under-represented, (c) people of Asian ethnicity are under-represented, and (d) New Zealand Europeans are overrepresented (see Sibley, 2021; Stats NZ, n.d.). Our Time 10 sample also under-represents older adults (65+) as the NZAVS aims to track people as they age (see Sibley, 2021 for sampling procedures). Consequently, standard NZAVS post-stratification weighting procedures were applied to ensure sample representativeness (Sibley, 2021). This was done by weighting men and women according to their ethnic group and age band based on 2018 census statistics.

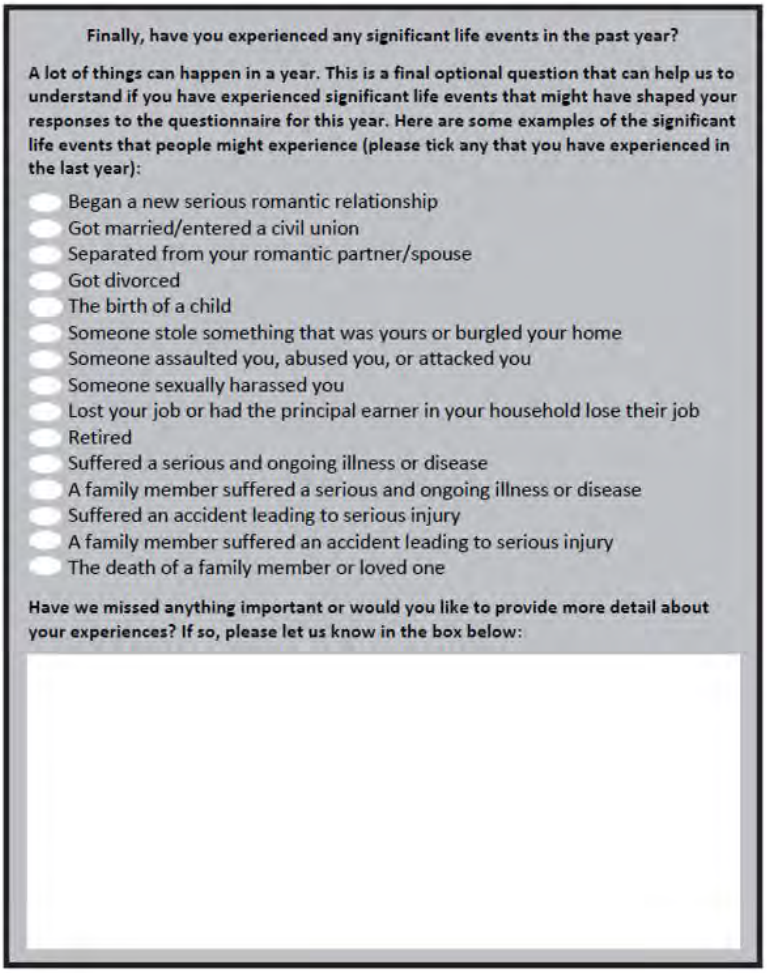


Figure 1. The Broad Inventory of Specific Life Events (BISLE) as Presented Within the New Zealand Attitudes and Values Study Survey

Regarding the sample's demographic characteristics, 17,810 men, 30,020 women, and 101 people who identify as gender diverse completed the Time 10 (2018) survey. The mean age of participants was 49.09 (*SD* = 13.86). For ethnicity, our sample consisted of 42,544 people who identified as New Zealand European (88.73%), 4,697 as Māori (9.80%), 1,039 as of Pacific Island descent (2.17%), 2,541 identified as Asian (5.30%), and 1,825 (3.81%) who reported another ethnicity or did not report one. Concerning other demographics of interest, 79.48% were employed (*n* = 38,025), 78.18% were born in New Zealand (*n* = 36,882), 74.70% were in a serious romantic relationship (*n* = 34,219), 70.54% were parents (*n* = 32,728), and 36.33% identified with a religious or spiritual group (*n* = 16,906).

Measures

The BISLE, as presented in the NZAVS, provides 15 key probe items of common life events followed by an open-ended response option (see Figure 1). The BISLE is easy and quick to complete, with participants asked to consider if any significant and important changes have occurred in the past year that affect their responses. Open-ended responses are coded to a schedule of 590 major life events at the most detailed level using the coding scheme developed as part of the BISLE. The 590 major life events are then categorized into three hierarchical levels to examine life events at different levels of specificity.

For other variables of interest, age was calculated using participants' date of birth. For ethnicity, the standard census item was used, with a checklist and open-ended response section used to indicate which ethnic groups participants identify with. We then priority coded ethnicity into four mutually exclusive groups. Identification with Māori was prioritized over all other ethnicities, followed by Pacific, Asian, and then European (includes all European descent identities like New Zealand European and Italian). Any other ethnicities were not included in the variable. To capture participants' gender, an open-ended question asking, "What is your gender?" was used. Open-ended responses were then coded using a two-level coding scheme, with gender categorized into general identity categories (e.g., women, men, transgender, etc.) at the broadest level. Our analyses focus on those who identified as women or men. To assess convergent and discriminant validity, we also measured participants' life satisfaction, personal well-being, psychological well-being, subjective health, perceived

discrimination, and perceived national well-being (for more details, see Appendices S3 and S4 in OSM).

Procedure

To generate the events coded within the BISLE, we reviewed previous inventories and participants' open-ended responses (for a full list of items, see File S1 in OSM). The BISLE coding scheme categorizes life events into three levels: specific life events (Level 3, the most detailed level), broad life event categories (Level 2), and general life event domains (Level 1) to provide population-level trends in life event occurrence. First, we created the specific life events (Level 3). Starting with the SRRS (Holmes & Rahe, 1967), we assigned five-digit codes to the most common events listed across previous checklists (e.g., got divorced; birth of a child). Events were then specified further where possible (e.g., negative and positive change in own health). Traumatic events inventories were reviewed (e.g., Norris, 1990) to create a variety of traumatic events (e.g., tragic death; natural disaster). We also incorporated events significant to New Zealand's current society (e.g., discrimination, immigration). The core life events from the inventories we reviewed (e.g., death of family member, job loss etc.) were then selected to form the brief checklist that participants complete, with the remaining specific events coded based on the self-generated responses by participants. Therefore, the checklist of common life events in the BISLE provides participants with a selection of 15 specific life events (Level 3) from the inventory that demonstrate what types of experiences participants may want to report as an important life event in the open-ended section.

The original BISLE included 475 events at the most detailed level. However, the inventory was designed so that new events could be added later while keeping the inventory coherently organized. Thus, given recent unprecedented events in New Zealand (e.g., Christchurch Terrorist Attack, COVID-19 pandemic), the initial list of events was revised to add new relevant events. We also took this opportunity to further specify some original events, based on the detail provided in participants' open-ended responses. This was to ensure the BISLE covers as many types of events as possible and increase its applicability over time. For the new events, we reviewed current literature on stressors during COVID-19 (e.g., Jean-Baptiste et al., 2020). This resulted in adding a new Level 2 category called 'Pandemic/Epidemic'. Other novel events (e.g., 'terrorist attack/mass shooting', 'misinformation in the media') were also added. To illustrate further specified events, change in work hours or conditions was further broken down into 'increased workload/work hours' and 'reduced/lost work hours'. After this process was complete, the final BISLE included 590 events at the most detailed level (see File S1 in OSM for a complete list of events in the BISLE).

The BISLE protocol involves a simple yes/no (1 = yes, 0 = no) scheme to code participants' open-ended responses. Open-ended responses are first coded to the specific life events (Level 3), with any event that occurred at least once in the past year coded as 1 (yes). If 'no' was followed by an event, we prioritized the stated event (e.g., "no but we did move house"). Events coded as 'outside time period' used the time frame given in the response (e.g., "in 2014…"). Otherwise, events were coded as occurring in the past year. Responses coded as 'other' include providing a status but not a specific event (e.g., "I am a university student"). Any stated events that did not have a particular code in the BISLE but fit within a broad event category or general domain were coded in the 'other' option within that category/domain (e.g., 'other work-related event'). Any endorsed probes from the checklist were merged with the coded open-ended responses. If participants ticked one of the checklist's key probe items but further specified the event in their open-ended response (e.g., "it was my sister that died"), the code was changed to be more specific (i.e., 'death of sibling' over 'death of family member'). After devising the coding scheme, a detailed coding guide was created with specific instructions (including details on what classifies as a major life event; see Monroe & Slavich, 2020) and examples to ensure consistent coding across independent coders (for coding details and examples, see File S1 in OSM). Given the personal nature of some of the long and unique descriptions, the statistical standard provides more generalized examples of responses that maintain the ethical standards of confidentiality.

Once coded, the 590 specific life events (Level 3), including the merged checklist probe events, were then grouped into 141 broad life event categories (Level 2) and then again into 22 general life event domains (Level 1). We created the broader levels during the development stage of the inventory once the list of specific events was finalized. Therefore, the process of collapsing the specific events into the broader levels is an automatic process once coding is completed. However, researchers can form new categories using the specific events if required for their research question (e.g., grouping job loss, death events, and relationship break-up to create a general 'loss' category). The events for the broad event categories and general domains were created using less specific events stated in previous inventories (e.g., church activities; Holmes & Rahe, 1967) and life event domains used in other research (e.g., financial events; Roohafza et al., 2011). Categorization of the specific events into these broader levels was based on prior research using event categories (e.g., Dohrenwend et al., 1978; Roohzfza et al., 2011) and organic groupings decided by the primary coder (CH) when developing the inventory. The organic groups primarily consisted of the new events and domains (e.g., social issues, discrimination). The purpose of these higher-order levels is to compare the types of life events reported at the national level. Codes under the domain of 'other' were not included in our analyses as these identified missing responses or responses that could not be interpreted or coded.

RESULTS

Inter-Rater Reliability of the BISLE

An independent coder (CH) coded all Time 10 responses. Coding 47,951 responses took roughly 500 hours given the large sample size of the NZAVS, but coding will be less time-intensive for smaller samples. Of these coded responses, a random sample of 500 were then coded by another independent coder (EZ) according to the life event domain (Level 1) codes to assess inter-rater

Table 2. Frequency of Occurrence using Weighted Sample across Life Event Domains (Level 1) of the BISLE

	N	%
Life event domains (Level 1)		
Deaths	9977	21.25
Relationships	4511	9.61
Work	6471	13.78
Health	13919	29.65
Family	1029	2.19
Financial events	623	1.33
Family additions	2995	6.38
Celebrations	1408	3.00
Housing	1618	3.45
Traumatic events	3127	6.66
Lifestyle changes	273	0.58
Possessions	3532	7.52
Study	723	1.54
Achievements	255	0.54
Travel	531	1.13
Implications with the law	272	0.58
Religion	98	0.21
Immigration	82	0.17
Gender identity and sexuality	25	0.05
Discrimination	83	0.18
Social issues	645	1.37

Note. Estimates and frequencies are based on the weighted sample.

reliability. As shown in Table S3 (see OSM), the percent agreement between the two independent coders for all domains was extremely high (96.60%). Cohen's kappa revealed almost perfect agreement between our two independent coders across domains. Kappa coefficients ranged from .87 to 1.00 (*p*s <.001).

Prevalence across Broad Life Event Categories (Level 2)

Annual prevalence estimates varied across life event categories (see Table S4 in OSM). Based on weighted sample estimates, illness and health-related conditions (24.79%) were the most frequently reported annual events. Other health events were also coded, including accident and injury (6.35%), mental health (1.68%), and treatment (1.72%). The next most frequently reported event overall was a family member's death (20.82%). In contrast, death of a friend (0.32%) and death of a pet (0.25%) were less common. Work events were frequently reported, the most common being job loss (5.26%), retirement (4.93%), and employment changes (3.58%). Similar occurrence rates were also recorded for relationship events, particularly began a relationship (5.68%) and relationship breakdown (5.20%).

Traumatic interpersonal events (5.83%) were the most reported traumatic events within the last year. This was followed by tragic death (0.36%) and motor vehicle crash (0.25%). Other traumatic events of significance in New Zealand were also recorded, including terrorist attack/mass shooting (0.15%) and natural disaster (0.08%).

Other stressful life events assessed in the BISLE were reported less frequently. For example, 0.16% violated the law, and 0.20% had been in a legal battle. Regarding negative events unique to the BISLE, only 0.07% reported having immigration or visa issues within the previous year. Institutional discrimination was reported by 0.11%, and 0.04% reported experiencing interpersonal discrimination. The prevalence of societal issues varied, with 1.24% reporting local issues and 0.20% reporting global issues.

The BISLE also recorded the annual prevalence of positive life events. Marriage (2.74% of weighted sample estimates) and birth (5.58%) were reported the most. In contrast, traveling (0.58%) and holidays (0.32%) were less common. For positive events unique to the BISLE, 0.09% reported a personal achievement, 0.34% reported gaining a qualification or graduating, 0.20% celebrated a birthday, and 0.06% celebrated an anniversary.

The annual prevalence rates for other broad life event categories also differed. Events original to the BISLE were less prevalent, such as gaining citizenship and undergoing a gender transition (0.02% each). Pregnancy (0.70%) and fertility events (0.09%) were also recorded. 2.08% reported moving house locally, while 0.86% moved countries. University events were reported by a number of people (1.08%), compared to school (0.14%) and training events (0.10%). Religious events were less frequent, with 0.12% reporting a change in their faith, religion, or spirituality, and only 0.01% reporting a change in church activities.

Due to the greater specificity of the BISLE compared to other assessments, we also compared the prevalence of positive and negative event categories. For example, financial gains were reported by 0.25% of people, compared to 0.69% reporting financial concerns. Other domains showed a similar trend: family connection (0.60%) versus family troubles (0.82%); relationship improvements (0.05%) versus relationship difficulties (0.16%); gaining possessions (0.89%) versus loss of possessions (6.63%). Conversely, positive lifestyle changes (0.23%) were reported at a similar rate to negative lifestyle changes (0.22%).

Prevalence of General Life Event Domains (Level 1)

Annual prevalence estimates across life event domains are shown in Table 2 and Table S4 (see OSM). The 141 broad life event categories (Level 2) were collated into 22 general life event domains (Level 1) to explore national-level trends across life events. Based on weighted sample estimates, health (29.65%), death (21.25%), work (13.78%), and relationship (9.61%) events were the most common annual events. Other notable domains were also recorded: family additions (6.38%), traumatic events (6.66%), possessions (7.52%), housing (3.45%), travel (1.13%), financial events (1.33%), social issues (1.37%) celebrations (3.00%), and achievements (0.54%). The least common annual events were in the domains of religion (0.21%), immigration (0.17%), discrimination (0.18%), and gender identity and sexuality (0.05%).

Table 3. Frequency of Occurrence by Age and Chi Square Tests for each Life Event Domain (Level 1) across Age

	18-29		30-64		65+		χ^2
	N	%	*N*	%	*N*	%	
Life event domains (Level 1)							
Deaths	1238	21.36	7558	20.46	931	21.92	6.69*
Relationships	1114	19.22	2409	6.52	124	2.92	1281.65***
Work	687	11.85	4620	12.51	940	22.13	317.99***
Health	1692	29.19	11129	30.12	1430	33.66	26.63***
Family	96	1.66	1021	2.76	117	2.75	24.32***
Financial events	57	0.98	581	1.57	57	1.34	12.54**
Family additions	445	7.68	2329	6.30	176	4.14	52.25***
Celebrations	274	4.73	833	2.26	66	1.55	142.90***
Housing	303	5.23	1299	3.52	137	3.23	44.16***
Traumatic events	592	10.21	2172	5.88	166	3.91	204.31***
Lifestyle changes	26	0.45	217	0.59	29	0.68	2.55
Possessions	502	8.66	2353	6.37	240	5.65	49.45***
Study	212	3.66	311	0.84	11	0.26	385.59***
Achievements	67	1.16	83	0.23	12	0.28	127.00***
Travel	104	1.79	360	0.97	53	1.25	31.89***
Implications with the law	26	0.45	214	0.58	17	0.40	3.42
Religion	13	0.22	52	0.14	7	0.17	2.33
Immigration	9	0.16	40	0.11	0	0.00	5.94
Gender identity and sexuality	10	0.17	17	0.05	0	0.00	16.65***
Discrimination	3	0.05	85	0.23	7	0.17	8.22*
Social issues	57	0.98	474	1.28	79	1.86	15.00***

* $p < .05$. ** $p < .01$. *** $p < .001$. $df = 2$.

Age Differences

Chi-square tests on the unweighted sample were conducted to see if age differs across life event domains (Level 1; see Table 3). Occurrence significantly declined with age for events related to relationships, health, family additions, celebrations, traumatic events, and study. Furthermore, younger people reported significantly higher occurrence across age cohorts in the domains of housing, possessions, achievements, and gender identity and sexuality. In contrast, younger people reported significantly lower rates than other age cohorts for family events, financial events, and discrimination. Older people reported significantly more work events and social issues than other age cohorts. Middle-aged people reported significantly lower occurrence of death events than other age cohorts. No significant age differences were found for lifestyle changes, implications with the law, religion, and immigration. Overall, younger people reported higher rates of various life events in the last year, including traumatic and more positive events.

Gender Differences

As shown in Table 4, chi-square tests on the unweighted sample revealed that women reported significantly more events than men in the past year for the following domains: deaths, relationships, work, health, family, financial events, family additions, housing, traumatic events, lifestyle changes, study, travel, implications with the law, and gender identity and sexuality. In contrast, men reported significantly more possession events and social issues than women. Further analyses suggest that many of these significant gender differences hold across age cohorts (see Appendix S1 in OSM). However, no significant gender differences were found for celebrations, achievements, religion, immigration, and discrimination. The overall pattern suggests that women report more annual life events than men in interpersonal, work, and financial domains.

Ethnic Differences

Chi-square tests on the unweighted sample revealed significant ethnic differences across life event domains (Level 1; see Table 5). Māori and Pacific people reported the highest occurrence of death events, whereas Asian people reported the lowest across ethnicities. Māori and Pacific people also reported significantly more health events, lifestyle changes, and implications with law than other ethnicities. However, Pacific and European people reported significantly higher rates of travel events than other ethnicities. Pacific people reported significantly higher occurrences of family additions and religious events, whereas Europeans reported significantly lower rates in these domains than other ethnicities. Pacific people also reported significantly more financial events than other ethnicities. Europeans also reported significantly lower rates of relationship and celebration events than other ethnicities.

Māori reported significantly higher annual prevalence of traumatic and possession events than other ethnicities. Asian people reported significantly more study events and achievements, but significantly less housing and family events compared to other ethnicities. Relative to other ethnicities, Asian and Pacific people reported significantly higher rates of immigration events and discrimination. Many of these significant ethnic differences also occurred within age cohorts (see Appendix S2 in OSM). However, no significant ethnic differences were found for work, gender identity and sexuality, and social issues. In sum, ethnic minority group members experienced the most life events, particularly negatively-valenced events, in the past year.

Summary of Trends across Age, Gender, and Ethnicity

Figure 2 shows the annual prevalence, using unweighted sample estimates, of life event domains (Level 1) by ethnicity, gender, and age. Focusing on the more frequently reported events, women reported more death, relationship, and health events than men across age cohorts for Māori and Asian ethnic groups. However, Māori men aged 65+ had higher rates of work events than Māori women aged 65+. European women had higher rates of work events across younger and middle-aged cohorts. Middle-aged European women also had higher rates of relationship events than men, however younger cohorts reported similar rates. Pacific men reported more death and relationship events than Pacific women across

Table 4. Frequency of Occurrence by Gender and Chi Square Tests for each Life Event Domain (Level 1) across Gender

	Women		Men		χ^2
	N	%	*N*	%	
Life event domains (Level 1)					
Deaths	6423	21.79	3284	18.88	56.42***
Relationships	2366	8.03	1251	7.19	10.70**
Work	4158	14.11	2077	11.94	44.47***
Health	9696	32.89	4499	25.86	255.97***
Family	1026	3.48	207	1.19	224.09***
Financial events	513	1.74	181	1.04	36.72***
Family additions	2053	6.97	895	5.15	61.44***
Celebrations	753	2.56	416	2.39	1.20
Housing	1306	4.43	426	2.45	120.70***
Traumatic events	2012	6.83	893	5.13	53.86***
Lifestyle changes	193	0.66	79	0.45	7.63**
Possessions	1861	6.31	1222	7.03	9.02**
Study	418	1.42	113	0.65	57.67***
Achievements	98	0.33	63	0.36	<1
Travel	355	1.20	161	0.93	7.81**
Implications with the law	190	0.65	67	0.39	13.50***
Religion	51	0.17	20	0.12	2.44
Immigration	32	0.11	16	0.09	<1
Gender identity and sexuality	18	0.06	3	0.02	4.69*
Discrimination	67	0.23	26	0.15	3.35
Social issues	332	1.13	278	1.60	18.97***

* $p < .05$. ** $p < .01$. *** $p < .001$. $df = 1$.

age cohorts. However, Pacific women reported more work and health events than Pacific men except for in the 18-29 cohort, where Pacific men reported higher rates.

Considered another way, Māori and Asian men and women aged 65+ reported more death events than other age cohorts. European women aged 65+, and European men aged 18-29, also noted more death events. Conversely, Pacific men across age cohorts reported similar rates of death events, whereas Pacific women aged 65+ reported lower rates than other age cohorts. Similarly, European, Māori, Asian, and Pacific men and women aged 18-29 reported higher rates of relationship events than other age cohorts. Across ethnicities, men and women aged 65+ reported more work events than other age cohorts. Māori, European, and Pacific men and women aged 65+ reported higher rates of health events across age cohorts. In contrast, Asian women aged 65+ reported higher rates of health events, but Asian men aged 65+ reported lower rates than other age cohorts. These patterns suggest that women across age cohorts, and those aged 65+ and 18-29 for both genders, reported higher annual rates of various types of life events across most ethnic groups.

Convergent and Discriminant Validity

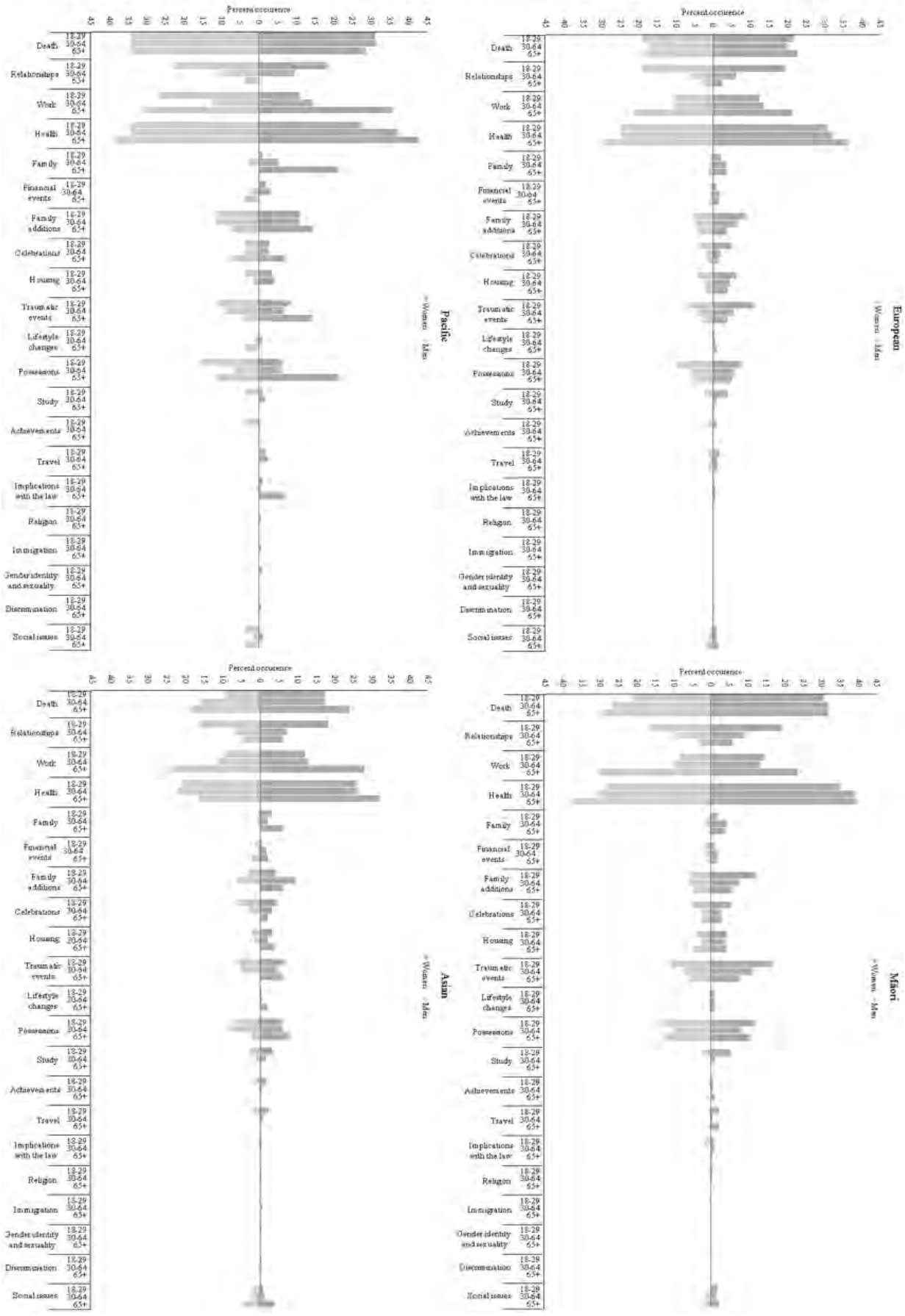
To assess the convergent and discriminant validity of the BISLE, we first explored the means for life satisfaction, personal well-being, psychological well-being, subjective health, perceived discrimination, and national well-being across reported events for each BISLE domain (Level 1; see Table S5 in OSM). The pattern of means was in the expected direction (see Table S5 in OSM for an overview). For example, life satisfaction and personal well-being was higher for positive events (e.g., celebrations) but lower for negative events (e.g., traumatic events), whereas psychological distress showed the opposite trend. Furthermore, subjective health was lower for health events, perceived discrimination was higher for discrimination events, and national well-being was lower for social issues.

Table 5. Frequency of Occurrence by Ethnicity and Chi Square Tests for each Life Event Domain (Level 1) across Ethnicity

	European		Māori		Pacific		Asian		χ^2
	N	%	*N*	%	*N*	%	*N*	%	
Life event domains (Level 1)									
Deaths	7364	19.51	1383	29.97	274	32.39	391	16.58	369.08***
Relationships	2731	7.24	480	10.40	94	11.11	225	9.54	83.24***
Work	5007	13.27	616	13.35	126	14.89	296	12.55	3.02
Health	11240	29.78	1666	36.10	298	35.23	578	24.51	125.43***
Family	972	2.58	146	3.16	33	3.90	43	1.82	16.93***
Financial events	545	1.44	73	1.58	22	2.60	29	1.23	8.98*
Family additions	2234	5.92	346	7.50	94	11.11	168	7.13	56.56***
Celebrations	875	2.32	140	3.03	27	3.19	85	3.61	24.07***
Housing	1454	3.85	165	3.58	27	3.19	52	2.21	17.86***
Traumatic events	2147	5.69	492	10.66	65	7.68	126	5.34	180.68***
Lifestyle changes	204	0.54	40	0.87	8	0.95	10	0.42	10.62*
Possessions	2321	6.15	445	9.64	58	6.86	155	6.57	82.20***
Study	396	1.05	67	1.45	10	1.18	45	1.91	19.15***
Achievements	120	0.32	16	0.35	2	0.24	17	0.72	10.91*
Travel	427	1.13	32	0.69	12	1.42	23	0.98	8.50*
Implications with the law	196	0.52	38	0.82	7	0.83	10	0.42	8.81*
Religion	47	0.13	11	0.24	3	0.36	7	0.30	9.85*
Immigration	35	0.09	3	0.07	3	0.36	8	0.34	18.14***
Gender identity and sexuality	23	0.06	0	0.00	1	0.12	1	0.04	3.47
Discrimination	73	0.19	3	0.07	3	0.36	11	0.47	13.85**
Social issues	451	1.20	72	1.56	11	1.30	39	1.65	7.58

* $p < .05$. ** $p < .01$. *** $p < .001$. $df = 3$.

Figure 2. Frequency of Occurrence across Life Event Domains (Level 1) by Ethnicity, Age, and Gender



Next, we conducted several regression models, using the unweighted sample, examining links between the BISLE domains (Level 1) and key outcomes while controlling for key demographics and personality traits. If the BISLE is a valid assessment of the reported occurrence of major life events, then the BISLE domains should hold predictive power for general well-being outcomes in expected directions. Thus, we investigated whether the BISLE domains accurately predicted life satisfaction, personal well-being, and psychological distress (see Appendix S3 in OSM for specific predictions and complete results). As expected, relationship (β = -.05), work (β = -.02), health (β = -.07), and traumatic (β = -.06) events were significantly associated with lower life satisfaction, whereas celebrations (β = .03) and family additions (β = .05) were significantly associated with higher life satisfaction. Similarly, relationship (β = -.06), work (β = -.03), health (β = -.11), and traumatic (β = -.08) events were significantly associated with lower personal well-being, while celebrations (β = .03) and family additions (β = .04) were significantly associated with higher personal well-being. Conversely, study events, achievements, lifestyle changes, and immigration events were not significantly associated with life satisfaction and personal well-being. We also found that death (β = .02), relationship (β = .04), work (β = .04), health (β = .08), financial (β = .01), and traumatic (β = .07) events were significantly associated with higher psychological distress, whereas family additions (β = -.01) were significantly associated with lower psychological distress. In contrast, the more emotively neutral BISLE domains (e.g., family, housing, study, travel, and lifestyle changes) were not significantly associated with psychological distress.

We also assessed whether the BISLE domains showed distinct relationships with domain-specific outcomes: subjective health, perceived discrimination, and national well-being (see Appendix S4 in OSM for specific predictions and complete results). To demonstrate that specific domains of the BISLE are valid measures of events within that life domain, they should accurately predict related outcomes in expected ways. As predicted, health events (β = -.15) were significantly associated with lower subjective health, discrimination events (β = .03) were significantly associated with higher perceived discrimination, and social issues (β = -.07) were significantly associated with lower national well-being. Furthermore, unrelated events in the BISLE (e.g., study events, family events, lifestyle changes) were not significantly associated with these specific outcomes. These analyses support the convergent and discriminant validity of the BISLE by showing that the BISLE domains are associated with several related outcomes in ways that are congruent with prior literature.

DISCUSSION

The BISLE is a comprehensive inventory and coding scheme that categorizes major life events to detail national prevalence estimates for numerous life events occurring in the last year. By coding open-ended responses across three hierarchical levels, the BISLE covers a wider range of life events than those in previous inventories and indicates what people themselves perceive to be an important life event. We also illustrated the utility of the BISLE using a large-scale national probability New Zealand sample to document the annual population prevalence of diverse types of life events and differences across life events for age, gender, and ethnic groups. Applying the coding scheme to participants' open-ended responses demonstrated high inter-rater reliability. In support of the convergent and discriminant validity of this measurement tool, the BISLE domains were associated with several key outcomes (e.g., life satisfaction) in expected directions. Although we did not directly compare our inventory with other inventories, these findings indicate that the BISLE shows greater inter-rater reliability, as well as comparable associations with key outcomes, relative to other well-established life events inventories (e.g., LEDS, UES; see Brown et al., 1973; Lewinsohn et al., 1985).

Annual prevalence estimates varied across life event domains using the BISLE (see Table 2 for a summary of estimates across BISLE domains). Health, death, and work events were the most common annual events. This aligns with population-based research both in New Zealand and North America (e.g., DIA, 2014; Goldberg & Comstock, 1980; Hobson & Delunas, 2001). However, relationship events were more frequent, whereas travel events were less prevalent, than reported in the research done by the DIA in 2014 using a smaller New Zealand sample. This suggests that the events reported using a basic checklist, as employed in previous research, may vary in important ways when asking participants to self-generate their own life events as the BISLE does (see also Frissa et al., 2016).

The BISLE also inventories a variety of traumatic events. The estimate provided for traumatic events using the BISLE was comparable to the estimate reported by Kazantzis and colleagues (2010) in a smaller New Zealand sample. Overall, our results support the notion that traumatic events are relatively common (e.g., Norris, 1992) and provides evidence that the BISLE is a useful tool to assess the annual prevalence of numerous traumatic events.

Regarding other events captured by the BISLE, possession events and family additions were also fairly common. The BISLE also assesses several events not covered in previous inventories, such as immigration, discrimination, gender identity and sexuality, and social issues. Furthermore, the BISLE records several positive life events, including celebrations and achievements. These data generated by the application of the BISLE adds to the extant lack of research on the prevalence of positive life events (Sotgiu, 2010) and reveals that many people report diverse types of life events every year.

The BISLE also extends research on demographic differences across life events. We found that women reported more annual events than men across almost all domains. Although the current findings contrast with prior research suggesting gender differences across different types of events (e.g., Flett et al., 2004), they do align with prior research showing that women, overall, experience more life events than men (see Davis et al., 1999; McLeod et al., 2016). Our findings that women report more work and financial events, for example, may reflect women's changing social roles beyond interpersonal domains, or that men are under-reporting experienced events

compared to women (Davis et al., 1999; McLeod et al., 2016). Therefore, idiosyncrasies in reporting life events between men and women would limit the ability of the BISLE to assess differences in actual occurrence (see Dohrenwend, 2006).

Traumatic events declined with age (for similar results, see Norris, 1992), and older people reported the most health, death, and family events annually (see Murrell et al., 1984). We also found that younger people reported higher annual rates of other life events compared to older adults, including relationships, family additions, and celebrations. In contrast, older people reported more work, financial events, and social issues than younger people. Thus, use of the BISLE reveals that age differences occur for several types of life events. However, due to our sample under-representing people aged 65 and over (see Sibley, 2021 for sampling procedures), caution must be taken when generalizing our findings to older adults.

Ethnic minority group members (Māori and Pacific) experienced more traumatic events annually than their ethnic majority counterparts (European), except for Asian people who reported the lowest occurrence (for similar findings, see Roberts et al., 2011). We also discovered that Asian people reported lower annual rates of death and health events, but higher annual rates of celebrations and achievements. This suggests that perhaps Asian people report more positive life events and fewer negative life events. Future research should further examine the rates of positive and negative events reported by Asian people, including the role of cultural differences in disclosure of stigmatizing events (Roberts et al., 2011).

We also found that Pacific and Asian people reported the highest annual rates of discrimination, which corroborates Kessler and colleagues' (1999) North American-based findings that ethnic minority group members experience more discrimination than ethnic majority group members. Furthermore, we found that Pacific people reported the most financial events in the past year across ethnicities. This aligns with previous research that shows that members of ethnic minority groups report more financial events than those in the ethnic majority (e.g., Franko et al., 2004).

Strengths, Caveats, and Future Directions

A key strength of the BISLE is indexing the annual population prevalence of previously underexplored life events. Our findings suggest that an important number of people experience life events every year that are not commonly inventoried by available checklists (e.g., Paykel et al., 1971), such as discrimination and achievements. Thus, our results provide evidence that, by coding open-ended responses according to a diverse array of life events, the BISLE is an important tool for assessing a wider range of both common *and* rare events, along with what people themselves perceive as a major life event in their lives.

However, although the BISLE has a number of strengths, the inventory focuses on the occurrence, but not other characteristics (e.g., perceived valence), of life events (see Sarason et al., 1978). This is due to the BISLE being developed for large-scale panel studies that often have limited space, but want to document any important life events, and changes in those events, people experience over time. However, the focus on only the occurrence of an event limits what can be inferred about the effects of different life events using the BISLE. This limitation is notable given studies have shown that event characteristics (e.g., manageability, controllability) are important in determining health outcomes (see Friborg, 2019). Nonetheless, the BISLE provides the necessary starting point to assess the prevalence of underexplored events, in which more narrow or targeted studies can examine in more complex ways.

Incorporating a checklist along with an open-ended response option yields a unique aspect of the BISLE. Furthermore, the open-ended section only measures events people consider important enough to report. This will differ across people based their individual idiosyncrasies (see Dohrenwend, 2006; Monroe, 2008). It will also depend on the motivation of participants to provide in-depth responses, as well as time constraints. Consequently, the national prevalence estimates generated by the BISLE capture an estimate of all instances in which people deemed an experienced event of relevance and importance in their own lives, rather than the objective occurrence of all events. While this subjective recall of events may pose some limitations (Monroe, 2008), life events that are deemed important to a person are found to predict psychological outcomes, including depression and quality of life, more strongly than objective occurrence (Boals et al., 2010). Therefore, utilizing self-generated life events in the BISLE provides unique insight into the diverse types of events people experience annually.

Memory and recall of events from the past year may also pose a limitation for the use of an open-ended response section in the BISLE. Although this unique approach allows the BISLE to capture a wider range of life events than possible using a checklist alone, prior research suggests that people are less likely to report events they have experienced using an open-ended question compared to a checklist of events (see Frissa et al., 2016). Consequently, estimates from the BISLE may be conservative, as participants may forget to report some events. However, research indicates that salient events (e.g., death of spouse) are not susceptible to recall issues relative to more normative events (e.g., family illness; Funch & Marshall, 1984). Therefore, combining the open-ended responses with an initial checklist of select probe events to prompt participants to recall important life changes allows the BISLE to reduce potential recall issues while also capturing the unique and wide range of events people report.

Looking Forward: Using the BISLE

The BISLE was developed for use in a large-scale national sample from New Zealand. As the BISLE includes both common *and* rare events, a large sample is most appropriate for research to benefit from the array of life events offered in the BISLE. This is because large samples can capture sub-groups of the population that experience more rare events (e.g., sexual assault) as well as those experiencing normative events (e.g., new job; Infurna et al., 2016).

The BISLE was also designed to examine the occurrence of life events every year. Thus, the BISLE provides a simple yet informative tool for capturing repeated measurements of self-reported life changes for researchers conducting multipurpose longitudinal studies. Incorporating the BISLE into longitudinal research and tracking life event occurrence over time (as we aim to do by implementing the BISLE over future NZAVS waves) will produce valuable data on experiences both before and after a wide range of naturally occurring events (Infurna et al., 2016; Poulin & Silver, 2019). For example, researchers can track changes due to unforeseen societal shifts caused by macro-level events, such as the COVID-19 pandemic and terrorist attacks. Current NZAVS research by Howard and colleagues (2022) used the BISLE to examine changes in reported life events among women and men during the first seven months of the pandemic in New Zealand compared to the same months in the year prior to the pandemic. Results indicated that people reported increased job loss, family troubles, and negative lifestyle changes during the pandemic relative to the prior year. However, the results also revealed that women were disproportionately represented in increased life events throughout the pandemic. These findings have important implications for policy and highlight the benefits of incorporating the BISLE into large-scale panel studies to track reported life events over time.

The use of a hierarchical structure to group life events in the BISLE means researchers can examine life events across different levels of specificity. For example, researchers may choose to focus on one domain (e.g., work) or examine relevant event categories (e.g., job loss and retirement). For example, researchers could use the BISLE to examine the predictors and outcomes of specific events (e.g., marriage on personality; Bleidorn et al., 2018), including how individuals commonly or differentially adapt to and anticipate various life events (Infurna et al., 2016).

A common approach to assessing life events is to create a sum score of reported events that indicates how much stress people have been exposed to over a given time period (see Wethington, 2016). Although this approach is not an explicit application of the BISLE, the wide range of life events offered in the BISLE can be used to create sum scores from either all or select life events. For example, Newton et al. (2022) used the BISLE to assess the impact of life events, along with age and ethnicity, on well-being among European and Māori women aged 40 and over. Negative events relevant to older women (e.g., death of spouse) from six categories (e.g., death) were summed to indicate the occurrence of an event in each category, and these were then summed to provide an index of the number of stressful life events experienced. Results indicated that the stressful life events score was negatively associated with life satisfaction but positively associated with meaning in life. These findings highlight another way the BISLE can be incorporated into research to advance understanding of the prevalence and impact of life events.

While the events coded in the BISLE were created in a New Zealand context, cross-cultural research shows that normative events (e.g., childbirth) are relatively universal (Scherman et al., 2017). However, different cultures do note different types of events as important (Scherman et al., 2017). For example, prior research suggests that Mexican people emphasize family and religious events, whereas Chinese people emphasize education and work events (Scherman et al., 2017). As the BISLE uses both a checklist and open-ended responses to index a wide range of events, it can capture the cultural variations in what people perceive as an important event required for a measurement tool to be cross-culturally useful. Future research should explore the utility of the BISLE in other populations and contexts to fully understand its applicability.

Many researchers are now calling for research to examine multiple types of life events (e.g., Monroe & Slavich, 2020). By measuring a wide range of life events simultaneously, the BISLE is a unique tool to assess the differential and relative effects of different types of life events, from positive to negative and personal to collective events. To illustrate, use of the BISLE can extend the lack of research testing links between specific types of life events and particular illnesses (see Cohen et al., 2019). Similarly, the BISLE can also be used to advance tentative evidence for the role of different life events in personality development (see Bleidorn et al., 2018). The inclusion of positive events in the BISLE also provides the opportunity to investigate the role of positive events (versus negative events) in clinical outcomes, such as depression (see Chang et al., 2015). Therefore, the BISLE can be used to extend currently limited understandings on when different life events converge or diverge in their effects by widening the scope of examinable events (see Monroe & Slavich, 2020).

Conclusion

This study presented the BISLE, a comprehensive inventory and coding schedule that categorizes major life events to examine the national prevalence of a wide range of life events occurring in the previous year. The BISLE was developed for large-scale panel studies with limited space that could benefit from capturing self-reports of diverse life events occurring in people's lives over a given timeframe. Notably, the BISLE utilizes a quantitative checklist of select probe events *and* qualitative open-ended responses to capture what people perceive to be a noteworthy event for themselves. By coding open-ended responses across three hierarchical levels using a new coding scheme, the BISLE extends prior inventories that focus on a subset of traumatic events to assess a much broader range of life events. Applying the coding scheme to responses generated by the BISLE revealed excellent inter-rater reliability. Using a large-scale national probability New Zealand sample, the BISLE predicted several key outcomes, including life satisfaction and psychological distress, in expected ways. Our results reveal that people experience diverse types of life events each year. Health, death, work, and relationship events were the most frequently reported. Traumatic events and positive events, including birth and marriage, were also fairly common. Events unique to the BISLE, such as social issues and experiences of discrimination, varied in prevalence but were overall less common than the above events. Estimates using the BISLE also demonstrate that life events differ amongst key demographic groups,

including gender, ethnicity, and age. Overall, our results provide evidence that the BISLE is an important tool for examining diverse life events over a year and can be used to extend our understanding of how life events may affect important outcomes for people over time.

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Declaration of Interests
The authors declare that there is no conflict of interest regarding this manuscript.

Data Availability Statement
The data described in this manuscript are part of the New Zealand Attitudes and Values Study (NZAVS). Full copies of the NZAVS data files are held by all members of the NZAVS management team and advisory board. A de-identified dataset containing the variables analysed in this manuscript is available upon request from the corresponding author, or any member of the NZAVS advisory board for the purposes of replication or checking of any published study using NZAVS data. The Mplus syntax used to test all models reported in this manuscript are available on the NZAVS website: www.nzavs.auckland.ac.nz (also see the NZAVS OSF: https://osf.io/75snb/). Ethical restrictions and the need to protect the confidentiality of study participants prevent public deposition of raw data. Data may be requested from Chris Sibley (c.sibley@auckland.ac.nz) and the full statistical standard for life events in the NZAVS is provided in the supplemental information available at https://osf.io/75snb/.

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Online Supplemental Materials (OSM)
Supplemental materials for this article are available online in the supplemental information folder for the NZAVS (please see the sub-folder using the citation for this article) at: https://osf.io/75snb/