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Editor's Introduction

An introduction to this issue, foreshadowing a special 'issue', and advice for authors.

Prelude to this issue: Volume 51, issue 3 presents five articles. They include case studies (e.g., Pine & Bruckner), an 'evaluation' study (Hond-Flavell and colleagues), a survey of lived experience of mental health recovery among people who teach into psychology courses (Sen Gupta and Taylor) and two studies drawing from the New Zealand Attitudes and Values Study. As well as highlighting diversity of perspectives and subject matter, I want to specifically comment on the work of Hond-Flavell and colleagues, and Satherley and colleagues. Very different projects, but two that I am extremely happy to present here because they symbolise something I consider a vital role of the Journal.

Below I remind prospective authors of our requirement to establish the relevance of submitted manuscripts to our context in Aotearoa New Zealand. It seems to me this implies that research that holds a mirror to our context is important for us, and both of the highlighted works do this. They are also the products of highly productive research teams – Satherley working from the longitudinal NZAVS, and Hond-Flavell from a team that intersects with another amazing ongoing project hosted at the National Centre for Lifecourse Research. Both these teams have published recently in the Journal, hinting at their productivity but also the relevance of their work for this particular journal. I highlight this to signal that I am explicitly interested in work that says important things about our context – both descriptive and also grounded in the kind of theory that is relevant irrespective of the context. While I can imagine both of the highlighted works being published in international journals, they speak most directly particularly to research, practitioners, and lay-people in Aotearoa.

Advice to authors: Consistent with the imperative of the Journal, *any* submission must clearly articulate relevance in the context of Aotearoa New Zealand. The majority of desk rejections handled by NZJP are rejected for failing to make this case. Additionally, general attention to APA format is desirable – we're happy to convert manuscripts into the NZJP format but it is easier to do so if it is already most of the way there! Additionally, we insist that authors provide de-identified manuscripts, consistent with our historical commitment to 'blind' review. I reserve the right to bounce manuscripts back if this has not been done, and that adds delays to what can be a lengthy process in a pandemic-affected reviewing and publishing world. I appreciate that sometime 'blind' review isn't really blind, as in the case of studies that might explicitly draw from the NZAVS or Centre for Lifecourse Research – folks can guess who likely co-authors are, but I still appreciate authors attention to this requirement. 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.

Upcoming special 'issue' on Environmental Psychology: Over the coming months we will be posting the accepted submissions for this issue, before they are combined into a single volume. Keep an eye out.

Marc Wilson

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HRV Biofeedback Training for Children with Behavioural Disorders in New Zealand: Three Case Studies

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Although treatments exist for children with behavioural disorders, they often require significant time and are costly. The current pilot study aimed to conduct a preliminary investigation to examine the feasibility of a brief heart rate variability (HRV) biofeedback intervention for children with behavioural disorders in New Zealand (NZ). Participants included 10 children aged between 6 and 11 years who were referred to secondary mental healthcare services in NZ to treat non-compliant and aggressive behaviours. Participants included in the study had at least one diagnosis of attention deficit disorder (ADHD), Oppositional Defiant Disorder (ODD) or Anxiety Disorder (AD). Participants took part in 2 baseline HRV biofeedback sessions to understand how the HRV biofeedback tool HeartMath worked. After these baseline sessions, participants completed between 1 and 10 sessions of the biofeedback tool. We describe in detail case reviews of 3 participants with varied responses. Data is comprised of HeartMath performance and coherence scores, SDQ scores pre-and post-intervention, and clinical observations. Participants' achievement and coherence scores displayed meaningful patterns that seemed to demonstrate that learning was taking place, but SDQ scores did not indicate improvement patterns in socio-emotional or life impact factors. Participants found the biofeedback tool easy to use, and the intervention was easy to implement across environments. Given the need for low cost and accessible interventions, HRV biofeedback training may be a feasible and promising approach to support children with behavioural disorders in developing key self-regulation skills within the NZ context. However, more research is required to explore the potential of biofeedback interventions.

Keywords: *Biofeedback, Children, HRV, ODD, ADHD, Anxiety Disorder*

INTRODUCTION

Oppositional defiant disorder (ODD) is classified in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as a pattern of angry or irritable mood, argumentative behaviour, or vindictiveness which must occur for at least 6 months (American Psychiatric Association, 2013). The prevalence of ODD is estimated to range from 1.4% to 12.3% (Copeland et al., 2013; Cohen et al., 1993), with males more likely to be diagnosed with ODD than females (Demmer et al., 2016). As most symptoms such as irritable mood can begin to emerge during preschool and middle childhood (Kessler et al., 2005), young children with ODD often experience difficulties with emotional control and interacting with peers and family and are more likely to be diagnosed with other psychiatric difficulties (Greene et al., 2002). For example, disorders most often associated with ODD include anxiety disorders (AD) and attention-deficit/hyperactivity disorder (ADHD). As these emotional and behavioural challenges are often complex and have wide implications, it can be difficult for professionals to prioritise their treatment interventions.

Evidence-based interventions for children with behavioural disorders can broadly be categorised into

parent-focused and individual-focused treatments. The Incredible Years (IY) Parenting Training (PT) is a popular parent-focused treatment. This comprehensive and evidence-based (Menting et al., 2013) 14-session program for parents of children aged 3 to 8 is often recommended for helping parents learn skills to better manage children with challenging behaviour through techniques such as setting rules and instituting reward charts. Although there is substantial evidence for the efficacy of the IY PT for children with challenging behaviours, attrition in IY programs is often over 40% (Abrahamsse et al., 2016) due to factors such as the long period of commitment to the program. Further, there is less consensus about the program's efficacy for children with additional symptomatology or diagnoses such as ADHD (Murray et al., 2017).

Cognitive behavioural therapy (CBT) is an intensive program that aims to teach children with behavioural challenges a series of techniques for managing anger. Although a meta-analysis of CBT for children with anger outbursts has shown promising efficacy (Sukhodolsky et al., 2004), there is a lack of research examining the effectiveness of CBT for children with ODD and ADHD. Such interventions often require 12 weeks of one-hour sessions and a trained specialist to adapt components of

the program for the individual. With medication not recommended as a standalone intervention for children with ODD, OCD, or ADHD (Kültür, 2017), identifying accessible, time-efficient, and scalable interventions that can be delivered to support children with complex behavioural challenges is essential (Amray et al., 2019).

Biofeedback refers to electrical or electromechanical equipment that measures a user's physiological signals, such as heart rate or respiration. This information from the user's body about their physiological response is then made available to them, thus helping the user develop greater awareness and control within their bodies with and without equipment (Culbert et al., 1996; Dillion et al., 2016). As physiological information is accessible to the user, s/he can deliberately practise critical self-regulation skills (such as diaphragmatic breathing and mindfulness) to relax physically in ways that support emotional regulation. This practice aims to strengthen preparation for using these skills in real-world settings.

Research on biofeedback is still emerging; however, there appears to be promising efficacy for its use with psychiatric disorders such as anxiety (Banerjee & Argáez, 2017). Recently, in a systematic review of biofeedback interventions for treating anxiety and depression in children and adolescents with long-term physical pain, Thabrew et al. (2018) reported limited yet encouraging evidence for their efficacy, mainly when a multi-modal biofeedback approach was used to treat psychological distress (i.e., anxiety) in children and adolescents. Although encouraging, there appears to be limited research on biofeedback interventions for children with both behavioural and emotional disorders. This represents a significant gap in the literature, given the serious short- and long-term implications for children with behavioural and emotional comorbidities.

The aim of this pilot study was to conduct a preliminary investigation into the feasibility of a brief biofeedback intervention for children with behavioural disorders in the New Zealand (NZ) context. Specifically, we sought to discover whether such technology would be acceptable to the children, their whanau (family), and school personnel; and explore whether this intervention could be practically implemented with primary school-aged children in the school setting. Because of the exploratory nature of the pilot study, our results were not intended to meet the clinical trial criteria and are reported here in the form of case studies describing the experiences of three representative participants. These preliminary findings have informed a current research proposal for a more systematic and formal investigation into biofeedback for children with complex behavioural challenges.

METHOD

A pilot programme was designed to examine the experience of primary school-aged children with behavioural challenges who received basic HRV biofeedback for a minimum of 4 sessions. The protocol described below includes adjustments due to Covid as well as learnings during the course of the pilot. This pilot study was not registered as a trial so a trial registration number is not available.

Participants

We sought to recruit between 10 and 15 students between the ages of 4 and 10 who had been referred for mental health services due to clinically significant levels of anger and aggression. In all, ten children (8 boys and 2 girls) were enrolled; during the study, 2 participants moved out of the country, and 2 participants declined to continue treatment after the first treatment session.

Measures

EmWave: Coherence score – Coherence refers to a physiological state involving a balance between the parasympathetic and sympathetic nervous systems with an eventual relative increase in parasympathetic activity. Other physiological components coordinate with the heartbeat, and heart activity and brain activity become synchronised. It is typically indicated by a "large, characteristic spectral peak" recorded at around 0.1 hertz in the low-frequency band. A coherence score is a ratio based on a proprietary algorithm that reflects the level of coherence, calculated in 5-second intervals (HeartMath, n.d.)

Coherence ratio – HeartMath divides coherence into 3 levels– low, average, and high. The portion of the total session time spent in each level is represented by a coherence ratio score. The sum of all three ratio scores for each session will always total 100 (HeartMath, Inc., 2020).

Achievement score – This score reflects the sum of all individual coherence scores across the length of a single session. Achievement scores are increased when higher coherence scores are achieved during a session, and more extended amounts of time are spent in coherence (HeartMath, Inc., 2020).

Strengths and Difficulties Questionnaire (SDQ): The (SDQ; Goodman, 1997) is a 3-point Likert Scale questionnaire with well-documented acceptable reliability and validity. It can be administered to parents, teachers, and the children themselves, who report on behavioural, emotional, and social experiences. For this study, parent data was collected pre-and post-intervention.

Clinical observations: Data was collected from informal interviews with teachers, support staff, and parents. Clinical observation notes were taken in each session and used to provide a richer understanding of the biofeedback effects across environments, as well as providing context for each case. Initial attempts at developing overarching themes through the use of NVivo qualitative software were abandoned due to the limitations of the data collected, both in quantity and scope. Ultimately, observations were organized around (a) the main focal points of the pilot study, namely usability and acceptance, and the participant's ability to follow the protocol (e.g., sit still while using the emWave, follow instructions during deep breathing exercised); and (b) feedback from parents and school staff concerning changes in behavioural regulation. These are reported in the results section for each child.

Procedure

The study was proposed to run between September 2019 to April 2020. Due to Covid-19 restrictions, it was extended to November 2020, with a break during NZ's

lockdown period. A minimum of two baseline HRV and 3 intervention HRV sessions was required for inclusion. Session timing was initially planned at the convenience of participants' whānau or schools but soon moved to a regular weekly schedule.

Intervention: The planned intervention contained three brief activities carried out in close succession:

Approximately 60 seconds of deep breathing exercises using puppets and modelling

Two to three repetitions of a 45-second mindfulness exercise involving a Tibetan bell app available on smartphones

A coherence-building biofeedback session using HeartMath's emWave technology. Participants are supported to sit quietly, breathe along with the prompt to the best of their ability, and think about their heart and a happy memory or place (see HeartSmarts Adventure Leader's Guide (HeartMath Institute, 2019).

Biofeedback technology: Biofeedback therapy was provided using the emWave Pro from HeartMath (HeartMath Inc., 2019) loaded onto a laptop computer. It consisted of pulse sensors for the ear and thumb and a software programme that collects data and provides a graphic display for feedback of pulse, heart rate coherence, and other performance indicators. A breathing prompt was available on the screen and was used with participants in this pilot. The cost for this product, including the finger sensor, was approximately \$470 NZD.

RESULTS

The research protocol was carried out by and large as proposed, with the exception of intervention sessions and data collection being paused during Covid-19 lockdown periods. Other small adjustments were made as a result of learnings acquired during the pilot implementation, including, for instance, creating a more structured session and at a consistent time. We learned that schools provided a more consistent and accessible setting for intervention activities, and thus by the end of the pilot, all sessions were scheduled in schools.

Setting a target time of 3.5 minutes for emWave sessions as it became apparent that sustaining a coherence focus for longer did not improve coherence performance and could contribute to frustration for the participant.

CASE 1

Background: L is an 8-year-old NZ/European male who lives with his mother and older sister. L's aggressive behaviours at home and school resulted in a referral for specialised behavioural support, and though undiagnosed, L demonstrates behaviours consistent with ADHD. His mother experiences high levels of anxiety, and her whānau (family) provide regular parenting support for the 2 children. At home, L was described as uncooperative and physically aggressive. He had witnessed family violence in the past. School reports indicated L had a tendency to engage in externalising behaviours and required frequent teacher aide support to

provide classroom safety, avoid dysregulation, and enable him to follow through with instructions.

Intervention

Biofeedback sessions began in the home, where L was introduced to the technology and was able to try it out with his mother. During Baseline 1, L was fidgety and distracted. He found it difficult to sit still, and when he realised he could manipulate lines on the screen by moving his sensor finger, he persisted in wiggling this finger despite attempts to support him in staying still. During Baseline 2, L could sit still and be more compliant with instructions. He played happily with other toys using his non-sensor hand and asked questions about what he saw on the computer screen. By the following session, L had learned the routine and was able to engage for brief periods during the session.

After the 3 sessions that led up to the Christmas break, L's mother did not re-engage with our service following the holidays. We had decided to switch to school-based sessions by the end of February, but our research was then interrupted by multiple Covid-19 lockdown periods. Thus, it was June before we were able to re-initiate biofeedback sessions with L, and we arranged with his school to meet there in order to establish as consistent a schedule as possible under Covid-19 conditions. Despite multiple interruptions, L quickly became engaged again. In the following weeks, his enjoyment increased along with his ability to focus for longer periods of time. By this time, we had also learned the ear sensor was more effective than the finger sensor for L and most of our other participants.

Results

As demonstrated in Figures 1, 2 and 3, L's scores do not reflect any clear pattern of improvement in achievement or coherence ratio scores. However, the uneven frequency of treatment sessions may well have impacted this result. The length of time L was able to sustain coherence appears to have grown with practice.

There was no apparent increase in L's achievement or coherence scores. In addition, his SDQ score rose 5 points, indicating his mother perceived L to be experiencing increased difficulties by the end of the pilot programme. Also, his SDQ impact score of 5 was unchanged from pre- to post-intervention.

Nonetheless, school staff indicated that L looked forward to biofeedback and was observed running down the hall in excitement when told we were there. We capitalised on L's eagerness with the biofeedback tool and collaborated with school staff on a self-regulation plan for L that used parts of the breathing and mindfulness exercises developed for our pilot study. For instance, L brought one of the toys from our sessions into the classroom to remind him how it felt to be in coherence. He would use this cue when he became anxious about not being able to do what was being asked of him, such as during handwriting practice.

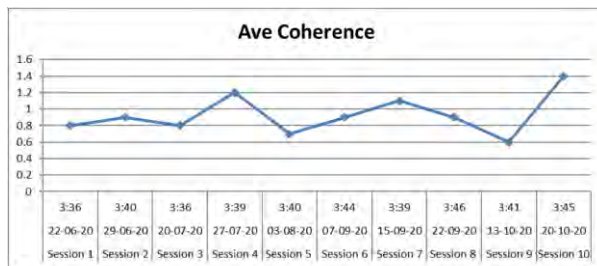


Figure 1. Average Coherence Score for L

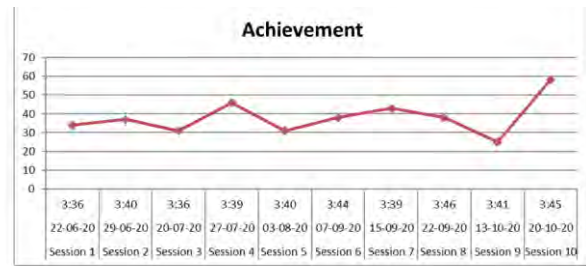


Figure 2. Average Achievement Score for L

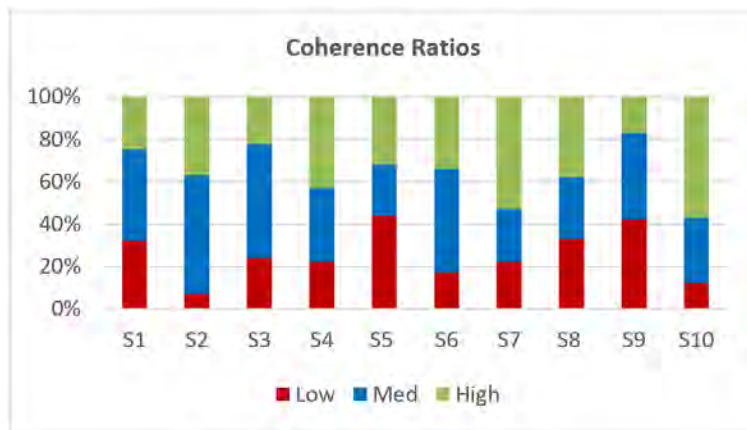


Figure 3. Coherence Ratios for L

Interviews with school staff after sessions during the latter stages of the pilot suggested L's aggressive behaviours at school had decreased to the point where it was no longer an issue. This enabled the adults around him to better understand L's anxious and challenging behaviours and respond accordingly. Further assessment revealed a pattern of performance anxiety became the focus of teacher and staff support rather than any aggression. At the time of his last session, his family was living in emergency housing, frequently moving between motel rooms. While he displayed heightened levels of anxiety during this upheaval, it did not stop L from continuing to enjoy himself in session and improve his biofeedback performance; he reached his highest achievement scores at this session.

CASE 2:

Background: T is a 7-year old NZ/European male who lives with his biological parents. T was referred for specialised support as he had been demonstrating an increase in anxiety and aggressive behaviours at home and school. Two important events occurred during the pilot study that appeared to influence T's behaviour and his self-regulation capabilities. First, he was clinically diagnosed with ADHD and began taking medication to help manage his symptoms. During initial adjustments and over time, T demonstrated changes in his affective and behavioural control. Secondly, T's parents enrolled in a 5-session group parenting course on emotional regulation skills offered by the clinical programme sponsoring this pilot study.

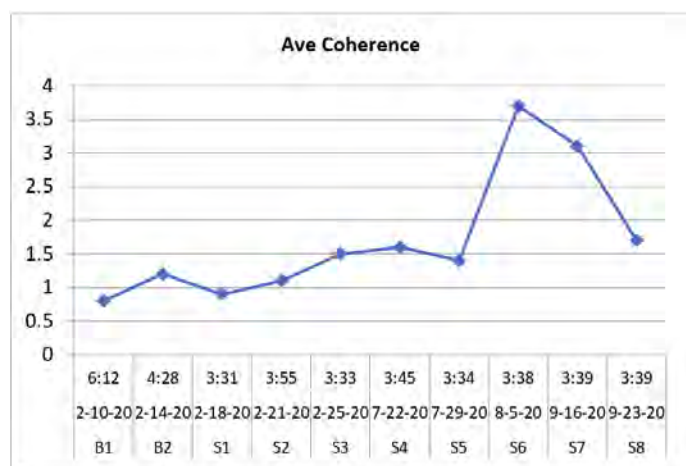


Figure 4. Average Coherence Scores for T.

T's parents attended every session and appeared fully engaged; their feedback reflected they had learned a significant amount of new information and had started to implement new strategies from the programme.

Intervention

During Baseline sessions, T demonstrated curiosity and a willingness to engage. He enjoyed playing with the sensor, was interested in how it impacted what was happening on the screen and gradually came to understand the goal of the activity. During the pilot programme, T experienced increased stress at home and school, and his parents indicated his angry and anxious behaviours were increasing. After one particularly aggressive and explosive incident, he arrived at Session 2 with dark circles under his eyes, subdued but cooperative. He was able to engage well during the session, and his scores demonstrated improvement over the previous session. Interestingly, Session 3 fell on his birthday—an affectively and emotionally aroused day for him. He was excited and happy yet was still able to participate fully in the session, and his scores reflected this. Following this positive experience, there was a long break due to Covid-19 lockdown restrictions. Over the course of his remaining sessions, T's effect varied. Despite this, his ability to focus and engage with the biofeedback tool consistently progressed, and he developed the ability to enter his zone at the start of biofeedback and remain in it for the entirety of the

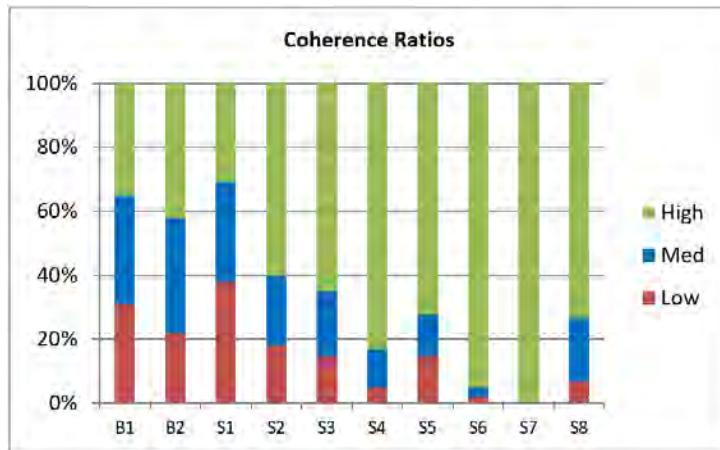


Figure 6. Average Coherence Ratios for T.

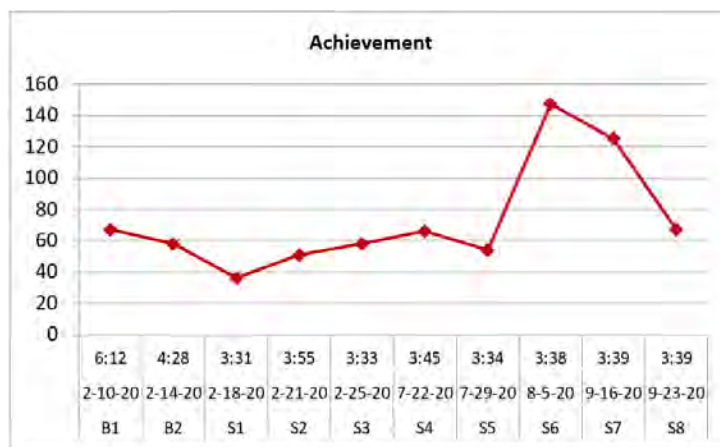


Figure 5. Average Achievement Scores for T.

session. By August 2020, he was earning near-perfect scores, and despite further Covid-19 disruptions, by the end of September, he had achieved 100% high coherence for an entire session.

Unfortunately, this progress with biofeedback was not matched by a parallel improvement in behaviour or self-regulation across environments. Only 48 hours after his 'perfect' high coherence session, T became severely dysregulated at home and injured himself badly enough to require surgery. In retrospect, the team realised this incident occurred during the period his medication was being adjusted; however, the fact remains that his behaviour stood in stark contrast to his improving biofeedback performance.

Results

T's achievement and coherence scores demonstrate a steady improvement after baseline, with a spike in both scores in the last three sessions. His coherence ratio distribution shows an increase over time in minutes spent in a high coherence state during each session. In-session observation notes indicate that regardless of T's presenting emotional state, he was able to engage successfully with the biofeedback process and move toward improved coherence.

In addition, T's general SDQ score increased by 9 points indicating his parents considered T to be

experiencing a higher level of difficulties by the end of the pilot programme. At the same time, his SDQ impact score dropped from 6 to 5, possibly reflecting T's increased ability to manage the challenges he was experiencing.

By session 8, T was demonstrating clear behavioural improvements at school. His teacher reported classroom aggression had decreased, and T's ability to follow instructions and focus in class had grown. However, he continued to struggle with regulating his emotions, especially when things did not go his way in class. Discussions with T's parents indicated that practises in the home had altered during the pilot study due to the previously mentioned parenting course they were attending, which likely represents another contributing factor behind some of T's behavioural change.

CASE 3

Background: W is a 7-year old male who identifies as Māori. He lives with his maternal grandmother after being removed from his biological mother's care due to care and protection concerns. W receives medication to help with symptoms of ADHD and ODD. W also displays characteristics that align with early trauma and disrupted attachment. Covid-19 impacted W's whānau through a loss of employment for his grandmother. This resulted in a need for revised childcare arrangements to accommodate a new job with late working hours. During the pilot, W also experienced increased visitation

with his biological mother, as well as weekly visits at a child and adolescent respite facility. Not surprisingly, the school were struggling more than ever with W's increased aggression toward and intimidation of other students, as well as his high levels of reactivity to all sorts of environmental and social triggers. More support was provided, but W still found it difficult to stay in the classroom and on task.

Intervention

W has engaged in 2 baselines and 3 regular sessions of biofeedback over approximately 4 months. While interruptions due to Covid-19 and school holidays impacted his participation rate, he sometimes refused to attend the session or was deemed too fragile and dysregulated to participate by school staff. When W attended biofeedback sessions, he appeared to enjoy both the novel experience and the challenge involved. Over successive sessions, he became less talkative and restless and more focused on meeting his own performance goals. Even when presenting with elevated affect or following an aggressive encounter, he has been able to focus on the feedback screen and tried to follow the breathing prompt.

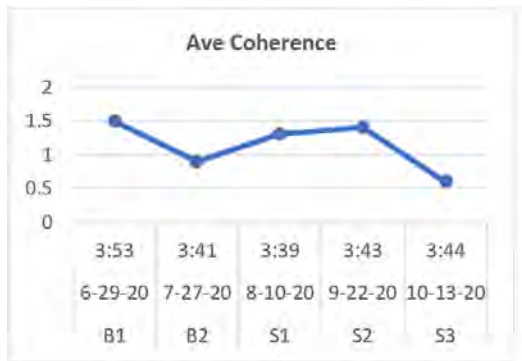


Figure 7. Average Coherence Scores for W.



Figure 8. Average Achievement Scores for W.

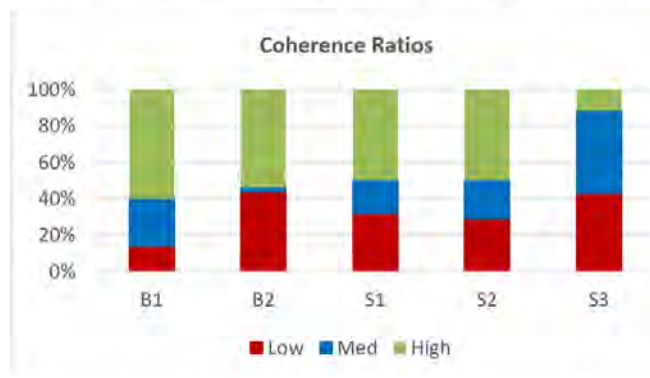


Figure 9. Average Coherence Ratios for T.

Results

Coherence and achievement scores from W's 5 biofeedback sessions demonstrate improvement over time after an initial drop from Baseline 1 (this drop is characteristic of all clients' scores) and another drop at his last session. Despite the long intervals between sessions, W remembered the routine, which involved focused and mindful breathing. Each time W was engaged in the session, he was eager to improve his results from his previous session, but this also elevated him into counterproductive performance pressure.

Missing data precludes SDQ score analysis for this client. No reduced aggression or improved regulation was noted by school personnel, and in fact, W was stood down from school just prior to the conclusion of the study.

DISCUSSION

We examined the feasibility of a biofeedback intervention for children with behavioural disorders in NZ. Data from the pilot programme, including the three participants documented in this study, indicate that HeartMath, a biofeedback HRV intervention, is an acceptable, engaging, and relevant tool to increase achievement and coherence scores for children with complex behavioural challenges.

Adherence, Engagement and Acceptability

Of the four participants who left the study early, two moved out of the country, and the other two declined to continue. Reasons for dropping out were not related to aversion to the biofeedback sessions but rather the severe

level of dysregulation and external stressors the participants and their whānau were experiencing at the time. The high dropout rate in the current study is consistent with findings from systematic reviews and meta-analyses for engagement with parent management programs (Michelson et al., 2013; Michael, 2018). For instance, in a meta-analysis investigating the dropout rates of parent management training in clinical and community settings, Michael (2018) found attrition rates ranged from zero to 70%, with an average mean weighted attrition rate of 26.2%. Although the current study recruited a small number of participants, a similar level of attrition was reported in the current study. Thus, it is essential to consider the diverse factors that may function as barriers to engagement with such interventions for families.

In general, we noted a positive response to the biofeedback equipment and software that included curiosity and enjoyment of a novel experience. Participants followed the session routine in the first session, and the basic concepts described during the sessions were understood by all our participants irrespective of cognitive or adaptive functioning levels. While there was an occasional need to scaffold participants' learning and provide extra time for comprehending instructions, overall, participants in the study were quick to understand how to use biofeedback. This finding aligns with previous research on the ease with which children aged 5 to 15 with learning disabilities and ADHD can understand and use biofeedback to regulate their emotions (Culbert et al., 1996; Linden et al., 1996). Further, despite various

uncontrollable factors such as the Covid-19 pandemic implications and medication changes, our data documents the promising potential of participant willingness to engage with this biofeedback tool and work toward increasing their achievement and coherence scores. This finding was also consistent with adults who were accepting of the equipment, routine, and concepts involved in this basic biofeedback approach. Parents who tried out the HeartMath programme enjoyed the experience and were open to helping their children use the concepts and practices in their daily routines. When we had requests from school staff who wanted a chance to try out our equipment and intervention, we received unanimously positive feedback. Overall, the pilot programme was successfully accepted by the students, their whānau, and their schools.

The biofeedback intervention's acceptability may be partly due to its brevity, as it was delivered in a short amount of time, with sessions typically lasting less than 30 minutes. We learned ways to administer the treatment programme more efficiently, such as setting up a regular time slot. Eventually, we were able to complete a session with a child in approximately 20 minutes. While more research is needed to discover what, if any, effect shorter sessions may have on performance, it is interesting to consider the scalability of such time-efficient treatment, whether as an intervention for clinical disorders in individual students or as a more broadly administered wellness programme. This stands in contrast to treatments such as CBT which require an expert understanding of the child's developmental and cognitive skills to adapt and tailor each intervention to an appropriate level. This often requires a considerable amount of time and skill on the part of clinicians (Beidas et al., 2010; van Starrenburg et al., 2017;).

In addition, clinical observations indicate the need to understand the role performance anxiety may have on inhibiting achievement scores for participants. As anxiety can be a significant contributor to aggression in children (Bilgiç et al., 2017; Cooley et al., 2017), future investigation of this potential obstacle would be important. This point is of particular interest, as we note the two participants who declined to continue in our pilot study had not yet made significant progress with other forms of treatment, making the identification of an effective alternative intervention even more critical. Thus, learning to successfully address the objections of children who do not initially engage with biofeedback would allow them to participate without reservation, introducing a promising alternative therapy.

An increasing amount of recent research has started to examine the use of biofeedback for children by adapting game-based technology to use competitive stress as a means of helping children practise relaxation and down-regulation under pressure (Fish, 2018; see also Mightier.com). Playing biofeedback games to strengthen self-regulation may seem counterintuitive, as performance anxiety and the stress of competition rise as children progress through the game. However, to win the challenge, a child must learn to calm their body faster than other players and thus practice using his/her biofeedback tools under pressure, just like in real-life situations (Fish, 2018; Kahn et al., 2013;).

Achievement, Coherence, SDQ Scores, and Behavioural Change

Overall, there was a mixed agreement between emWave-generated scores, SDQ scores, and observations of behavioural change. While HRV coherence appears to have improved for 2 of the 3 participants, SDQ scores, for the most part, did not demonstrate any improvement but rather indicated an increase in difficulties. Observations and reports from whānau and teachers indicated a mix of behavioural changes, along with the presence of notable stressors such as family homelessness and parental health concerns. Thus, it seems the participants were successful in learning and improving coherence-based skills, which coincided with some reports of improved emotional and behavioural regulation at school. However, parents perceived their child's difficulties to have worsened throughout the pilot programme. It is important to note that other studies which have investigated the efficacy of HeartMaths such as Bradley et al. (2010), have asked participants to take part in more frequent sessions. Therefore, more sessions biofeedback sessions may have provided participants with more opportunities to practice self-regulation skills.

There was wide variation in the amount of behavioural change reported by parents and school personnel and the participants themselves. Interestingly, the child with the best achievement and coherence scores exhibited the most violent aggression simultaneously; his biofeedback skills were improving most notably. Meanwhile, the participant whose scores did not indicate any meaningful pattern of progress was reported to have significantly reduced his aggressive behaviours. Thus, a link between improved achievement and coherence scores and reduction in challenging behaviours was not in any way established. Still, investigating this potential remains important, considering only a small number of case studies have reported on this association (Hughes et al., 1980; O'Neill & Findlay, 2014).

Confounding and extraneous variables

While the present study was intended to explore, rather than establish a correlation between, biofeedback performance and behavioural improvement, the presence of confounding and extraneous variables was carefully noted. Variables included the introduction of new medications, the occurrence of major life events, and procedural changes in the implementation of the study, both imposed and voluntary. Our goal was to discover and document these factors in order to have an informed understanding of what we might need to be prepared to control for in future, more rigorously designed studies.

Limitations

There are several limitations to the current study. First, as this was a small-scale pilot study, it is not appropriate to make any definite conclusions about the acceptability of this specific biofeedback tool, let alone draw any inferences about the effectiveness of biofeedback interventions. Still, investigating this potential remains important, considering only a small number of case studies have reported on this association (Hughes et al., 1980; O'Neill & Findlay, 2014).

Perhaps due to the exploratory nature of the motivation for this study, our qualitative data collection was characterised by a somewhat informal process and this could have impacted our ability to accurately discern the implications of the biofeedback intervention across home and school contexts. This may have been particularly impactful to our understanding the cultural acceptability of the biofeedback intervention for participant D and their whānau.

Finally, due to the complexities of Covid-19, it was difficult to deliver biofeedback systematically with our participants. This may have impacted our results and affected the validity of our findings.

Future Research

In light of these limitations, our next steps in researching the impact of biofeedback as an intervention with behaviourally challenged children would include heightened focus on introducing more control and structure to the research process. Data from this pilot would be used to inform decisions about the treatment timeline including the number and frequency of sessions. Plans for ensuring systematic intervention could be fortified with more details around treatment delivery in the face of ongoing disruptive conditions, such as continuing surges of Covid-19 and the accompanying restrictions.

In addition, the management of confounding and extraneous variables could be standardised by factoring their inclusion into the recruitment criteria or the research design. For example, participants with changes to medication during the trial could be excluded, and comparisons of medicated vs non-medicated groups could be made. Cultural differences could be explored

more systematically as well. Although research on HeartMath has been carried out internationally with different culturally diverse populations (e.g. Edwards, 2018, 2019; Hlongwane et al., 2018), it would be essential to explore the acceptability in the New Zealand context of biofeedback interventions among Māori and Pacifica communities.

Finally, as outlined in a recent systematic review by Thabrew et al. (2018), there appears to be a lack of consensus around biofeedback modalities due in part to the small number of studies that comprise the literature. It is possible that different biofeedback devices or games may yield different results. Future research should examine this idea and develop more rigorous and systematic processes to evaluate the acceptability and effectiveness of different biofeedback interventions for young children with behavioural disorders. One example would be comparing various biofeedback games, as this approach may prove even more engaging and motivating for young children (Eysenbach et al., 2017). There is already research showing commercially available biofeedback games can effectively increase stress resiliency and emotional regulation skills among young people with behavioural disorders (Fish, 2018; Kahn et al., 2013).

Conclusion

Findings from this exploratory study suggest that HRV biofeedback training may be a feasible and promising approach to support children in New Zealand to develop self-regulation skills. However, more robust research methods and assessments are required to fully explore this new mechanism's potential and cultural acceptance fully.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>.
- Amray, A., Motiwala, F., & Sadiq, N. (2019). Psychopharmacology of Pediatric Anxiety Disorders: A Narrative Review. *Cureus*, *11*(8), e5487. <https://doi.org/10.7759/cureus.5487>
- Banerjee, S., & Argáez, C. (2017). Neurofeedback and Biofeedback for Mood and Anxiety Disorders: A Review of Clinical Effectiveness and Guidelines. *Canadian Agency for Drugs and Technologies in Health*.
- Beidas, R. S., Benjamin, C. L., Puleo, C. M., Edmunds, J. M., & Kendall, P. C. (2010). Flexible Applications of the Coping Cat Program for Anxious Youth. *Cognitive and Behavioral Practice*, *17*(2), 142–153. <https://doi.org/10.1016/j.cbpra.2009.11.002>
- Bilgiç, A., Tufan, A. E., Yılmaz, S., Özcan, Ö., Özmen, S., Öztop, D., ... Savcı, U. (2017). Association of Reactive-Proactive Aggression and Anxiety Sensitivity with Internalising and Externalising Symptoms in Children with Attention-Deficit/Hyperactivity Disorder. *Child Psychiatry and Human Development*, *48*(2), 283–297. <https://doi.org/10.1007/s10578-016-0640-9>
- Bradley, R. T., McCraty, R., Atkinson, M., Tomasino, D., Daugherty, A., & Arguelles, L. (2010). Emotion self-regulation, psychophysiological coherence, and test anxiety: results from an experiment using electrophysiological measures. *Applied Psychophysiology and Biofeedback*, *35*(4), 261–283.
- Cohen, S., Tyrrell, D., & Smith, A. (1993). Negative Life Events, Perceived Stress, Negative Affect, and Susceptibility to the Common Cold. *Journal of Personality and Social Psychology*, *64*(1), 131–140. <https://doi.org/10.1037/0022-3514.64.1.131>
- Cooley, J. L., Frazer, A. L., Fite, P. J., Brown, S., & DiPierro, M. (2017). Anxiety symptoms as a moderator of the reciprocal links between forms of aggression and peer victimisation in middle childhood. *Aggressive Behavior*, *43*(5), 450–459. <https://doi.org/10.1002/ab.21703>
- Copeland, W., Angold, A., Costello, E., & Egger, H. (2013). Prevalence, Comorbidity, and Correlates of DSM-5 Proposed Disruptive Mood Dysregulation Disorder. *The American Journal of Psychiatry*, *170*(2), 173–179. <https://doi.org/10.1176/appi.ajp.2012.12010132>
- Culbert, T. P., Reaney, J. B., & Kohen, D. P. (1994). "Cyberphysiologic" strategies for children: the clinical hypnosis/biofeedback interface. *The International Journal of Clinical and Experimental Hypnosis*, *42*(2), 97–117. <https://doi.org/10.1080/00207149408409344>
- Demmer, D.H., Hooley, M., Sheen, J. et al. (2017). Sex Differences in the Prevalence of Oppositional Defiant Disorder During Middle Childhood: a Meta-Analysis. *Journal of Abnormal Child Psychology*, *45*, 313–325. <https://doi.org/10.1007/s10802-016-0170-8>

- Dillon, A., Kelly, M., Robertson, I., Robertson, D., & Dillon, A. (2016). Smartphone Applications Utilizing Biofeedback Can Aid Stress Reduction. *Frontiers in Psychology, 7*, 832–832. <https://doi.org/10.3389/fpsyg.2016.00832>.
- Edwards, S. D. (2018). Ubuntu HeartMath programme efficacy for social coherence and work spirit: Preliminary evidence. *Journal of Psychology in Africa, 28*(5), 420–425.
- Eysenbach, G., Penders, T., Eichenberg, C., Thabrew, H., Stasiak, K., & Merry, S. (2017). Protocol for Co-Design, Development, and Open Trial of a Prototype Game-Based eHealth Intervention to Treat Anxiety in Young People with Long-Term Physical Conditions. *JMIR Research Protocols, 6*(9), e171. <https://doi.org/10.2196/resprot.7250>
- Fish, M. (2018). Gaming for stress: Application of a commercially available biofeedback system for at-risk young adolescents. *American Journal of Recreational Therapy, 17*(1) <https://doi.org/10.5055/ajrt.2018.0153>.
- Goodman R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry, 38*, 581–586. <https://doi.org/10.1111/j.14697610.1997.tb01545.x>
- Greene, R., Biederman, J., Zerwas, S., Monuteaux, M., Goring, J., & Faraone, S. (2002). Psychiatric comorbidity, family dysfunction, and social impairment in referred youth with oppositional defiant disorder. (Abstract). *American Journal of Psychiatry, 159*(7), 1214–1224. <https://doi.org/10.1176/appi.ajp.159.7.1214>.
- HeartMath, Inc. (n.d.). *The Science of HeartMath*. <https://www.heartmath.com/science/>
- HeartMath, Inc. (2019). *emWave Pro Coherence Training Software*. Boulder Creek, CA.
- HeartMath, Inc. (2020). *Library* (v5.6 Remote). Boulder Creek, CA.
- HeartMath Institute. (2019). *HeartSmarts Adventure for Ages 4-6: Leaders Guide*. Boulder Creek, CA.
- Hlongwane, M.M, Govender, S., Makhubu S.S., Makhonza LO, Kent, D., Ochiogu S.N., Gumede, G. V., Nzima, D.R., & Edwards, S.D. (2018). African centered investigation into ways in which Ubuntu can promote social coherence. *Indilinga, African Journal for Indigenous Knowledge Systems, 17*(1), 53 – 66. <https://hdl.handle.net/10520/EJC-fe64b7e26>
- Hughes H., Henry D., & Hughes A. (1980). The effect of frontal EMG biofeedback training on the behavior of children with activity-level problems. *Biofeedback Self-Regulation, 5*, 207-219.
- Kahn, J., Ducharme, P., Rotenberg, A., & Gonzalez-Heydrich, J. (2013). "RAGE-Control": a game to build emotional strength. *GAMES FOR HEALTH: Research, Development, and Clinical Applications, 2*(1), 53-57.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*(6), 593–602.
- Kültür, E. (2017). Complicated Preschool Attention Deficit/Hyperactivity Disorder and Pharmacologic Treatment Approaches. *Klinik Psikofarmakoloji Bulteni, 27*, 254–255. <http://search.proquest.com/docview/1935197727/>.
- Linden, M., Habib, T., & Radojevic, V. (1996). A controlled study of the effects of EEG biofeedback on cognition and behavior of children with attention deficit disorder and learning disabilities: Erratum. *Biofeedback & Self-Regulation, 21*(3), 297. <https://doi.org/10.1007/BF02214740>.
- Menting, A., Orobio de Castro, B., & Matthys, W. (2013). Effectiveness of the Incredible Years parent training to modify disruptive and prosocial child behavior: A meta-analytic review. *Clinical Psychology Review, 33*(8), 901–913. <https://doi.org/10.1016/j.cpr.2013.07.006>.
- Michael, Brett C. (2018). Attrition in Behavioral Parent Training Programs in Clinical and Community Settings: A Meta-analytic Review. *UNF Graduate Theses and Dissertations, 780*. <https://digitalcommons.unf.edu/etd/780>
- Michelson, D., Davenport, C., Dretzke, J., Barlow, J., & Day, C. (2013). Do Evidence-Based Interventions Work When Tested in the "Real World?" A Systematic Review and Meta-analysis of Parent Management Training for the Treatment of Child Disruptive Behavior. *Clinical Child and Family Psychology Review, 16*(1), 18–34. <https://doi.org/10.1007/s10567-013-0128-0>
- Murray, D., Lawrence, J., & Laforett, D. (2018). The Incredible Years® Programs for ADHD in Young Children: A Critical Review of the Evidence. *Journal of Emotional and Behavioral Disorders, 26*(4), 195–208. <https://doi.org/10.1177/1063426617717740>.
- O'Neill, B., & Findlay, G. (2014). Single case methodology in neurobehavioral rehabilitation: Preliminary findings on biofeedback in the treatment of challenging behaviour. *Neuropsychological Rehabilitation, 24*(3-4), 365–381. doi:10.1080/09602011.2014.915856
- Sukhodolsky, D., Kassinove, H., & Gorman, B. (2004). Cognitive-behavioral therapy for anger in children and adolescents: a meta-analysis. *Aggression and Violent Behavior, 9*(3), 247–269. <https://doi.org/10.1016/j.avb.2003.08.005>.
- Thabrew, H., Ruppeldt, P., & Sollers, J. (2018). Systematic Review of Biofeedback Interventions for Addressing Anxiety and Depression in Children and Adolescents with Long-Term Physical Conditions. *Applied Psychophysiology and Biofeedback, 43*(3), 179–192. <https://doi.org/10.1007/s10484-018-9399-z>.
- van Starrenburg, M. L., Kuijpers, R. C., Kleinjan, M., Hutschemaekers, G. J., & Engels, R. C. (2017). Effectiveness of a Cognitive Behavioral Therapy-Based Indicated Prevention Program for Children with Elevated Anxiety Levels: a Randomized Controlled Trial. *Prevention Science: The Official Journal of the Society for Prevention Research, 18*(1), 31–39. <https://doi.org/10.1007/s11121-016-0725-5>

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Lived experience participation in mental health recovery teaching in university psychology courses

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Involvement of people with lived/living experience of mental distress in mental health workforce training has positive impacts on student learning and skill development, improves healthcare outcomes, and is mandated in international accreditation standards for clinical psychology training. However, there is limited research on the extent of lived experience involvement in psychology education more broadly. This research identified the extent of lived experience involvement in tertiary psychology education in New Zealand. All 77 teachers of 93 courses with mental health content at New Zealand universities were invited to complete an online survey about lived experience teaching in their course. Fifteen teachers provided data about 44 undergraduate, postgraduate, and applied training courses. Lived experience teaching was uncommon, especially in applied training courses. Lived experience involvement is underdeveloped in tertiary psychology education in New Zealand. It is time for psychology to recognise the importance of contact-based, lived experience-led, and recovery-focused teaching and learning in psychology education and training.

Keywords: *psychology; teaching; education; training; lived experience; expert by experience; recovery*

INTRODUCTION

Recovery-oriented practice is embedded in mental health policy around the world. An international review of mental health policy documents in 2006 found similarities in vision, values, and priorities for mental health, and focused on the concept of recovery, specifically defined to reflect the lived experience-informed conceptualisation of recovery (Compagni et al., 2006), which is:

when people can live well in the presence or absence of their mental illness, and the many losses that may come in its wake, such as isolation, poverty, unemployment and discrimination. Recovery does not always mean that people will return to full health or retrieve all their losses, but it does mean that people can live well in spite of them (Mental Health Commission, 1998, p.1).

Involvement of people with lived experience of mental distress, or experts by experience¹, is integral to practice that accords with this definition (Australian Health Ministers' Advisory Council, 2013; Mental

Health Commission, 2001). Increasingly, international policy reflects the expectation that people with lived experience actively participate in all aspects of mental health services, from design and planning to delivery and evaluation (Commonwealth of Australia, 2017; Health Services Executive, 2018; Mental Health Commission, 2012; Mental Health Commission of Canada, 2016; New Zealand Ministry of Health, 1995). Such expectations have been set out for mental health policy in Aotearoa. In 2018, the He Ara Oranga Mental Health Inquiry report recommended involving people accessing services in governance, policy, planning, and service development (Paterson et al., 2018). Kia Manawanui Aotearoa (Ministry of Health, 2021), the long-term plan for mental wellbeing, emphasises the need for lived experience involvement in mental health leadership, where people are "partners in their own care" (p.23).

Lived experience involvement and leadership is integral to systems and services being aligned with the lived experience conceptualisation of recovery. Collaboration and partnership with those with lived/living experience enables a shift in traditional power dynamics towards an approach where lived experience is valued (Felton & Stickley, 2004), which is critical to providing quality mental health care and improving healthcare outcomes (World Health Organisation, 2004). It is also critical to countering ongoing issues with health and mental health care provider stereotypes about and discrimination towards people who experience mental distress (Henderson et al., 2014). Valuing of lived experience is central to genuine

¹ There are many different terms used to describe people with lived or living experience of mental distress including service user, consumer, survivor, patient, client, person with lived experience, and expert by experience (Lyon & Mortimer-Jones, 2020). While there is considerable variability in preferred terms, 'people with lived experience' and 'expert by experience' are used in this paper, as these terms do not require service use and recognise the expertise that comes with lived experience.

mental health reform, enacting recovery-based care and empowerment of people with lived/living experience, which is a important shift against the background of institutionalisation and deinstitutionalisation (Gooding, 2016).

Recovery-oriented practice requires not only lived experience involvement in mental health systems and services at all levels, but also recovery-oriented education and training that includes lived experience involvement. As set out in the Australian National Practice Standards for the Mental Health Workforce (Commonwealth of Australia, 2002),

“Of key importance is the premise that any health professional entering the mental health workforce, or completing undergraduate or postgraduate mental health courses, should have the opportunity to be educated by mental health consumers, their family members and carers about their ‘lived’ experiences of mental illness, requirements for adequate services and support, and ability to work in partnership with mental health professionals.” (p.viii)

Lived experience involvement has potential positive impacts on student learning and skill development, including challenging stereotypes, learning from lived experience, and developing empathy and interpersonal skills, in a way that cannot be achieved by traditional teaching (Happell et al., 2020; Kang & Joung, 2020). It also has potential positive impacts for lived experience teachers in terms of empowerment and valuing of lived experience (Laging & Heidenreich, 2019). While some teachers have lived experience of mental distress, it is quite different to explicitly teaching from a lived experience perspective. Such explicit teaching is also important in terms of supporting people with lived experience to train as mental health professionals. It is increasingly recognised that the mental health workforce, including psychology, includes people with lived/living experience of mental distress, where people occupy dual spaces (although that is not frequently acknowledged: Gough, 2011; Smith & Ulus, 2020). Lived experience involvement in education would therefore also support initiatives to diversify the psychology workforce, along with the albeit slow developments in terms of sociodemographic diversity in psychology training in Aotearoa (Abbott & Durie, 1987; Nathan, 1999; Scarf et al., 2019; Skogstad et al., 2005).

Research on lived experience-led and recovery-focused education has increased rapidly in recent years, with studies conducted primarily in Australia and the UK in mental health nursing (Bingham & O’Brien, 2018; Foster et al., 2019; Happell et al., 2015, 2020; Stuhlmiller & Tolchard, 2019), occupational therapy (Arblaster et al., 2018, Logan et al., 2018; Scanlan et al., 2020), social work (Askheim et al., 2017; Driessens & Lyssens-Danneboom, 2022; Heule et al., 2017; Scanlan et al., 2020), and undergraduate medicine and psychiatry (Gordon et al., 2014; Newton-Howes et al., 2020). Research has typically examined expert by experience involvement in teaching but has recently extended to other aspects of education and training, such as placement and assessment. This is particularly important given the increasing requirements of professional bodies

to involve people with lived experience in the design, delivery, and evaluation of education programmes, including in psychology. While there is no such requirement in accreditation standards for psychology training in Aotearoa (New Zealand Psychologists Board, 2018), the British Psychological Society has mandated lived experience involvement in its accreditation standards for postgraduate clinical psychology training (British Psychological Society, 2019). The American Psychological Association is also in the process of determining training standards for postdoctoral programmes specialising in serious mental illness, which are anticipated to include peer support and lived experience involvement (American Psychological Association [APA] & Jansen, 2014).

Given these mandates, it is important to know whether current education and training in psychology involves people with lived/living experience of mental distress. However, there is limited literature on this topic. Systematic reviews of expert by experience involvement in the tertiary education of mental health professionals across Europe, the UK, North America, Asia, and Australia have found that involvement was limited and variable across professions and institutions (Classen et al., 2021; Happell et al., 2013), although there are increasing developments to integrate lived experience participation in mental health nursing training to include curriculum development, teaching, assessment, and selection (Happell et al., 2015). In psychology, lived experience involvement in or leadership of teaching is less common (Townend et al., 2008). A study of undergraduate psychology programmes in the UK found that only two of the 66 programmes included people with lived experience as guest speakers (Cromby et al., 2008). Most of the research on lived experience teaching is in clinical psychology specifically, and describes the approaches used, provides qualitative analysis of different aspects of expert by experience involvement (e.g., teaching, assessment, selection), and/or reports on trainee, lived experience, or staff feedback (e.g., Clarke & Holtum, 2013; Holtum et al., 2011; Lea et al., 2019; Schreur et al., 2015; Vandrevalla et al., 2007). Some studies have evaluated attitude change in students as a result of lived experience-led teaching (e.g., Taylor & Gordon, 2022), although none have examined whether such teaching translates to knowledge and behaviour change.

Apart from the UK studies by Cromby et al. (2008) and Townend et al. (2008), there is no research on the involvement of people with lived experience in undergraduate and postgraduate psychology education, despite such involvement being increasingly mandated in public mental health policy and training standards. The present study aimed to identify the extent of lived experience involvement in undergraduate and postgraduate psychology tertiary education in New Zealand.

METHOD

Participants

There were 77 coordinators of 93 relevant courses identified through information about psychology courses on each university’s website. These 77 staff were

contacted through their university email address and asked to confirm the primary teacher/s of their course. Where the teaching and responsibility were shared equally among multiple staff, all teachers for that course were invited to participate. Courses at all levels and modes of study were included, specifically undergraduate, postgraduate, and applied training courses. Directors of applied training programmes were not included unless they were invited in their capacity as a teacher of a relevant course. Of the 77 teachers invited, 15 provided data about 44 of the 93 courses (47% of courses).

Materials

The online survey was developed for this study. Teachers identified whether they taught undergraduate (1st to 3rd year), postgraduate (Honours, general Master's, or general postgraduate diploma), and/or applied training courses (postgraduate diploma, Master's, doctorate, placement/internship, or advanced training). Teachers selected as many teaching levels that applied to them and stated the number of courses taught at each level. This determined the number of times the survey questions were repeated for each course the staff member taught.

Questions about lived experience participation and personal recovery teaching in mental health were adapted from Kent and Read's (1998) survey and Happell et al.'s (2002) Consumer Participation Questionnaire. Teachers reported the percentage of mental health content in the course and whether recovery was included in the course (*Yes, No, or I don't know*). If the course included recovery and mental health content, the participant completed the rest of the survey. Teachers reported whether there was lived experience involvement in teaching the course, either in the past or currently. Lived experience involvement was defined as teaching provided by a person with lived experience of mental distress, who may or may not have used mental health services. Survey respondents could have included themselves in their responses if they were teachers with lived experience, although this may or may not have equated to explicit teaching from lived experience and this distinction was not ascertained. If there was no current involvement, teachers indicated the reason from a list (*No scope in the curriculum, Funding issues, Not considered valuable, Hard to find qualified or experienced people, Other – please specify*).

If there was current involvement, teachers reported the number of experts by experience involved and, for up to three experts by experience, what aspects of the course they were involved in (*Curriculum development, Face to face teaching, Online teaching, Evaluation – marking and assessment, Other – please specify*); for those reporting on applied training courses, additional options were *Collaboration on research and Selection*), the total hours the expert by experience was involved in those activities, the nature of employment regarding those activities (*Unpaid guest lecture, Paid guest lecture, Sessional/casual, Part-time contract, Full-time contract, Fixed term contract, Staff member*), the content of expert by experience teaching (*Talk about their experiences only, Talk about their experiences in the context of*

broader aspects of the curriculum, Other – please specify), to list the topics taught by experts by experience, and who the course content was developed by (*Lived experience teacher, Academic teacher*). The final three questions were about lived experience teaching in psychology courses in general. Teachers reported the extent to which increased lived experience involvement would change the course (*Improve a lot, Improve a little, No change, Worsen a little, Worsen a lot*), and to note their views about the value and pitfalls of lived experience participation in psychology course teaching.

Design and procedure

A cross-sectional online Qualtrics survey was used to determine the extent of lived experience involvement in undergraduate, postgraduate, and applied training psychology courses with mental health content at all eight New Zealand universities.

Primary teaching staff were contacted by email to provide information about the study and invite them to take part by clicking a link to the survey in the email message (which implied consent). Teachers could opt to receive a summary of findings, and in that instance provided their email address which was kept separate from their data. Teachers provided data about their course, and the number of courses was the primary unit of study. Data was anonymous to protect participant confidentiality. A total of 23 teachers started the survey. One teacher did not consent after reading the information sheet. Six others did not provide any information pertaining to the course/s they taught. One teacher identified that their course had no mental health content. Data from these eight teachers was excluded, leaving data on relevant courses from 15 teachers.

The study was low risk according to the university research ethics process. The study was included in an audit of the university's research ethics and was confirmed to meet the criteria for low risk research which does not require ethics committee review.

Data analysis

SPSS Version 26 was used to descriptively analyse the data for the courses that were reported on, which were grouped into undergraduate, postgraduate, and applied training courses. The main ideas from the small number of comments to the open-ended questions were presented and were not formally analysed.

RESULTS

Of the 77 teachers invited, 15 provided data about 44 of the 93 courses (47% of courses), of which 17 (39%) were undergraduate courses, 16 (36%) were postgraduate courses, and 11 (25%) were applied training courses. Two teachers taught undergraduate courses only, six taught a mix of undergraduate and postgraduate courses, three taught a mix of postgraduate and applied training courses, and the remaining four taught a mix of all courses. One postgraduate course had low mental health content (5%) but included lived experience participation so was included in the study.

Table 1. Percentage (*n*) of aspects of consumer teaching, based on the number of consumer teachers

	Undergraduate course teachers (<i>n</i> = 10)	Postgraduate course teachers (<i>n</i> = 6)	Applied training course teachers (<i>n</i> = 6)
Teaching activity			
Face-to-face teaching	90 (9)	83 (5)	33 (2)
Curriculum development	50 (5)	83 (5)	0 (0)
Marking and assessment	50 (5)	33 (2)	50 (3)
Online teaching	40 (4)	0 (0)	0 (0)
Research collaboration	N/A	N/A	33 (2)
Selection	N/A	N/A	17 (1)
Other	33 (3)	17 (1)	0 (0)
Teaching content			
Talk about lived experience only	40 (4)	50 (3)	67 (4)
Talk about lived experience in context of broader aspects of curriculum	80 (8)	67 (4)	67 (4)
Teaching content developed by			
Academic teacher	50 (5)	67 (4)	50 (3)
Consumer teacher	40 (4)	50 (3)	67 (4)

Note: There were 10 consumer teachers in 8 undergraduate courses, 6 consumer teachers in 6 postgraduate courses, and 6 consumer teachers in 3 applied training courses.

Personal recovery was taught in 13 of the 17 undergraduate courses (77%), 12 of the 16 postgraduate courses (75%), and nine of the 11 applied training courses (82%). The highest proportion of expert by experience involvement in both previous and current teaching occurred in undergraduate courses, where seven (41%) of the 17 courses had previous expert by experience teaching and eight (47%) had current such teaching. Six (38%) of the 16 postgraduate courses had previous or current lived experience teaching. Only two (27%) of the 11 applied training courses had current lived experience teaching, and 2 (18%) had previous such teaching. Of the eight undergraduate courses that included current lived experience teaching, six had one lived experience teacher and the remaining two had two such teachers (a total of ten lived experience teachers). Each of the six postgraduate courses had one expert by experience teacher, and the three applied training courses with lived experience teaching had two such teachers (six teachers). Most (60%) of the 10 lived experience teachers in undergraduate courses were employed on a full-time contract, with one each employed on a casual basis, fixed-term contract, or paid as a guest lecturer. Two of the six experts by experience involved in postgraduate courses were part-time, two were full-time, one was fixed-term, two were paid guest lecturers, and one was unpaid as a guest lecturer. Half of the six experts by experience in applied training courses were employed as paid guest lecturers, and the other 50% were employed in a full-time capacity.

Having no scope in the curriculum was the reason given for all eight remaining applied training courses not including lived experience teaching. The same reason was given for six postgraduate courses and two undergraduate courses. Funding issues were cited for four undergraduate and one postgraduate course, and for one other postgraduate course the reason was difficulty finding lived experience teachers. Other reasons for not including lived experience teaching were given for three undergraduate and two postgraduate courses, and were

that lived experience teaching had not been considered, large workloads prevented meaningful inclusion of experts by experience, the lived experience teacher was not currently available, and lived experience teachers were not needed because students with lived experience were involved in course development.

Lived experience teaching activities across teaching level was mixed (see Table 1). Face-to-face teaching occurred in most (90%) of the undergraduate courses, with half of the lived experience teachers or fewer engaged in online teaching, curriculum development, and assessment. Face-to-face teaching was also prominent for lived experience teachers in postgraduate courses along with curriculum development (both 83%), with less involvement in assessment. Lived experience teachers in the small number of applied training courses were involved mostly in evaluation of students, face-to-face teaching, and research collaboration, with only one involved in selection. The number of hours of lived experience teacher time on all teaching activities ranged across the levels, although there was missing data on this variable. Lived experience teachers were involved for 1-20 hours each in six undergraduate courses, and two teachers spent 100-150 hours on all activities. Lived experience teachers in two postgraduate courses spent 4-10 hours each, while another two spent 100-150 hours on all activities. Experts by experience involved in the three applied training courses each spent 5-20 hours on all activities.

Teaching content was similar across teaching level (see Table 1). Expert by experience teaching focused on lived experience, especially as it related to broader aspects of the curriculum, and was developed by academic and lived experience teachers. The descriptions of topics taught by lived experience teachers were similar regardless of teaching level and were variously described as lived experiences, recovery and recovery paradigms, wellbeing, mental health and mental illness, issues with diagnosis, alternate approaches to mental distress, culture, and ways to support recovery.

Teachers reported the extent to which increased lived experience involvement would change the course. Six said the course would improve a lot, four said it would improve a little, and four believed no change would occur (there was missing data for one teacher). There were two key points in teachers' comments about the value of expert by experience involvement in psychology courses. One point was about the value of lived experience, in that expert by experience teachers "provide lived experience of many of the key issues taught in the course and an 'insider' view of how mental illness is experienced and understood", and "consumers who are openly teaching from the perspective of their lived experience provide an understanding of mental distress that is not possible when delivered by teachers without lived experience." The second point was about reducing stigma, as lived experience teachers "can have a much larger impact on student knowledge and attitudes about mental distress" and provide an "awareness of stigma...helps critical thinking on mental health dominant discourses". Some of the potential pitfalls of expert by experience participation in psychology courses that were described were to do with attitudes of staff ("staff attitudes"), students ("some students may not have the maturity or insight"), and the university ("lack of recognition of the value of consumer participation by university management"). Other comments focused on the role of the lived experience teacher ("stray from set course content and time constraints", "some consumers may not be great representatives, just vocal ones") or their welfare (could "be triggering for them", "exploiting the experiences of consumers", "risk of stereotyping consumers by emphasising their differences"), or the welfare of students (could be "triggering for the students").

DISCUSSION

The present study aimed to identify the extent of lived experience involvement in undergraduate and postgraduate psychology tertiary education in New Zealand. Of the 44 courses reported on by 15 teaching staff, 34 (77%) included teaching about personal recovery but only half of those ($n = 17$; 39% of all courses) involved lived experience teachers. Expert by experience teaching in psychology was proportionately higher in undergraduate courses (47%) than postgraduate courses (38%), and much higher than in applied training courses where only three of the 11 courses included lived experience teaching (27%). Although there were relatively small numbers of courses across these levels of study, especially at the level of applied training, the proportion of lived experience involvement in teaching was generally low, particularly in applied training courses which typically have the most mental health content (e.g., clinical psychology). Previous studies and reviews have identified a lack of lived experience involvement in teaching (Cromby et al., 2006) as an "underdeveloped area within contemporary psychological educational practice" (Townend et al., 2008, p.65), and the present study suggests that this remains the case more than a decade later.

Where lived experience teachers were involved in psychology courses, they mostly engaged in direct

teaching about their lived experience, and to a lesser extent curriculum development, although not in applied training courses. As well as direct teaching, some lived experience teachers in applied training were involved in evaluation and only one in selection. There were low levels of involvement in broader aspects of teaching activity. Teaching content was developed by academic and lived experience teachers. Many other studies describe expert by experience involvement in providing guest teaching on lived experience, although research in applied training such as clinical psychology reports on variable roles for lived experience teachers, from informal mentoring, role-play, and small presentations (Holtum et al., 2011) to assessment of trainees (Lea et al., 2019) and selection (Vandrevala et al., 2007), much of which does not involve direct teaching and content development (Vandrevala et al., 2007).

The limited involvement of experts by experience in psychology teaching, particularly at the level of applied training, is problematic given the benefits and value of lived experience to training, practice, and improved mental healthcare outcomes, all of which inform current policy expectations for lived experience involvement at all levels of mental health service provision (Commonwealth of Australia, 2017; Health Services Executive, 2018; Mental Health Commission, 2012; Mental Health Commission of Canada, 2016; New Zealand Ministry of Health, 1995). In terms of policy specifically related to the practice of psychology in New Zealand, the core competencies for psychologists set out by the New Zealand Psychologists Board state that psychologists should understand and integrate the concepts of stigma, discrimination, and social exclusion into assessment and treatment processes (New Zealand Psychologists Board, 2018). However, in the Board's accreditation standards, there is no requirement for lived experience involvement in training programmes leading to registration as a psychologist (New Zealand Psychologists Board, 2016), including Māori as lived experience teachers. This is in stark contrast with the mandate of professional bodies in other countries, such as the British Psychological Society, which requires postgraduate clinical psychology programmes to evidence lived experience involvement (British Psychological Society, 2019), or the developments occurring in the American Psychological Association to require peer support and lived experience involvement in training programmes specialising in serious mental illness (APA & Jansen, 2014). More than 10 years ago, the British Psychological Society's Division of Clinical Psychology (2008) produced practice guidelines for lived experience and carer involvement in clinical psychology training, setting out a criterion that "Programmes must work collaboratively with service users, carers and community representatives to identify and implement strategies for the active participation of these stakeholders within the programme" (p. 8). Practice guides have also been prepared for mental health education and training (e.g., Tew et al., 2004). More recently, there has been recognition of lived experience within the clinical psychology profession, in terms of supporting and valuing lived experience in clinical psychologists and trainees (Division of Clinical

Psychology, 2020a, 2020b). The guidance for training involves stakeholders contributing to “creating training and clinical environments that are compassionate and that seek to destigmatise lived experience” (Division of Clinical Psychology, 2020a, p.8), such as courses including seminars and workshops from lived experience teachers.

Clearly, international research as well as policy requirements are setting the standard for lived experience involvement in psychology teaching and training. Tertiary institutions and training programmes, including course staff and external supervisors, have a responsibility to respond accordingly, in terms of creating a course and/or training culture that recognises the importance and value of lived experience teachers and teaching (Division of Clinical Psychology, 2020a). Accreditation standards in New Zealand also need to reflect the evidence base about the benefits of recovery-oriented and lived experience-led education that informs national mental health policy about lived experience involvement in all aspects of mental health services, and explicitly address what that means for education and training in psychology. While accreditation standards may not always lead to tertiary providers delivering on these mandates (e.g., mātauranga Māori; Levy, 2018), they are an important part of the response, and are consistent with international developments (APA & Jansen, 2014; British Psychological Society, 2019). They may also provide an important support for initiatives by tertiary providers to enact lived experience-led education in psychology teaching and training, given that a main reason for courses having no expert by experience involvement was that there was no support from universities to fund such teaching and that university management did not recognise the value of expert by experience teaching.

However, challenges to implementing lived experience teaching may not only exist at the level of the institution. In the present study, other main reasons for no expert by experience involvement in courses were that it had not been considered by teaching staff and there was no scope in the existing curriculum for such teaching. Participants also noted potential issues with the attitudes of staff and students. Research in the UK indicates that psychology students value lived experience participation in their education and training (Khoo et al., 2004; Norwood et al., 2019; Vandrevalla et al., 2007). As in the present study, academic staff recognise the benefits of lived experience in terms of student knowledge, practice, and critical thinking about current clinical systems (Campbell & Wilson, 2017; Holttum et al., 2011; Norwood et al., 2019). However, negative views of involvement have been demonstrated by staff and students, including assumptions about representativeness, bias, and emotional distress in lived experience teachers, and these attitudes are not shared by experts by experience (Cooper & Spencer-Dawe, 2006; Garwood & Hassett, 2019; Happell et al., 2019b). There were some such views expressed in the present study, such as views about lived experience teachers being vocal but “not...great representatives” who veer away from set course content. If some teaching staff consider that lived experience participation in psychology

teaching would not add value to courses, or hold attitudes that invalidate lived experience, as was the case in the present study, there is additional work to do in addressing this as a barrier. Future research is needed to better understand the range of views psychology teaching staff have about lived experience involvement, especially where involvement is not valued. We know that health professionals hold stigmatising attitudes and engage in discriminatory behaviour towards those who experience mental distress (Henderson et al., 2014), and that the most effective anti-stigma programmes are those with multiple forms of social contact and an emphasis on recovery (Corrigan et al., 2012; Knaak et al., 2014). Student attitudes towards experts by experience are less negative and more flexible following contact with people with lived experience in an educational environment (Happell et al., 2020; Newton-Howes et al., 2018). Such approaches may also be needed for some psychology teaching staff. Research is also needed pertaining to Māori lived experience teachers in psychology. Increasingly, research has demonstrated the importance of allyship in supporting the development, implementation, and sustainability of expert by experience roles in mental health academia (Happell et al., 2022).

There were limitations of the present study, particularly that only 15 of the 77 teaching staff approached provided data on their courses. However, the number of potential teachers may have been overinclusive, as data was provided for 44 of the 93 relevant psychology courses available at the time (47%), and courses were the unit of study rather than the teachers providing data on the courses. However, factors pertaining to the teachers may have impacted on the study. For example, the survey invitation was sent once in October and again in November, and study recruitment of university teachers at this time of year may have led to lower response rates. Teachers who knew their course had lived experience involvement may have been more motivated to take part while teachers who were aware of no such involvement could be more likely to choose not to take part in the study. Therefore, the study might overestimate the extent of lived experience involvement. While the present study is therefore not a representative survey of tertiary psychology courses in New Zealand with mental health content, it is apparent that further research is needed to clarify whether the findings apply to the broader suite of courses, particularly in terms of the extent of lived experience involvement in teaching. A more systematic approach to data collection would improve the response rate and accuracy of data. One such method could be the use of Official Information Act requests, although that could present its own challenges, especially if teachers were reluctant to disclose their own lived experience or lived experience information was not known or collected (e.g., King et al., 2021). International studies are also needed to better understand the current state of psychology teaching in terms of expert by experience participation. This could involve not just course teachers, but lived experience teachers, as well as students, to triangulate data on mental health teaching in psychology

and the extent of lived experience involvement in this teaching.

Another limitation was that the survey did not take into account that some academic teachers may have had lived experience. This should be identified more clearly in future studies, although being an academic with lived experience and taking the position of explicitly teaching from a lived experience perspective are not one and the same. Teaching openly from a position of lived experience and teaching with lived experience but not acknowledging that in the teaching are quite different approaches, and the critical component for contact-based and recovery-focused education is explicit identification of a lived experience position. Future research is needed to specifically seek the perspectives of lived experience teachers about their teaching in psychology courses.

In conclusion, personal recovery teaching in these 47% of relevant psychology courses in New Zealand was

common, but the rates of expert by experience involvement in such teaching were low, especially at the level of applied training. These findings are at odds with international research on the improved attitudes, knowledge, skills, and mental healthcare outcomes from lived experience teaching. Stigmatising attitudes of mental health professionals and educators exist that maintain limited lived experience participation in psychology education (Happell et al., 2019a; Kent & Read, 1998; Taylor & Gordon, 2022). It is critical that psychology enacts recovery-oriented and lived experience-led education as is evidence-based and mandated in policy around the world, to recognise the importance of contact-based and recovery-focused learning in psychology education and training.

References

- Abbott, M. W., & Durie, M. H. (1987). A whiter shade of pale: Taha Māori and professional psychology training. *New Zealand Journal of Psychology, 16*, 58-71.
- American Psychological Association & Jansen, M. A. (2014). *Reframing psychology for the emerging health care environment: Recovery curriculum for people with serious mental illnesses and behavioral health disorders*. Washington, DC: American Psychological Association.
- Arblaster, K., Mackenzie, L., Matthews, L., Willis, K., Gill, K., Hanlon, P., & Laidler, R. (2018). Learning from consumers: An eDelphi study of Australian mental health consumers' priorities for recovery-oriented curricula. *Australian Occupational Therapy Journal, 65*(6), 586-597. <https://doi.org/10.1111/1440-1630.12518>
- Askheim, O. P., Beresford, P., & Heule, C. (2017). Mend the gap – Strategies for user involvement in social work education. *Social Work Education, 36*(2), 128-140. <https://doi.org/10.1080/02615479.2016.1248930>
- Australian Health Ministers' Advisory Council (2013). *A national framework for recovery-oriented mental health services: Guide for practitioners and providers*. Canberra, ACT: Commonwealth of Australia.
- Bingham, H., & O'Brien, A. J. (2018). Educational intervention to decrease stigmatizing attitudes of undergraduate nurses towards people with mental illness. *International Journal of Mental Health Nursing, 27*(1), 311-319. <https://doi.org/10.1111/inm.12322>
- British Psychological Society. (2019). *Standards for the accreditation of doctoral programmes in clinical psychology*. www.bps.org.uk/accreditationdownloads
- Campbell, M. & Wilson, C. (2017). Service users' experiences of participation in clinical psychology training. *The Journal of Mental Health Training, Education and Practice, 12*(6), 337-349. <https://doi.org/10.1108/JMHTEP-03-2017-0018>
- Clarke, S. P., & Holtum, S. (2013). Staff perspectives of service user involvement on two clinical psychology training courses. *Psychology Learning & Teaching, 12*(1), 32-43. <https://doi.org/10.2304/plat.2013.12.1.32>
- Classen, B., Tudor, K., Johnson, F., & McKenna, B. (2021). Embedding lived experience expertise across the mental health tertiary education sector: An integrative review in the context of Aotearoa New Zealand. *Journal of Psychiatric and Mental Health Nursing, 28*(6), 1140-1152. <https://doi.org/10.1111/jpm.12756>
- Commonwealth of Australia (2002). *National Practice Standards for the Mental Health Workforce*. Australian Government.
- Commonwealth of Australia (2017). *The fifth national mental health and suicide prevention plan*. Canberra: Australian Government.
- Compagni, A., Adams, N. & Daniels, A. (2006). *International pathways to mental health system transformation: Strategies and challenges*. California Institute for Mental Health.
- Cooper, H., Spencer-Dawe, E. (2006). Involving service users in interprofessional education: Narrowing the gap between theory and practice. *Journal of Interprofessional Care, 20*(6), 603-617. <https://doi.org/10.1080/13561820601029767>
- Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsçh, N. (2012). Challenging the public stigma of mental illness: A meta-analysis of outcome studies. *Psychiatric Services, 63*(10), 963-973. <https://doi.org/10.1176/appi.ps.201100529>
- Cromby, J., Harper, D., & Reavey, P. (2008). Mental health teaching to UK psychology undergraduates: Report of a survey. *Journal of Community and Applied Psychology, 18*, 83-90. <http://doi.org/10.1002/casp.913>
- Division of Clinical Psychology (2008). *Good practice guidelines: Service user and carer involvement within clinical psychology training*. British Psychological Society.
- Division of Clinical Psychology (2020a). *Supporting and valuing lived experience of mental health difficulties in clinical psychology training*. British Psychological Society.
- Division of Clinical Psychology (2020b). *Statement on clinical psychologists with lived experience of mental health difficulties*. British Psychological Society.
- Driessens, K., & Lyssens-Danneboom, V. (2022). *Involving service users in social work education, research and policy: A comparative European analysis*. Policy Press.
- Felton, A., & Stickley, T. (2004). Pedagogy, power and service user involvement. *Journal of Psychiatric and Mental Health Nursing, 11*(1), 89-98. <https://doi.org/10.1111/j.1365-2850.2004.00693.x>

- Foster, K., Withers, E., Blanco, T., Lupson, C., Steele, M., Giandinoto, J. A., & Furness, T. (2019). Undergraduate nursing students' stigma and recovery attitudes during mental health clinical placement: A pre/post-test survey study. *International Journal of Mental Health Nursing, 28*(5), 1068-1080. <https://doi.org/10.1111/inm.12634>
- Garwood, P. T., & Hassett, A. (2019). Service user involvement in cognitive behavioural therapy training: An interpretive phenomenological analysis. *The Journal of Mental Health Training, Education and Practice, 14*, 186-198. <https://doi.org/10.1108/JMHTEP-02-2018-0014>
- Gooding, P. (2016). From deinstitutionalisation to consumer empowerment: Mental health policy, neoliberal restructuring and the closure of the 'Big bins' in Victoria. *Health Sociology Review, 25*(1), 33-47. <https://doi.org/10.1080/14461242.2015.1134261>
- Gordon, S., Ellis, P., Gallagher, P., & Purdie, G. (2014). Service users teaching the recovery paradigm to final year medical students: A New Zealand approach. *Health Issues, 113*, 15-17.
- Gough, M. (2011). Looking after your pearls: The dilemmas of mental health self-disclosure in higher education teaching. *The Journal of Mental Health Training, Education and Practice, 6*(4), 203-210. <https://doi.org/10.1108/17556221111194545>
- Happell, B., Bocking, J., Scholz, B., & Platania-Phung, C. (2020). The tyranny of difference: Exploring attitudes to the role of the consumer academic in teaching students of mental health nursing. *Journal of Mental Health, 29*(3), 263-269. <https://doi.org/10.1080/09638237.2019.1581344>
- Happell, B., Byrne, L., McAllister, M., Lampshire, D., Roper, C., Gaskin, C. J., Martin, G., Wynaden, D., McKenna, B., Lakeman, R., Platania-Phung, C., & Hamer, H. (2013). Consumer involvement in the tertiary-level education of mental health professionals: A systematic review. *International Journal of Mental Health Nursing, 23*, 3-16. <https://doi.org/10.1111/inm.12021>
- Happell, B., Donovan, A. O., Warner, T., Sharrock, J., & Gordon, S. (2022). Creating or taking opportunity: Strategies for implementing expert by experience positions in mental health academia. *Journal of Psychiatric and Mental Health Nursing, 29*(4), 592-602. <https://doi.org/10.1111/jpm.12839>
- Happell, B., Pinikahana, J., & Roper, C. (2002). Attitudes of postgraduate nursing students towards consumer participation in mental health services and the role of the consumer academic. *International Journal of Mental Health Nursing, 11*, 240-250. <https://doi.org/10.1046/j.1440-0979.2002.00255.x>
- Happell, B., Platania-Phung, C., Byrne, L., Wynaden, D., Martin, G., & Harris, S. (2015). Consumer participation in nurse education: A national survey of Australian universities. *International Journal of Mental Health Nursing, 24*, 95-103. <https://doi.org/10.1080/09638237.2019.1581344>
- Happell, B., Platania-Phung, C., Scholz, B., & Bocking, J. (2019a). Promoting the value of mental health nursing: The contribution of a consumer academic. *Issues in Mental Health Nursing, 40*(2), 140-147. <https://doi.org/10.1080/01612840.2018.1490834>
- Happell, B., Waks, S., Horgan, A., Greaney, S., Bocking, J., Manning, F., Goodwin, J., Scholz, B., van der Vaart, K. J., Allon, J., Hals, E., Granerud, A., Doody, R., Wai-Chi Chan, S., Platania-Phung, C., Griffin, M., Russell, S., MacGabhann, L., Pulli, J., Vatula, A., ... & Biering, P. (2019b). Expert by experience involvement in mental health nursing education: Nursing students' perspectives on potential improvements. *Issues in Mental Health Nursing, 40*(12), 1026-1033. <https://doi.org/10.1080/01612840.2019.1631417>
- Happell, B., Waks, S., Horgan, A., Greaney, S., Manning, F., Goodwin, J., Bocking, J., Scholz, B., Hals, E., Granerud, A., Doody, R., Platania-Phung, C., Griffin, M., Russell, S., MacGabhann, L., Pulli, J., Vatula, A., Browne, G., van der Vaart, K. J., Allon, J., ... & Biering, P. (2020). "It is much more real when it comes from them": The role of experts by experience in the integration of mental health nursing theory and practice. *Perspectives in Psychiatric Care, 56*(4), 811-819. <https://doi.org/10.1111/ppc.12496>
- Health Services Executive (2018). *A national framework for recovery in mental health*. Dublin: Health Services Executive.
- Henderson, C., Noblett, J., Parke, H., Clement, S., Caffrey, A., Gale-Grant, O., ... & Thornicroft, G. (2014). Mental health-related stigma in health care and mental health-care settings. *The Lancet Psychiatry, 1*(6), 467-482. [https://doi.org/10.1016/s2215-0366\(14\)00023-6](https://doi.org/10.1016/s2215-0366(14)00023-6)
- Heule, C., Knutagård, M., & Kristiansen, A. (2017). Mending the gaps in social work education and research: Two examples from a Swedish context. *European Journal of Social Work, 20*(3), 396-408. <https://doi.org/10.1080/13691457.2017.1283589>
- Holtum, S., Lea, L., Morris, D., Riley, L., & Byrne, D. (2011). Now I have a voice: Service user and carer involvement in clinical psychology training. *Mental Health and Social Inclusion, 15*(4), 190-197. <https://doi.org/10.1108/20428301111186831>
- Kang, K. I., & Joung, J. (2020). Outcomes of consumer involvement in mental health nursing education: An integrative review. *International Journal of Environmental Research and Public Health, 17*(18), 6756. <https://doi.org/10.3390/ijerph17186756>
- Kent, H., & Read, J. (1998). Measuring consumer participation in mental health services: Are attitudes related to professional orientation? *International Journal of Social Psychiatry, 44*(4), 295-310.
- Khoo, R., McVicar, A., & Brandon, D. (2004). Service user involvement in postgraduate mental health education. Does it benefit practice? *Journal of Mental Health, 13*(5), 481-492. <http://doi.org/10.1080/09638230400006742>
- King, P., Baker, G., Jones, B., & Ingham, T. (2021). The Official Information Act: Māori with lived experience of disability, and New Zealand disability data – A case study. *Policy Quarterly, 17*(1), 72-78. <https://doi.org/10.26686/pq.v17i1.6733>
- Knaak, S., Modgill, G., & Patten, S. B. (2014). Key ingredients of anti-stigma programs for health care providers: A data synthesis of evaluative studies. *Canadian Journal of Psychiatry, 59*(10 Suppl 1), S19-S26. <https://doi.org/10.1177/070674371405901S06>
- Laging, M., & Heidenreich, T. (2019). Towards a conceptual framework of service user involvement in social work education: Empowerment and educational perspectives. *Journal of Social Work Education, 55*(1), 11-22. <https://doi.org/10.1080/10437797.2018.1498417>
- Lea, L., Holtum, S., Butters, V., Byrne, D., Cable, H., Morris, D., Richardson, J., Riley, L., & Warren, H. (2019). Now they're listening: Involvement in clinical psychology training. *Mental Health & Social*

- Inclusion*, 23(1), 23-29. <https://doi.org/10.1108/MHSI-07-2018-0027>
- Levy, M. (2018). *Indigenous psychology in Aotearoa: Reaching our highest peaks*. NSCBI, NZPsS, and NZCCP. https://www.psychology.org.nz/application/files/6916/3711/5330/Reaching_Our_Highest_Peaks_2018.pdf
- Logan, A., Yule, E., Taylor, M., & Imms, C. (2018). Mental health consumer participation in undergraduate occupational therapy student assessment: No negative impact. *Australian Occupational Therapy Journal*, 65(6), 494-502. <https://doi.org/10.1111/1440-1630.12484>
- Lyon, A. S., & Mortimer-Jones, S. M. (2020). Terminology preferences in mental health. *Issues in Mental Health Nursing*, 41(6), 515-524. <https://doi.org/10.1080/01612840.2020.1719248>
- Mental Health Commission (1998). *Blueprint for mental health services in New Zealand: How things need to be*. Wellington, New Zealand: Mental Health Commission.
- Mental Health Commission (2001). *Recovery competencies for New Zealand mental health workers*. Wellington, New Zealand: Mental Health Commission.
- Mental Health Commission (2012). *Rising to the challenge: The mental health and addiction service development plan 2012-2017*. Wellington, New Zealand: Ministry of Health.
- Mental Health Commission of Canada (2016). *Advancing the mental health strategy for Canada: A framework for action (2017-2022)*. Ottawa, ON: Mental Health Commission of Canada.
- Ministry of Health (2021). *Kia manawanui Aotearoa: Long-term pathway to mental wellbeing*. https://www.health.govt.nz/system/files/documents/publications/web3-kia-manawanui-aotearoa-v9_0.pdf
- Nathan, S. G. (1999). *Tikanga Maori in Aotearoa/New Zealand clinical psychology training programmes: A follow-up of Abbott and Durie's (1987) study*. [Unpublished doctoral dissertation]. Victoria University of Wellington.
- Newton-Howes, G., Beverly, G., Ellis, P. M., & Gordon, S. (2018). What do final year medical students understand by the concept of recovery? A descriptive qualitative study. *Academic Psychiatry*, 42(3), 382-385. <https://doi.org/10.1007/s40596-017-0823-0>
- Newton-Howes, G., Gordon, S., & Fedchuk, D. (2020). Making the World of Difference: A service user-led education programme reshaping the learning environment in psychiatry. *Australasian Psychiatry*, 28(2), 226-228. <https://doi.org/10.1177/1039856219878647>
- New Zealand Ministry of Health (1995). *A guide to effective consumer participation in mental health services*. Wellington, New Zealand: Ministry of Health.
- New Zealand Psychologists Board. (2016). *Standards and procedures for the accreditation of programmes and schemes leading to registration as a psychologist in Aotearoa New Zealand*. <https://psychologistsboard.org.nz/wp-content/uploads/2021/06/Accreditation-SP.pdf>
- New Zealand Psychologists Board. (2018). *Core competencies for the practice of psychology in Aotearoa New Zealand*. http://www.psychologistsboard.org.nz/cms_show_download.php?id=41
- Norwood, C., Tickle, A., De Boos, D., & Dewa, R. (2019). Tame clients: An evaluation of service users' and trainee clinical psychologists' perspective of service user involvement in teaching. *Journal of Mental Health Training, Education & Practice*, 14(5), 327-338. <https://doi.org/10.1108/JMHTEP-11-2018-0068>
- Paterson, R., Durie, M., Disley, B., Rangihuna, D., Tiatia-Seath, J., & Tualamahi'i, J. (2018). *He ara oranga: Report of the Government inquiry into mental health and addiction*. Government Inquiry into Mental Health and Addiction. www.mentalhealth.inquiry.govt.nz/inquiry-report
- Scanlan, J. N., Logan, A., Arblaster, K., Haracz, K., Fossey, E., Milbourn, B. T., ... & Baker, A. (2020). Mental health consumer involvement in occupational therapy education in Australia and Aotearoa New Zealand. *Australian Occupational Therapy Journal*, 67(1), 83-93. <https://doi.org/10.1111/1440-1630.12634>
- Scarf, D., Waitoki, W., Chan, J., Britt, E., Nikora, L. M., Neha, T., Schimanski, I., Macfarlane, A. H., Macfarlane, S., Bennett, S. T., Hunter, J. A., Arahanga-Doyle, H. G., & Abbott, M. (2019). Holding a mirror to society? Sociodemographic diversity within clinical psychology training programmes across Aotearoa. *New Zealand Medical Journal*, 132(1495), 79-81.
- Schreur, F. K., Lea, L., & Goodbody, L. (2015). Learning from service user and carer involvement in clinical psychology training. *Journal of Mental Health Training, Education and Practice*, 10(3), 137-149. <https://doi.org/10.1108/JMHTEP-02-2015-0009>
- Skogstad, P., Skogstad, I., & Britt, E. (2005). Taha Maori and Aotearoa/New Zealand clinical psychology: Developments at the University of Canterbury. *New Zealand Journal of Psychology*, 34(1), 58-71.
- Smith, C., & Ulus, E. (2020). Who cares for academics? We need to talk about emotional well-being including what we avoid and intellectualise through macro-discourses. *Organization*, 27(6), 840-857. <https://doi.org/10.1177/1350508419867201>
- Stuhlmiller, C., & Tolchard, B. (2019). Understanding the impact of mental health placements on student nurses' attitudes towards mental illness. *Nurse Education in Practice*, 34, 25-30. <https://doi.org/10.1016/j.nepr.2018.06.004>
- Taylor, J. E., & Gordon, S. E. (2022). Evaluating service user-led teaching of mental health recovery concepts in clinical psychology training. *Training and Education in Professional Psychology*, 16(4), 385-393. <http://dx.doi.org/10.1037/tep0000377>
- Tew, J., Gell, C., & Foster, S. (2004). *Learning from experience: Involving service users and carers in mental health education and training – A good practice guide*. Nottingham: Higher Education Academy, National Institute for Mental Health in Higher Education, Trent Workforce Development Confederation.
- Townend, M., Tew, J., Grant, A., & Repper, J. (2008). Involvement of service users in education and training: A review of the literature and exploration of the implications for the education and training of psychological therapists. *Journal of Mental Health*, 17(1), 65-78. <https://doi.org/10.1080/09638230701529715>
- Vandrevala, T., Hayward, M., Willis J., & John, M. (2007). A move towards a culture of involvement: Involving service users and carers in the selection of future clinical psychologists. *The Journal of Mental Health Training, Education and Practice*, 2(3), 34-44. <https://doi.org/10.1108/17556228200700019>
- World Health Organisation (2004). *Patients for patient safety – Forward programme*. World Health Organisations.

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Kaupapa Māori Early Years Provision and Whānau Wellbeing: A Retrospective Survey at a Taranaki-Based Centre

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Kaupapa Māori early years provision (KM-EYP) is recognised as a cornerstone of community efforts to revitalise Māori language and culture. Surprisingly, little is known about how KM-EYP influences the lives of whānau who have engaged. Parents/grandparents (N=91) of tamariki who had attended a Taranaki-based centre (between 1994 and 2017) completed a survey designed to measure 20 aspects of whānau lives, which collectively align with an ao Māori view of wellbeing. Most participants agreed that their children's learning, Māori identity and cultural capacity had been strengthened, as had their own capabilities. Comparisons between the year after exiting the Centre and the time of the survey (2019/2020) demonstrated sustained or increasing benefits, with the exception of relationships with other Centre whānau and the reo Māori capacity of tamariki. Our findings contribute to what is known about how whānau can benefit from engagement in KM-EYP.

Keywords: *Indigenous psychology, Kaupapa Māori early years provision, Wellbeing, Survey, Education, Whānau*

INTRODUCTION

E tatari atu ana kia aroaro mahana, ka taka mai te āhuru, kōia.

The warmth of spring is eagerly awaited, a joyful time of new growth and industry.

This section of an old Taranaki cultivation chant is a fitting way to begin this article. The lines evoke thoughts of the seasonal change that is heralded by the call of the kawekaweā (the long-tailed cuckoo) which alerts the community it is time to become active again to capitalise on the warmth and supportive environment that spring provides for planting and the nurturing of tender new shoots. The chant is also a metaphor for the growth and development that can occur for tamariki and their whānau in the warm and supportive environment of Kaupapa Māori early years provision (KM-EYP) in centres such as Te Kōpae Piripono, a Taranaki-based example and the site of this research. The name of the overall study, Tangi te Kawekaweā, derives from the chant, which continues to provide inspiration today as it did for our ancestors (see the Glossary for the whole chant).

Background and current context

Throughout Aotearoa, the Māori struggle for survival amidst the devastating impacts of colonisation on our communities has involved acts of resistance and relentless efforts to preserve Indigenous knowledge, language and culture for future generations (Waitangi Tribunal, 2013). Despite those efforts, 138 years after the

signing of the Treaty of Waitangi, which made this country a colony of Britain, a report by Richard Benton (1979) highlighted that the Māori language was endangered. Tribal leaders rallied, and their endeavours to stop the further loss of language and culture intensified. It was agreed that the greatest potential lay in focusing on young children and nurturing them with their parents and whānau in environments rich in language and culture, surrounded by elders. In those settings, it was hoped, a new generation might emerge conversant in the Māori language and secure in their cultural identity. From those deliberations emerged the first centres of KM-EYP, known as kōhanga reo, with the first centre opening in Wainuiomata in 1982 (Waitangi Tribunal, 2013). Throughout the 40 years that followed, KM-EYP has been central to Māori community efforts to re-establish their language, culture and whānau wellbeing (Education Review Office, 2017; Ritchie & Skerrett, 2014).

Whānau wellbeing must be viewed in the historical context of 200 years of this country's colonisation (Ritchie & Rau, 2009; Ritchie & Skerrett, 2014; Tamati et al., 2008), which has caused immense harm to Māori communities, the effects of which are perpetuated in the cultural alienation and social deprivation experienced by whānau in many communities (Houkamau, Stronge & Sibley, 2017; Pihama et al., 2014; Ritchie & Skerrett, 2014; Tamati et al., 2008). The impact has been catastrophic for tamariki Māori, many of whom exist in poverty (Dale, 2017; Statistics NZ, 2022). All Māori are impacted by the historical trauma of past events (Pihama

et al., 2014). Many are re-traumatised daily by the emotional and practical reminders of having been alienated from things inherently important to them: land, language, culture, and connection. That emotional burden underscored by the experience of racism and social discrimination, which are the perpetuation of colonisation, dissuades many whānau from taking advantage of opportunities such as KM-EYP to enhance aspects of their and their family's Māori identity (Te Huia, 2015).

KM-EYP is an inclusive term we coined to describe early learning and whānau development initiatives located philosophically and politically within an ao Māori worldview. While kōhanga reo are licensed and governed by Te Kōhanga Reo National Trust, since the early 1990s, other centres for KM-EYP have operated independently under the designation of early childhood education centre (Education Act 1989) and each with its own governance structure. The contribution of KM-EYP to the revitalisation of Māori language and the improved educational success of tamariki has been extensively acknowledged (for example, Education Review Office, 2017; Hond, 2013; Hond-Flavell et al., 2021; Ministry of Education, 2020; Ratima et al., 2012). However, there is an ongoing need for rigorous research into the short- and long-term benefits of KM-EYP for both tamariki and whānau.

Whānau development is central to KM-EYP, targeting tamariki at the beginning of their education journey and the parents and whānau who accompany them into centres. In the immersive Māori early learning and whānau development environment of KM-EYP, the indigeneity of tamariki and whānau is cherished and nurtured. Through engagement in KM-EYP, those with limited exposure to te ao Māori have the opportunity to experience Māori language and culture in the real world as contributing members of a centre's whānau collective. In the warm, supportive environment of KM-EYP, whānau members of all ages can be Māori and grow in their Māoritanga, acquiring the language and cultural understandings necessary to experience te ao Māori more fully. This cultural strengthening provided by KM-EYP lays a foundation for tamariki and whānau to reach their potential in the Māori and wider worlds, with their Māori identity intact (Cram, 2014; Pihama & Penehira, 2005; Stewart & Tocker, 2021).

It is well recognised that high quality early years provision can help ensure an optimal start to life, with benefits over the lifecourse (e.g., Almond & Curry, 2010; Campbell et al., 2014; Heckman et al., 2013; Paul, 2011; Richter et al., 2017). High-quality early years provision is particularly effective in facilitating the learning and development of disadvantaged children and improving the wellbeing of their families (Munford, Sanders, Maden, & Maden, 2007). There is, however, a dearth of evidence on how these benefits manifest and accrue for Indigenous children and their families. Te Kura Mai i Tawhiti is a collaborative multidisciplinary research

programme with the aim of contributing to building that evidence base by investigating the effectiveness and long-term benefits of Te Kōpae Piripono (as an example of KM-EYP and referred to as the Centre from here) (Ratima et al., 2019; Tamati et al., 2021). The Tangi te Kawekaweā study is a component of the wider Kura Mai i Tawhiti research programme and focused on whānau outcomes of KM-EYP.

The first phase of Tangi te Kawekaweā qualitatively explored issues associated with whānau engagement in KM-EYP (Hond-Flavell et al., 2021), specifically the facilitators of (what motivates entry and supports involvement) and barriers to engagement. The second phase of the study involved an online survey. Part one of the survey study confirmed the earlier findings and provided further insights into the facilitators of engagement in KM-EYP and the considerable barriers that whānau encounter (see Hond-Flavell et al., 2022). Part two of the survey study, which is the subject of this article, measured aspects of whānau lives after they had exited the Centre. The study explored the potential benefits and long-term wellbeing outcomes for whānau of involvement in KM-EYP using a mixed methods quantitative and qualitative approach.

The earlier qualitative stage of the Tangi te Kawekaweā study found that the whānau participants entered KM-EYP anticipating that they, their tamariki and whānau would: become proficient in Māori language and culture; develop a secure Māori identity; strengthen connection to community; and gain foundational skills to continue to be successful in life as Māori (Hond-Flavell et al., 2021). Participants reported satisfaction that their expectations of KM-EYP for their whānau had been met, suggesting that their participation in the Centre had contributed to those positive outcomes. The responses of parents and whānau enabled the identification of key aspects of whānau wellbeing in the context of KM-EYP.

The Whare Tapa Whā model of Māori health and wellbeing (Durie, 1985) depicts a meeting house that is stable (healthy), providing its four walls (four health dimensions: spiritual, physical, emotional and whānau) are strong and in balance. The model is a metaphor for an ao Māori view of wellbeing, which is the primary goal for all who enter the whare Māori of KM-EYP (Tamati et al., 2008). As per the schema of the Whare Tapa Whā, individuals who are healthy and well as Māori will be secure in their cultural identity, knowledge and capacity, and in their connection to well-functioning whānau and community (Cram, Smith & Johnstone, 2003; Durie, 1985, 1997; Durie et al., 2010; Kukutai et al., 2017; McLachlan, Waitoki, Harris & Jones, 2021). Wellbeing for Māori is a relational, collective sense of wellbeing (Cram, 2014; Dobbs & Eruera, 2014; Durie, 1994; Kara et al., 2011; Kukutai et al., 2017). Furthermore, individuals disconnected from culture may be considered well by Western standards of health and wellbeing, but not healthy 'as Māori' from an ao Māori perspective (Durie, 1994).

Table 1. Characteristics of adult participants whose tamariki/mokopuna attended the Kaupapa Māori early years programme (N=91 who exited in 2017 or earlier to allow comparisons over time)

Characteristic	Subgroup	n	Percentage
Age of whānau member at entry	<40 years of age	67	73.6
	≥40 years of age	24	26.4
Gender of whānau member	Female	58	63.7
	Male	33	36.3
Experience of Māori schooling as a child	Some	26	28.6
	None	65	71.4
Any experience of Māori schooling, comprising: - Kaupapa Māori early years provision (KM-EYP) - Kura kaupapa Māori, wharekura, or similar Māori unit - Māori boarding school			
Year of whānau member's departure from the Centre	1996 - 2007	45	49.5
	2008 - 2017	46	50.5
Current age of whānau member	<50 years of age	48	52.7
	≥50 years of age	43	47.3

The Whānau Ora Taskforce (Durie et al., 2010) identified six major whānau goals that, when achieved together, can “enable whānau to realise their full potential and give effect to their collective aspirations”. Whānau who have achieved these goals may be said to have achieved whānau wellbeing (whānau ora): whānau self-management; healthy whānau lifestyles; full whānau participation in society; confident whānau participation in te ao Māori; economic security and successful involvement in wealth creation; and, whānau cohesion. Given the historical context of whānau, described above, it is unlikely that all will achieve those goals without some form of intervention.

Further research can show whether KM-EYP can help whānau springboard towards the goals identified by the Whānau Ora Taskforce (Durie et al., 2010). What is known is that in KM-EYP, whānau can satisfy their yearning for their language and culture and find a home-like Māori space with others who share similar values and aspirations. There, parents and whānau find support through the relationships that form with significant members of the whānau-collective; the social activity and engagements of the group; the example of kaitiaki and others; and the whānau development programme of experiences and workshops/wānanga (Hond-Flavell et al., 2022; Kara et al., 2011; Moeke-Pickering, 1996; Tamati et al., 2008; Tamati et al., 2021).

Rogoff's (1995) sociocultural model of development posits that the active participation of new members in the cultural activities of a community, with the support and guidance of others, enables them to transform from novice to expert as they appropriate new knowledge, values and skills, which they can then apply to other activities or areas of their lives. The combination of exposures and experiences within the whānau-collectives of KM-EYP can help whānau develop critical awareness and make new sense of the world and the circumstances of their lives (Hond-Flavell et al., 2021; Tamati et al., 2008). In that environment, they can come to understand

the power and potential of their role and contribution to their whānau, the Māori community and the wider world (Hond-Flavell et al., 2021; Rua, Hodgetts & Stolte, 2017; Kara et al., 2011; Moeke-Pickering, 1996; Tamati et al., 2021). Sustained whānau engagement with Māori language, culture and community is described by Fox, Neha and Jose (2018) as cultural embeddedness - consistent engagement with the core features of Māori culture - which they suggest provides cultural protection and support for the development of secure Māori identity and improved Māori wellbeing.

Drawing on existing literature, the aim of this stage of the survey phase of the Tangi te Kawekaweā study was to test the following hypotheses: 1) whānau engagement in KM-EYP has had a positive influence on whānau lives that increases further after exiting the provision, 2) there are differences in these aspects of whānau lives by demographic characteristics (participant age-at-entry to the Centre, their gender, Māori-schooling-experience, the era of exit, and current age; as defined in Table 1). In addition, qualitative data, in the form of participant comments added to the questionnaire, are identified that support the quantitative findings.

METHOD

Participants

Participants in the survey study were whānau members of Te Kōpae Piripono who had parental or other caregiver roles for at least one enrolled child since the Centre started operating in 1994. Of a potential cohort of 231 eligible whānau members, four were deceased, and 79 could not be located, leaving 148 traceable. Of those 148 whānau members, 131 started the survey. One hundred and twenty-one completed surveys - a response rate of 82%.

We asked participants to rate each item at (i) one year after exiting Centre and (ii) the time they completed the survey in order to test the continued influence of engagement in KM-EYP on the lives of whānau. The sample therefore only involves those participants who

had been involved in the Centre but departed prior to 2018 (N=91). This group of participants ensured that at least two years had passed between exiting the Centre and the time of the survey to enable a comparison of responses for the two time-points. Of this subsample of 91 participants, 36.3% (n=33) were male, and 63.7% (58) were female (see Table 1, which lists all demographics). The mean age was 50.02 years.

Materials

A structured questionnaire was developed based on a comprehensive review of literature and the findings of the previous qualitative phase. The questionnaire was primarily delivered via the Qualtrics platform to facilitate self-administration online.

The survey was optimised to support participants' recall accuracy by incorporating relevant dates, names and milestones into the questionnaire. The inclusion of key information specific to each participant aided recall of whānau circumstances and personal details, feelings and behaviours one year following the departure of the whānau from the Centre. The following is an example of the use of time markers and milestones to assist participant recall: *"It was the year that...the second big earthquake (6.3) happened in Christchurch killing 184 people; the All Blacks won the Rugby World Cup; Tairāwhiti hosted Te Matatini in Gisborne; Prince William and Kate Middleton were married; and, Osama bin Laden was killed"*. The socio-demographic section of the survey (described below) also helped focus participant attention on the period following the departure of their last child who attended the Centre.

The measures were piloted with n=10 whānau members, and minor modifications were made based on their feedback. Next, each eligible whānau member was approached by phone, social media, or email as appropriate to inform them of the study and invite their participation. The online survey was emailed to participants and included further information on the study and how to access the questionnaire via the Qualtrics platform. Informed consent obtained online before the questionnaire was started. Those who did not respond or complete the entire survey were sent three reminder emails at one week, then two-week intervals, each including a new link to their individualised questionnaire. Paper copies were completed by two whānau members who did not have the technology to do so electronically. The surveys were posted for completion unaided to maintain equivalent self-report conditions.

Questionnaire structure

Whānau-life questionnaire: The section of the questionnaire that produced the data for this article was designed to demonstrate how engagement in KM-EYP might have continued to influence participants' lives after leaving the Centre. The 20-item whānau-life questionnaire was developed to measure elements of participants' lives that align with whānau wellbeing outcomes, in the context of KM-EYP and a Māori worldview. Participants' responses were recorded for two time-points: the remembered time-point 1 (one year following the exit of the last child of the whānau from the Centre) and then time-point 2 (the time of the survey, between December 2019 and February 2020). The items

are listed in Table 2, phrased for the remembered time-point 1 and tenses were adjusted as necessary for the present. Participants recorded their endorsement of each item using a 5-point Likert scale (agree strongly = 5 to disagree strongly = 1).

Language use at home: A further question asked participants what percentage Māori is spoken in their homes day-to-day. Free-text space at the end of the survey provided the opportunity for participants to provide further information on the questions or make additional comments. This article includes comments by the 91 whānau participants and any other participants where those comments are pertinent to the issues raised.

Design and procedure

The survey phase of the Tangi te Kawekaweā study was retrospective in design and involved whānau who had attended one centre of KM-EYP during the previous 25 years. The survey was designed to enable a comparison between participants' recalled and current wellbeing. This was achieved using survey questions about the year following exit from the Centre and at the time of the survey. The year after exit from the Centre was an attempt to standardise reporting time across participants. The analysis of socio-demographic data to allow within-group comparisons. Ethical approval for the overall study was obtained from the University of Otago Human Ethics Committee (16/003).

Data analysis

Whānau-life questionnaire - The frequencies of the 20 items were calculated for the two time-points (one year after exiting the Centre and the time of the survey) and organised in tabular form from most agree to least agree for the remembered time-point 1, the year after exit (see Table 2). The frequency of each item at time-point 2 (time of the survey) then appears to the right of the corresponding item. For analysis, *agree-strongly* and *agree* were combined into one *agree* category; *disagree-strongly* and *disagree* (and *neither-disagree-nor-agree*, *don't know*, *NA*, and *missed* items) into one *disagree* category, given the primary focus was on agreement. McNemar's test of change was applied to identify significant differences in frequencies over time (see Table 2). Where pertinent, comments added by participants have been quoted to supplement the quantitative findings using a mixed-methods approach driven by the quantitative data (Creswell & Clark, 2018).

To test for differences in the tailored set of questions across the five participant characteristics (participant age-at-entry to the Centre, their gender, Māori-schooling-experience, the era of exit, and current age; see Table 1), chi-square tests of association or Fisher's exact probability were calculated. Fisher's exact probability was used for comparisons where a cell had less than five cases; the two-tailed probabilities were used as none of the hypotheses were directional. Significant demographic differences are reported in the text of the results section. A Bonferroni correction for multiple testing was applied - the liberal value of $p=0.1$ was divided by the number of tests within each domain (49 within each domain of participant characteristics) to calculate the adjusted p -value (0.002). The Bonferroni adjustment reduces the risk

of type I error (falsely identifying a significant finding from the repetition of similar tests).

Language use at home - Independent t-tests were run to test for any significant demographic differences in the results of the question about the proportion of time day to day that languages were spoken in participants' homes. The Bonferroni adjustment was also applied to these tests.

RESULTS

Whānau-life questionnaire

Responses to the twenty-item whānau-life questionnaire at the remembered time-point (one year after exiting the Centre) and time-point 2 (the time they completed the survey) are listed in Table 2, along with tests of change over time. For the remembered time-point, one year after exiting the Centre, more than 80% of whānau participants endorsed the following four top-ranked items: that their child was set on a positive educational pathway; their child's Māori identity was strong; the whānau member could support the child's learning; and that he/she was confident in their parenting ability. The following comments from two parents help explain the high ranking of these items:

"[My child] left Te Kōpae Piripono proud to be Māori, confident and ready for the world" (mother of former pupil).

"[Te Kōpae Piripono] philosophies and strategies have had a huge, positive impact on my parenting. I feel really confident about my parenting skills and grateful for the knowledge I have gained and am still continuing to develop from wānanga and general involvement at Kōpae" (father of current pupil).

For the first three of these items, there was little change in agreement at the time of the survey (time-point 2). However, for the fourth item ("E14: I felt confident in my parenting ability"), a significant difference was detected, with an additional 12% of participants (93.4%) agreeing that the statement applied.

The following two top-ranked items, "E16: I had supportive relationships with other Kōpae whānau", and "E2: [first child's name] could express their thoughts in te reo Māori", achieved around 80% endorsement at the remembered time-point, dropping significantly by about 20% each at time-point 2. These are the only items for which there was a significant reduction in agreement over time.

Between 75-80% endorsement was achieved overall for the next four ranked items, which related to participants' life satisfaction, application of learnings from the Centre, communication style, and positive influence on whānau and friends. As one mother explained: *"I am thankful for the opportunity to be involved with Te Kōpae Piripono; this has contributed to my journey and success in life as a parent, wife and with my chosen vocation" (mother of a former pupil).* Three of the four items (life satisfaction, communication style and positive influence) recorded significant increases of approximately 10% at the second time-point, while the fourth item about application of learnings from the Centre (E17) did not change significantly.

The following three items were endorsed by approximately 70% of participants at the remembered time-point (one year after leaving the Centre), and these concerned their whānau/family's engagement in the Māori community (E8) and with te reo Māori, and their confidence that future generations of their whānau would speak te reo Māori (E5). The percentages for these items did not change significantly at the time of the survey.

Just below 70% of participants agreed with the next three items for the remembered time-point, and these showed significant positive change at the time of the survey. These items were: "E9: We had become close as a whānau" (20% increase), "E1: I could express my thoughts in te reo Māori" (12% increase). One participant commented on her reo Māori journey: *"As a second-language learner, my own reo development continues - Te Kōpae provided a very safe and gentle path alongside tamariki to help practise and grow" (mother of former pupil).* The third item was, "E19: I felt better able to cope with life's challenges" (11% increase), to which one mother added the following comment: *"E kore e mutu te ngana kia pai ake tōku ao me te oranga o tōku whānau. Me piki i ngā heke, me piki hoki i ngā piki (I will never cease my efforts to improve my life and the wellbeing of my whānau. We must rise from the lows, and rise further from the highs)" (mother of former pupil, translation added).*

The next two items reached around 65% agreement at the remembered time-point, relating to participants' activity in the Māori community and inclination to speak te reo Māori in the community. Endorsement did not change significantly at the time of the survey.

Significant changes were identified for the two lowest-ranked items at the remembered time-point. The first, "E10: I was capable of taking on roles and responsibilities in our wider whānau and the Māori community", was initially agreed with by 61.5% of participants, and at time-point 2, agreement had increased to 81.3%. The next and final item, "E11: I was able to take a lead with tikanga such as waiata, karakia, whaikōrero, karanga," increased from 49.5% at the remembered time-point, to 65.9% at time-point 2. One father who has gone on to iwi leadership roles, commented: *"The staff expressed manaakitanga in a way that we wanted to be around to embrace, to learn and to continue" (father of former pupil).*

Language use at home

On the proportions of languages generally used by participants' whānau in their homes (totalling 100%), at the time of the survey, the average percentages for the sample were: Māori, 30.2% of the time; English, 69.7% of the time; and other languages, 0.1% of the time (one person reported they spoke a third language). In reference to this question, one participant explained the challenge of maintaining te reo Māori use in their home: *"It is a conscious decision that I have to make to switch my thinking/language back to te reo - hence my honest response to 50/50 te reo in home. Once we are back 'on track', it is very natural for us all to kōrero i te reo" (mother of former pupil).*

Table 2. Recalled change over time in wellbeing of whānau whose tamariki/mokopuna attended the Kaupapa Māori early years programme

Wellbeing comparisons N=91: Graduated from centre 1994-2017 Time point 1: Year after exit from Centre Time point 2: Current (time of survey)	One Year after exiting Centre		Time of survey		Statistical test of change (McNemar test)			
	Overall rank	% agree	% disagree, other, na/neither/dk/missed	% agree	% disagree, other, na/neither/dk/missed	Current (time of survey)		p = value
					Not agree	Agree		
Q13 My child was set on a positive educational pathway.	1	85.7 (n=78)	14.3 (n=13)	84.6 (n=77)	15.4 (n=14)	Year after exit Not agree n=9, 69.2	Agree n=4, 30.8	p = 1.0
Q3 [first child]'s Māori identity was strong.	2	83.5 (n=76)	16.5 (n=15)	81.3 (n=74)	18.7 (n=17)	Year after exit Not agree n=11, 73.3	Agree n=4, 26.7	p = .754
Q12 I had become better at supporting my child's learning.	3	82.4 (n=75)	17.6 (n=16)	87.9 (n=80)	12.1 (n=11)	Year after exit Not agree n=5, 31.3	Agree n=11, 68.8	p = .332
Q14 I felt confident in my parenting ability.	4	81.3 (n=74)	18.7 (n=17)	93.4 (n=85)	6.6 (n=6)	Year after exit Not agree n=3, 17.6	Agree n=14, 82.4	p = .013
Q16 I had supportive relationships with other Kōpae whānau.	5	80.2 (n=73)	19.8 (n=18)	57.1 (n=52)	42.9 (n=39)	Year after exit Not agree n=14, 77.8	Agree n=4, 22.2	p < .001
Q2 [first child] could express their thoughts in te reo Māori.	6	79.1 (n=72)	20.9 (n=19)	59.3 (n=54)	40.7 (n=37)	Year after exit Not agree n=17, 89.5	Agree n=2, 10.5	p < .001
Q20 I was generally satisfied with my life.	7	79.1 (n=72)	20.9 (n=19)	90.1 (n=82)	9.9 (n=9)	Year after exit Not agree n=7, 36.8	Agree n=12, 63.2	p = .013
Q17 I practiced things that I learned at Te Kōpae Piripono.	8	76.9 (n=70)	23.1 (n=21)	69.2 (n=63)	30.8 (n=28)	Year after exit Not agree n=16, 76.2	Agree n=5, 23.8	p = .143
Q18 I was able to communicate positively.	9	76.9 (n=70)	23.1 (n=21)	90.1 (n=82)	9.9 (n=9)	Year after exit Not agree n=5, 23.8	Agree n=16, 76.2	p = .012
Q15 I was a positive influence on my whānau and friends.	10	74.7 (n=68)	25.3 (n=23)	87.9 (n=80)	12.1 (n=11)	Year after exit Not agree n=7, 30.4	Agree n=16, 69.6	p = .012
Q8 My whānau was active in the Māori community (for example, on marae, in hapū and iwi).	11	71.4 (n=65)	28.6 (n=26)	74.7 (n=68)	25.3 (n=23)	Year after exit Not agree n=15, 57.7	Agree n=11, 42.3	p = .648
Q4 We spoke te reo Māori at home.	12	70.3 (n=64)	29.7 (n=27)	60.4 (n=55)	39.6 (n=36)	Year after exit Not agree n=18, 66.7	Agree n=9, 33.3	p = .122
						Year after exit Not agree n=18, 28.1	Agree n=46, 71.9	

Table 2 (cont'd). Recalled change over time in wellbeing of whānau whose tamariki/mokopuna attended the Kaupapa Māori early years programme

Wellbeing comparisons N=91: Graduated from centre 1994-2017 Time point 1: Year after exit from Centre Time point 2: Current (time of survey)	One year after exiting Centre			Time of survey			Statistical test of change (McNemar test)		
	Overall	% agree	% disagree, other, na/neithe	% agree	% disagree, other, na/neithe	Year after exit	Current (time of survey)	p = value	
Q5 I felt confident that future generations of my whānau would be able to speak Māori.	13	70.3 (n=64)	29.7 (n=27)	70.3 (n=64)	29.7 (n=27)	Year after exit	Not agree n=21, 77.8 Agree n=6, 9.4	n=6, 22.2 n=58, 90.6	p = 1.0
Q9 We had become close as a whānau.	14	69.2 (n=63)	30.8 (n=28)	89.0 (n=81)	11.0 (n=10)	Year after exit	Not agree n=5, 17.9 Agree n=5, 7.9	n=23, 82.1 n=58, 92.1	p < .001
Q1 I could express my thoughts in te reo Māori.	15	68.1 (n=62)	31.9 (n=29)	80.2 (n=73)	19.8 (n=18)	Year after exit	Not agree n=15, 51.7 Agree n=3, 4.8	n=14, 48.3 n=59, 95.2	p = .013
Q19 I felt better able to cope with life's challenges.	16	68.1 (n=62)	28.6 (n=29)	89.0 (n=81)	11.0 (n=10)	Year after exit	Not agree n=7, 24.1 Agree n=3, 4.8	n=22, 75.9 n=59, 95.2	p < .001
Q7 I was active in the Māori community (for example, on marae, in hapū and iwi).	17	65.9 (n=60)	34.1 (n=31)	67.0 (n=61)	33.0 (n=30)	Year after exit	Not agree n=22, 71.0 Agree n=8, 13.3	n=9, 29.0 n=52, 86.7	p = 1.0
Q6 I readily spoke Māori whenever and wherever I was in the community.	18	64.8 (n=59)	35.2 (n=32)	63.7 (n=58)	36.3 (n=33)	Year after exit	Not agree n=24, 75.0 Agree n=9, 15.3	n=8, 25.0 n=50, 84.7	p = 1.0
Q10 I was capable of taking on roles and responsibilities in our wider whānau and in the Māori community.	19	61.5 (n=56)	38.5 (n=35)	81.3 (n=74)	18.7 (n=17)	Year after exit	Not agree n=14, 40.0 Agree n=3, 5.4	n=21, 60.0 n=53, 94.6	p < .001
Q11 I was able to take a lead with tikanga such as waiata, karakia, whaikōrero, karanga.	20	49.5 (n=45)	50.5 (n=46)	65.9 (n=60)	34.1 (n=31)	Year after exit	Not agree n=27, 58.7 Agree n=4, 8.9	n=19, 41.3 n=41, 91.1	p = .003

Differences by participant characteristics

Participant age at entry - At time-point 2, the time of the survey, significantly more of the younger participants (<40 years on entry of their first child to the Centre) agreed with C12: "I am confident that I can continue to support my child's learning" ($\chi^2 = 5.114$, $p = .024$).

Current age of participant - More participants in the younger "Current" age group (<50 years at the time of the survey) endorsed the following item at time-point 2 (as they completed the survey): C12: "I am confident that I can continue to support my child's learning" (Fisher's exact $p = .003$). Also, for the time of the survey (time-point 2), more of those in the older age group (≥ 50 years) endorsed C1: "I can express my thoughts in te reo Māori" (Fisher's exact $p = .020$).

Gender - Significantly more men than women agreed that at the remembered time-point, one year after exiting the Centre, E9: "We had become close as a whānau" ($\chi^2 = 5.929$, $p = .015$).

Māori schooling - More of the participants who had undergone education through a form of Māori schooling (see Table 1) agreed with E1: "I could express my thoughts in te reo Māori" (Fisher's exact $p = .012$) at the remembered time-point, and then with C1: "I can express my thoughts in te reo Māori" (Fisher's exact $p = .018$) for time-point 2, the current time.

Era of exit from the Centre - Significantly more of those who exited the Centre between 2008 and 2017 (the latter era of exit) endorsed two items for the year following exit (remembered time-point): E18: "I was able to communicate positively" ($\chi^2 = 5.275$, $p = .022$), and E6: "I readily spoke Māori whenever and wherever I was in the community" ($\chi^2 = 5.165$, $p = .023$); and one item at the time of the survey (time-point 2): C4: "We speak te reo Māori at home" ($\chi^2 = 12.356$, $p < .001$). As one participant commented: "*Ngā tino mihi ki Te Kōpae Piripono, kua tino tautoko i te whānau [ingoa] kia tutuki ō mātou wawata [mō te] reo Māori (We heartily thank Te Kōpae Piripono for the significant support that enabled the whānau [name] to achieve our dreams and aspirations for te reo Māori)*" (mother of a former pupil, translation added).

DISCUSSION

There is a paucity of research investigating how engagement in KM-EYP has influenced the lives of tamariki and their whānau over time. This study engaged with former parents and grandparents of one KM-EYP centre to examine aspects of whānau lives that collectively align with ao Māori concepts of wellbeing. The findings provide evidence for a range of reported benefits that may be associated with exposure to KM-EYP. In the year following departure from the Centre, most participants felt that their children's learning, secure Māori identity and cultural capacity were strengthened through their involvement. Participants were also confident of their own capabilities as parents/grandparents and of the closeness and community engagement of their whānau. At the time the survey was administered, the levels of endorsement for 18 of the 20 items of the measure were sustained or significantly elevated.

Māori-medium education pipeline

One of the two items that decreased significantly over time was the reo Māori capacity of participants' tamariki, many of whom did not go on to be enrolled in Māori-medium schooling. Access to high-quality Māori-medium schooling options and accurate information about those options are key barriers to the retention of tamariki in the Māori-medium pipeline (Hill, 2016; Ratima et al., 2012). The occurrence reflects long-term inadequacies in government policy and planning and a failure to address the societal pressures that may underly decisions not to pursue the Māori-medium education pathway post-KM-EYP. Participants have commented that their tamariki will revert to reo Māori, as able, when together or in contexts where Māori is spoken. However, an adequately resourced government strategy is necessary to address the factors that impede access and retention in kaupapa Māori/Māori-medium education. With higher levels of enrolment in KM-EYP and sustained engagement through the Māori-medium pipeline, more tamariki will be able to enjoy and sustain a robust relationship with their heritage language and culture.

KM-EYP is a critical entry point to the Māori-medium pipeline. The survey focused on the lives of whānau who had successfully entered and engaged in the Centre. Further research ought to focus on the whānau of the 80% of Aotearoa's Māori preschoolers who are not currently enrolled in KM-EYP (Hond-Flavell et al., 2021; Ministry of Education, 2022a), and the 46% of tamariki Māori aged 0 to 4 who were not attending any form of early years provision in 2021 (Ministry of Education, 2022b). It is likely then that these tamariki and their whānau have missed out on the benefits of sustained engagement in early years provision and the transformational potential of KM-EYP entry point to Māori-medium education.

Transformative potential of KM-EYP

Parents and whānau can arrive at centres for KM-EYP feeling whakamā because they cannot speak their mother tongue or are uncomfortable in an immersive Māori or educational setting (Hond-Flavell et al., 2021; Tamati et al., 2008). They may feel embarrassed about aspects of their circumstances or feel anxious as non-speakers about whether they can enrol their tamariki. These emotions may be expressed through internalised and externalised behaviours that can belie the underpinning emotions and historical roots (Pihama et al., 2014). Others of the whānau-collective can empathise with the feelings of new whānau through personal experience and will therefore know how to support them. The research undertaken in this centre for KM-EYP (Hond-Flavell et al., 2021; Hond-Flavell et al., 2022; Tamati et al., 2008; Tamati et al., 2021) indicates that participation in the whānau-collective, the tamariki learning programme, and the whānau development programme, can support a change in whānau disposition. Through exposure to KM-EYP, initial feelings of uncertainty and fear can transform into certainty that KM-EYP is the right choice for their tamariki and whānau; a sense of calm in the supportive kaupapa Māori environment; and confidence that their whānau will be all right.

The findings of this study add to knowledge about how programmes such as KM-EYP can moderate the impacts of colonisation on whānau and communities, providing opportunities to develop a critical awareness of the historical context to help whānau make sense of the present and envision pathways forward to improve their lives. The processes of colonisation have severely damaged the Māori community; the resultant social structures continue to marginalise whānau in the present (Pihama et al., 2014; Ritchie & Skerrett, 2014; Tamati et al., 2008). In the safety and security of KM-EYP, parents and whānau can join efforts to reclaim their language and culture, and replace introduced ideas that have not served them well with indigenous knowledge, beliefs and values.

The findings show that parents and grandparents were confident that their tamariki and whānau were doing well culturally and socially and would continue to do so. They were optimistic about their capacity to support those outcomes, and this optimism was sustained over time. A high level of life satisfaction in the year after leaving the Centre increased further at the time of the survey. Participants also felt confident that they could cope with life's challenges and continue to be a positive influence in the lives of their tamariki, whānau and friends, and this confidence too increased over time. These findings suggest that participants' confidence in their capacity to achieve their goals enables them to feel optimistic about their lives and futures.

Te reo me ngā tikanga Māori

At the time of the survey, participants reported speaking Māori in their homes almost one-third of the time, and on a whānau-life question, 60% reported their whānau spoke Māori at home. Most of these whānau participants were second language learners of Māori and had entered KM-EYP with varying levels of exposure to Māori language and culture (Hond-Flavell et al., 2022). Higher levels of Māori were spoken and the tikanga of the Centre were practiced more in the homes of those whānau who had more recently attended the Centre (2008 to 2017); there was also a decrease in the use of te reo Māori by graduate tamariki over time (as described earlier). However, there was a high level of confidence overall that the reo Māori gains would be sustained and the language secured for future generations. That tamariki emerge from KM-EYP speaking te reo Māori, perhaps with Māori as their first language, is further testament to the passion and commitment of whānau to revitalising the Māori language and culture for their younger generations. It also speaks to the effectiveness of KM-EYP in supporting that development.

Almost 70% of participants reported they could express their thoughts in te reo Māori after leaving KM-EYP, including in the home setting, with Māori being spoken in the home an average of 30% of the time across whānau. Qualitative comments support the efforts of parents and whānau to speak at home. There were higher levels of agreement among those who were younger at the time of the survey (<50 years) and those who attended some form of Māori schooling (refer to Table 1), and therefore were likely to have had greater exposure previously to Māori language and culture. The overall percentage increased to 80% at the time of the

survey, suggesting that on departing the Centre, the building blocks had been set in place for ongoing cultural strengthening through reo Māori acquisition. Whānau spend an average of 4.5 years per tamaiti in the immersive reo Māori and kaupapa Māori environment of KM-EYP. Sustained engagement in a programme that actively encourages the use of reo Māori in the home contributes to the increased capacity and confidence of parents and whānau to express their thoughts in Māori and participate as members of a speaker community. As stated earlier, through this engagement, parents become critically aware of their circumstances and the importance of reo Māori to the long-term wellbeing of their whānau. These factors, in combination, form the foundation for increased reo use in the home after engaging in this programme. For context, on the nationally-representative Te Kupenga 2018 survey (Statistics NZ, 2020), just 17.9% of the national Māori population reported being "able to speak Māori in day-to-day conversation" fairly well, well or very well.

Participants reported that they and their whānau continued to be active in the Māori community after departing KM-EYP. The cultural confidence and understanding required to undertake traditional roles and assume leadership within their whānau and community would likely have been supported by their experiences in KM-EYP. These findings speak to the cultural contribution whānau members of this centre for KM-EYP have made to the local community and suggest how important Māori cultural concepts, values, and practices continued to be for them over time. Findings indicate that the support, guidance, and opportunity available to parents and whānau in KM-EYP, delivered through the multi-faceted offerings of centres, help individuals grow as Māori and together become stronger as whānau Māori - an important predictor of intergenerational health and wellbeing for Māori (McLachlan et al., 2021). In addition to the cultural strengthening that occurs for whānau within the staunchly Māori immersive environment of KM-EYP, the following are specific examples of the ways the Centre supports whānau:

- Whānau development is both the philosophical approach and a structured programme of wānanga, learning and experiential opportunities for parents, tamariki and whānau (Tamati et al., 2008).
- Te Ara Poutama is a structured process that guides social interactions and dispute resolution for whānau members of all ages; it encourages positive and respectful communication (Tamati et al., 2008; Tamati et al., 2021).
- Te Ara Manaaki Whānau is a framework and system that facilitates kaitiaki meetings with whānau and monitors progress on agreed goals for tamariki and whānau (Hond-Flavell et al., 2017).
- The tuākana/teina and buddy-whānau support system provides support, role modelling and reinforcement of cultural practices for new whānau as they transition into the Centre.

These offerings may be of particular value to those tamariki and whānau who require the most support and stand to benefit most from the culturally reinforcing intervention.

Whānau ora

The whānau orientation of KM-EYP has broad appeal for prospective whānau (Hond-Flavell et al., 2021). Participation in the dynamism of the whānau-collective and whānau development programmes of KM-EYP has potential benefits for whānau relationships at home and in the community. Participants reported that their whānau had become close through involvement in KM-EYP, which increased significantly over time. This was more commonly reported among men than women, which is an interesting finding given that communities for KM-EYP like Te Kōpae Piripono encourage and normalise fathers' engagement. Even so, broader societal factors often prevent fathers from spending time with their tamariki and participating in their learning to the extent they would like (Ratima et al., 2012). The finding highlights the value of including male and female perspectives in order to maximise insight and the importance of father engagement in whānau-centred initiatives.

Supportive relationships with others in the Centre were important to participants, suggesting that deep connections between member whānau are valued, contributing to whānau engagement and, therefore, to the outcomes of that engagement. However, one of the two questionnaire items that decreased significantly over time was participants' supportive relationships with other Centre whānau. Such a decrease might be expected the longer whānau have been out of the Centre. Whānau participants of previous stages of the study reported enduring relationships with other individuals and whānau from the Centre (Hond-Flavell et al., 2021). The relationships between Centre whānau declined over time as daily contact reduced, which should encourage centres to think of additional ways to support the ongoing connection between former whānau and keep the communities of KM-EYP intact over time.

The strength of participant agreement on the capacity of tamariki and their whānau to effect shared outcomes for the benefit of all, is suggestive of a collective sense of efficacy. Bandura (2000) defined collective efficacy as a group's shared belief in their ability to influence their future and, through collective action, navigate any impediments and opportunities to achieve the desired end. The study findings demonstrate the importance of KM-EYP's whole-whānau approach and whānau development programming in fostering relevant skills and shared understandings about kaupapa/purpose, building social connection and providing relevant support within a Māori community. It is in this context that individuals can experience the rich rewards of belonging to whānau, to a Māori whānau-collective, and begin to feel and act as a member of that whānau (termed whānauranga at Te Kōpae Piripono; Ratima et al., 2019, Tamati et al., 2021). In the context of KM-EYP, whānau efficacy can develop from the interactive, coordinative, and synergistic actions (Bandura, 2000) of the whānau-collective and each constituent whānau, which is suggestive of whānau wellbeing and whānau ora in action.

Strengths and limitations

This study has a range of strengths and limitations. Several research team members are foundation members of the centre for KM-EYP where the research was

conducted. Our understanding of context, including the wider Taranaki context and the trusting relationships with participants are a strength of the study. This background assisted in contacting potential participants, many of whom have an ongoing relationship with the Centre and the local Māori community in Taranaki. At the same time, these strong connections to whānau and the centre mean there is potential for assumptions during the analysis and interpretation of participants' contributions. However, the lead researcher had oversight from a collaborative team versed in kaupapa Māori methods and survey methods, some of whom were not members of the KM-EYP and contributed an outsider perspective throughout the development of the survey and during the analysis and write-up of findings.

There is the possibility that whānau who could not be contacted are less likely to have experienced the same benefit from engagement in KM-EYP as those who could be traced. However, with over 25-years of operation, it was inevitable that some of the Centre's former whānau would not be contactable. Despite that, the response rate was good for an online survey (Evans & Mathur, 2005) and had adequate diversity amongst the participants to analyse demographic differences. Computer literacy and unreliable internet access were issues for some participants and are recognised limitations of online survey research (Evans & Mathur, 2005). However, technical support was available to participants and a paper version of the survey was made available to a small number on request, which enabled participation. The non-experimental methodology applied in this study cannot provide evidence of causation. Moreover, the survey method was retrospective, introducing some recognised limitations related to participant recall (Caspi et al., 1996). For example, participants may have forgotten whānau circumstances or may have very focused memories of particular circumstances that affect recall accuracy. However, our innovative design involved tailored memory cues for the year following their child's departure from the KM-EYP centre, and the insertion of their child's name within instructions to provide clarity throughout the questionnaire. The use of memory cues in this way is consistent with best practice in retrospective survey research (Caspi et al., 1996). Notwithstanding, and given the retrospective nature of this study, these findings should be considered preliminary until confirmed by future research, ideally research using a prospective design.

Another limitation to bear in mind is that the findings may not generalise to other forms of early years provision, as these are likely to differ philosophically and contextually from the site of the research, Te Kōpae Piripono. In particular, mainstream early childhood education does not typically involve the same level of whānau-centred provision (Education Review Office, 2017; Ritchie & Skerrett, 2014) and may differ in the impact on whānau Māori and other families. Future research is needed to compare the benefits of different forms of early years provision for whānau Māori to expand on the novel findings of this study from one centre.

Conclusion

The findings of this final phase of the Tangi te Kawekaweā study add to what was known about the social and cultural strengthening that can occur for whānau who engage with KM-EYP (Education Review Office, 2017; May & Hill, 2008; Pihama & Penehira, 2005; Ritchie & Skerrett, 2014). Our findings suggest that such engagement can help to strengthen key features of whānau lives associated with positive wellbeing for Māori. The study provides novel retrospective evidence of high levels of whānau involvement in the lives of tamariki, with Māori language, culture and community, and other expressions of whānau efficacy in their daily lives. Further, findings indicate that these outcomes were sustained over time. The two aspects of whānau life that declined over time (supportive relationships with other Centre whānau and the reo Māori capacity of tamariki) may be understood in the context of barriers whānau face to continuing on the Māori-medium pathway after KM-EYP. These, and the several demographic differences that

were identified (participant age at entry; current age of participant; gender; Māori schooling; era of exit from the Centre), warrant further investigation and are potential avenues for future enquiry.

Overall, the findings highlight the critical role and influence that KM-EYP has had and continues to have in Māori communities throughout Aotearoa. Longitudinal research is now needed to build on what has been learned in this study. It is hoped the growing evidence base for the important benefits of KM-EYP will encourage whānau to access the model and help centres for KM-EYP as they strive to strengthen and extend their programmes. It should also prompt other providers to reflect on aspects of their delivery to Māori, and persuade government legislators to promote the kaupapa Māori model of early years provision as one of the best investments that can be made to improve the lives of tamariki and their whānau, and the country as a whole.

Māori Glossary

ao Māori	Māori world
Aotearoa	Māori name for New Zealand
hapū	sub-tribal kinship group
iwi	tribe, people
kaitiaki	Te Kōpae Piripono term for teacher/caregiver
karakia	incantation, ritual chant, prayer
karanga	formal/ceremonial call by women
kōhanga reo	variety of KM-EYP governed by Te Kōhanga Reo National Trust (language nest)
Kōpae	shortened from Te Kōpae Piripono (literal translation is nest)
kura kaupapa Māori	primary school operating within a Māori worldview
manaakitanga	caring, kindness, respect, generosity
Māori	indigenous peoples of Aotearoa/New Zealand
Māoritanga	Māoriness, Māori practices and beliefs
marae	traditional complex of buildings and spaces where people gather and rituals of encounter take place
reo	language
reo Māori	Māori language
tamaiti	child
tamariki	children
Tangi te Kawekaweā	study title deriving from a Taranaki cultivation chant <i>Tangi te kawekaweā – waiho kia tangi ana!</i> <i>Tangi te wharauora – waiho kia tangi ana!</i> <i>E tatari atu ana kia aroaro mahana,</i> <i>Ka taka mai te āhuru! Koia!</i> <i>The long-tailed cuckoo sings – let it sing!</i> <i>The shining cuckoo sings – let it sing!</i> <i>The warmth of spring is eagerly awaited, a joyful time of new growth and industry. Let the digging begin!</i>
Taranaki	a tribal nation and region of Aotearoa
te ao Māori	the Māori world
Te Kōpae Piripono	Taranaki-based centre for KM-EYP
tikanga	culture; conventions; protocols grounded in traditional values
waiata	songs, singing, music
Waitangi Tribunal	tribunal investigating breaches of the Treaty of Waitangi
wānanga	forum for sharing knowledge/learning
whakamā	embarrassment, shame
whaikōrero	formal speech making
whānau	family; group of people bound by genealogy or shared interest; the extended family structure principle
whānauranga	a Te Kōpae Piripono word for feeling and acting as a member of a whānau/community
whānau ora	whānau health and wellbeing

References

- Almond, D., & Currie, J. (2010). Human capital development before age five. NBER Working Paper Series, 15827.
- Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current directions in psychological science*, 9(3), 75-78.
- Benton, R. A. (1979). *Who Speaks Maori in New Zealand?*. New Zealand Council for Educational Research.
- Campbell, F., Conti, G., Heckman, J. J., Moon, S. H., Pinto, R., Pungello, E., & Pan, Y. (2014). Early childhood investments substantially boost adult health. *Science*, 343(6178), 1478-1485.
- Caspi, A., Moffitt, T. E., Thornton, A., Freedman, D., Amell, J. W., Harrington, H., Smeijers, J., & Silva, P. A. (1996). The life history calendar: A research and clinical assessment method for collecting retrospective event-history data. *International Journal of Methods in Psychiatric Research*, 6(2), 101-114.
- Cram, F. (2014). Measuring Maori Wellbeing: A commentary. *MAI Journal*, 3(1), 18-32.
- Cram, F., Smith, L., & Johnstone, W. (2003). Mapping the themes of Maori talk about health. *New Zealand Medical Journal*, 116(1170), 1-7.
- Add Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.
- Dale, M.C., (2017). *Whakapono: End child poverty in Maori Whānau - A preliminary report*. Child Poverty Action Group Inc.
- Dobbs, T., & Eruera, M. (2014). *Kaupapa Māori wellbeing framework: The basis for whānau violence prevention and intervention*. New Zealand Family Violence Clearinghouse, University of Auckland.
- Durie, M. H. (1985). A Maori perspective of health. *Social Science and Medicine*, 20(5), 483-486.
- Durie, M. H. (1997). Maori cultural identity and its implications for mental health services. *International Journal of Mental Health*, 26(3), 23-25.
- Durie, M. (1994). *Whaiora: Māori health development*. Auckland: Oxford University Press.
- Durie, M. (2006). Measuring Māori wellbeing. *New Zealand Treasury Guest Lecture Series*, 1, 2007-09.
- Durie, M., Cooper, R., Grennell, D., Snively, S., & Tuaine, N. (2010). *Whānau Ora- Report of the taskforce on whānau-centred initiatives*. Ministry of Social Development, Wellington.
- Education Review Office. (2017). *Hauhaketai ngā taonga tuku iho kia puāwai ai*. Wellington, New Zealand: Education Review Office.
- Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet Research*, 15(2), 195-219.
- Fox, R., Neha, T., & Jose, P. E. (2018). Tū Māori Mai- Māori cultural embeddedness improves adaptive coping and wellbeing for Māori adolescents. *New Zealand Journal of Psychology (Online)*, 47(2), 14-24.
- Heckman, J., Pinto, R., & Savelyev, P. (2013). Understanding the mechanisms through which an influential early childhood program boosted adult outcomes. *American Economic Review*, 103(6), 2052-2086.
- Hill, R. (2016). Transitioning from Māori-medium to English-medium education: emerging findings of a pilot study. *International Journal of Bilingual Education and Bilingualism*, 19:3, 249-265.
- Hond, R. (2013). *Matua te reo, matua te tangata. Speaker community: Visions, approaches, outcomes* (Unpublished PhD thesis). Massey University, Palmerston North, New Zealand.
- Hond-Flavell, E., Ratima, M., Tamati, A., Korewha, H., & Edwards, W. (2017). *Te Kura Mai i Tawhiti: He Tau Kawekaweā--Building the Foundation for Whanau Educational Success and Wellbeing; A Kaupapa Maori ECE Approach. Teaching and Learning Research Initiative*.
http://www.tlri.org.nz/sites/default/files/projects/TLRI%20Summary_Hond-Flavell%20web%20ready.pdf
- Hond-Flavell, E., Theodore, R., Treharne, G., Tamati, A., Edwards, W., Poulton, R., Hond, R., & Ratima, M. (2021). Tangi te Kawekaweā: Whānau engagement in Kaupapa Māori early years provision – an exploratory qualitative study. *MAI Journal*, 10(1), 3-16. <https://www.journal.mai.ac.nz/content/tangi-te-kawekaweā-whānau-engagement-kaupapa-māori-early-years-provision-exploratory>
- Hond-Flavell, E., Tamati, A., Treharne, G. J., Theodore, R., Kokaua, J., Edwards, W., Hond, R., Poulton, R. & Ratima, M. (2022). Facilitators of and barriers to whānau engagement in Kaupapa Māori early years provision: A retrospective survey at a Taranaki-based centre. *MAI Journal*, 11(1), 18-33.
<https://www.journal.mai.ac.nz/content/facilitators-and-barriers-wh%20C4%81nau-engagement-kaupapa-m%20C4%81ori-early-years-provision-0>
- Houkamau, C. A., Stronge, S., & Sibley, C. G. (2017). The prevalence and impact of racism toward indigenous Māori in New Zealand. *International Perspectives in Psychology*, 6(2), 61-80.
- Kara, E., Gibbons, V., Kidd, J., Blundell, R., Turner, K., & Johnstone, W. (2011). Developing a kaupapa Māori framework for Whānau Ora. *AlterNative: An International Journal of Indigenous Peoples*, 7(2), 100-110.
- Kukutai, T., Sporle, A., & Roskruga, M. (2017). *Subjective whānau wellbeing in Te Kupenga*. Social Policy Evaluation and Research Unit.
- McLachlan, A. D., Waitoki, W., Harris, P. & Jones, H. (2021). Whiti te rā: A guide to connecting Māori to traditional wellbeing pathways. *Journal of Indigenous Wellbeing*, 6(1), 78-92.
- May, S., & Hill, R. (2008). Māori-medium education: Current issues and challenges. In N. H. Hornberger (Ed.), *Can schools save indigenous languages?* (pp. 66-98). London: Springer.
- Ministry of Education. (2022a). What we know about Māori medium early learning. *Education Counts*.
- Ministry of Education. (2022b). Māori participation in early learning. *Education Counts*.
- Moeke-Pickering, T. (1996). *Maori Identity Within Whanau: A review of literature*. Hamilton: University of Waikato.
- Munford, R., Sanders, J., Maden, B., & Maden, E. (2007). Blending whanau/family development, parent support and early childhood education programmes. *Social Policy Journal of New Zealand*, 32, 72.
- New Zealand Government. (1989). Education Act (Public Act 1989, No. 80).
- Paul, C. (2011). The development of self-control in children - a national symposium on early intervention in the life course and an outsider's perspective on the public health implications. *PHA News*, XIV(2), 10-11.
- Pihama, L., & Penhira, M. (2005). *Building baseline data on Māori, whānau development and Māori realising their potential. Literature Review: Innovation and enterprise*,

- Auckland: University of Auckland.
- Pihama, L., Reynolds, P., Smith, C., Reid, J., Smith, L. T., & Nana, R. T. (2014). Positioning historical trauma theory within Aotearoa New Zealand. *AlterNative: An International Journal of Indigenous Peoples*, 10(3), 248–262.
- Ratima, M., Edwards, P., Edwards, H., Hammond, K., Edwards, M., Edwards, W., Johnston, P. & Whareaitu, M. (2012). *Parent and whānau demand for Māori medium education: A report prepared for the Ministry of Education*. Wellington: Aatea Solutions.
- Ritchie, J., & Rau, C. (2009). Mā wai ngā hua? 'Participation' in early childhood in Aotearoa/New Zealand. *International Critical Childhood Policy Studies*, 2(1).
- Ritchie J., & Skerrett, M. (2014). *Early Childhood Education in Aotearoa New Zealand: History, Pedagogy, and Liberation*. New York: Palgrave Macmillan.
- Richter, L. M. et al. (2017). Investing in the foundation of sustainable development- pathways to scale up for early childhood development. *The lancet*, 389(10064), 103-118.
- Rogoff, B. (1995). Observing sociocultural activity on three planes: participatory appropriation, guided participation, and apprenticeship. In J.V. Wertsch, P. del Rio, & A. Alvarez (Eds.), *Sociocultural studies of mind*. Cambridge, UK: Cambridge University Press.
- Rua, M., Hodgetts, D., & Stolte, O. E. E. (2017). Māori men: An indigenous psychological perspective on the interconnected self. *New Zealand Journal of Psychology*, 46(3), 55-63.
- Statistics NZ (2020). *Te Kupenga: 2018 (final) - English*. <https://www.stats.govt.nz/information-releases/te-kupenga-2018-final-english>
- Statistics NZ. (2022, February 24). *Child poverty statistics: Year ended June 2021* [Information release]. <https://www.stats.govt.nz/information-releases/child-poverty-statistics-year-ended-june-2021>
- Stewart, G. T., & Tocker, K. (2021). Te tupu o te rākau: Stages of Māori medium education. WINHEC: *International Journal of Indigenous Education Scholarship*, 16(1), pp. 113-141.
- Tamati, A., Hond-Flavell, E., & Korewha, H. (2008). *Te Kōpae Piripono Centre of Innovation Research Report*. Education Counts. Ministry of Education. https://www.educationcounts.govt.nz/data/assets/pdf_file/0008/118457/Te-Kopae-Piripono-COI-Full-Report.pdf
- Tamati, A., Ratima, M., Hond-Flavell, E., Edwards, W., Hond, R., Korewha, H., Theodore, M., Treharne, G., & Poulton, R. (2021). He piki raukura: Understanding strengths-based Māori child development constructs in kaupapa Māori early years provision. *MAI Journal*, 10(1), 17-29. <https://www.journal.mai.ac.nz/content/he-piki-raukura-understanding-strengths-based-maori-child-development-constructs-kaupapa>
- Te Huia, A. (2015). Perspectives towards Māori identity by Māori heritage language learners. *New Zealand Journal of Psychology*, 44(3), 18-28.
- Waitangi Tribunal. (2013). *Matua rautia: Report on the Kōhanga Reo claim, Wai 2336*. Wellington: Waitangi Tribunal.
- Wirihana, R., & Smith, C. (2014). Historical trauma, healing and well-being in Maori communities. *MAI Journal*, 3(3), 198–210.

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Different Domains of Area-level Deprivation Predict Individual Differences in System Justification and Collective Action Support

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Research on area-level deprivation has yet to illuminate how the macro-level context affects individual-level measures of ideologies that justify inequality. The current study addressed this oversight by investigating the associations different forms of area-level deprivation have with system-justifying beliefs and whether these associations, in turn, predict support for (or opposition to) collective action. Using a nationwide random sample of New Zealand adults (N = 45,354), results reveal that area-level deprivation in Employment, Income and Housing correlated negatively, whereas area-level deprivation in Education and Access correlated positively, with individual-level measures of system justification. Moreover, these different domains of area-level deprivation had indirect effects on collective action support via system justification. The implications of these results for understanding how and when people respond to macro-level inequality are discussed.

Keywords: *Area-level deprivation, System justification, Collective action support, Responses to Inequality*

INTRODUCTION

In an age of rising inequality and poverty, the association between deprivation and poor health and social outcomes is unequivocal (Adams et al., 2009; Atkinson et al., 2014; Osborne et al., 2022; Pickett & Wilkinson, 2010). Notably, while the income gap between the rich and the poor has widened considerably in the last few decades (Saez & Zucman, 2016), inequality has also resulted in stark differences in the availability of resources for deprived (relative to affluent) neighbourhoods (Chen et al., 2012). This *area-level* deprivation—that is, levels of disadvantage relative to the local community and/or wider society—has significant, negative impacts on mortality (Jaffe et al., 2005), mental health (Abas et al., 2006; Skapinakis et al., 2005), physical health (Adams et al., 2009), and general quality of life (Breeze et al., 2005). These effects are independent of individual levels of deprivation or socioeconomic status (e.g., Adams et al., 2009). The recent pandemic provides a particularly poignant example of the deleterious consequences of area-level deprivation, as deprived communities are more likely than their affluent counterparts to contract, as well as die from, COVID-19 (Lewis et al., 2020; Madhav et al., 2020).

Although the consequences of area-level deprivation for health and well-being are well-established, less is understood about the effect area-level deprivation has on individual beliefs and ideologies. Indeed, while research at the individual-level of analysis has begun to investigate the effects of deprivation on individual beliefs and social behaviours (e.g., see Abrams & Grant, 2012), the impacts of *societal-level* indicators of deprivation on individual beliefs remain unexplored. Specifically, research has yet to investigate the impact of area-level deprivation on beliefs about society's fairness, despite these system-justifying beliefs being pivotal to

how people respond to either real or perceived inequalities (Jost, 2019; Jost & Banaji, 1994).

The current study addresses this oversight by investigating the relationship between area-level deprivation and individual endorsement of system justification—that is, beliefs that society is fair and ‘just’ (Jost, 2019). Using a nationwide random sample of New Zealand adults, we examine the associations between seven unique ‘domains’ of deprivation at the area level (i.e., employment, income, crime, housing, health, education, and access; see Table 1) and personal endorsement of system justification. In doing so, we aim to determine whether particular domains of deprivation at the area-level correlate with individual-level endorsement of system-justifying beliefs. Moreover, we aim to determine whether these distinct domains of neighbourhood-level inequality have indirect effects on individual-level support for collective action via system justification. As such, we increase understanding in both area-level deprivation and system-justification research by providing novel insights into the relationships between macro-level inequality and individual beliefs, and by illuminating the macro-level conditions that may promote (or impede) social change.

Defining and Measuring Area-level Deprivation

Area-level deprivation research over the past 50 years stems from a theoretical distinction between objective ‘poverty’ and deprivation. In the 1980s, Townsend (1987) defined deprivation as a palpable disadvantage *relative* to the local community or wider society to which an individual (or group) belongs. Indeed, while inequality is often defined as the distribution of income *within* a certain area, area-level deprivation refers to disadvantage *between* different areas or communities (see Townsend, 1987). As such, area-level deprivation is a particular *form* of inequality

whereby different neighbourhoods have, on average, differential access to essential resources, including employment, education, and housing. Townsend also noted that deprivation comprises both material and social deprivation, and, as such, individuals can experience *multiple* forms of deprivation which may have cumulative effects (Exeter et al., 2017; Townsend, 1987). Townsend used these definitions to develop an index of deprivation in the United Kingdom, utilising four Census-derived indicators with the theoretical ability to measure both material and social deprivation. The aforementioned Townsend Index informed subsequent area-level deprivation indices, with more recent research considering the effects of multiple indicators of neighbourhood-level deprivation on individual-level health and social outcomes (e.g., Exeter et al., 2017).

Indices of multiple distinct forms of area-level deprivation are pivotal to current health and advocacy research, with countries including the United Kingdom (Herbert, 1975), the United States (Andrews et al., 2020), Canada (Bell & Hayes, 2012), and New Zealand (Atkinson et al., 2014; Exeter et al., 2017) utilising census data to ‘map’ the deprivation of different neighbourhoods. Although the Townsend Index utilises only four deprivation indicators, recent research employs multiple additional indicators of deprivation, often categorized into ‘domains’ that represent unique social and material forms of deprivation (e.g., Atkinson et al., 2014). Examples of these domains include Communication (access to the internet), Transport (car access and ownership), and Housing (homeownership; Atkinson et al., 2014; Bell & Hayes, 2012). That said, many census-based indices of deprivation assume that particular variables represent deprivation in consistent, tangible ways. Car ownership, for example, is less indicative of deprivation in areas with reliable access (vs. unreliable or no access) to public transport (Christie & Fone, 2003; Salmond et al., 2007). As such, many area-level deprivation measures are not always indicative of deprivation across variable contexts (e.g., rural versus urban environments), limiting the scope of area-level deprivation research.

More recently, researchers developed the New Zealand Indices of Multiple Deprivation (IMD; Exeter et al., 2017), which employs 28 unique—albeit nationally relevant—indicators of deprivation across seven domains: Employment (the number of unemployed working-age people), Income (the amount of financial assistance provided by the State to those with insufficient income), Crime (the victimisation rates of seven major offences), Housing (the proportion of the population living in overcrowded or rental households), Health (the amount of ill health and mortality), Education (the number of people without formal qualifications), and Access (the availability of essential amenities including grocery stores; see Table 1). These seven domains are measured at the Data Zone level—a specifically constructed geographical unit used to analyse neighbourhood-level deprivation in New Zealand (see Zhao & Exeter, 2016, for construction). Critically, the IMD is underpinned by Townsend’s original definition of multiple deprivation, albeit with a key extension;

‘multiple’ deprivation is not a specific form of deprivation in and of itself, but rather, the *consequence* of both the cumulative and independent effects of several forms of deprivation (Exeter et al., 2017; Noble et al., 2006). In other words, the IMD aims to allow for specific domains of deprivation to be used to investigate their unique *and* cumulative effects on different health and social outcomes.

By distinguishing between distinct domains of deprivation, the IMD addresses several limitations of previous area-level deprivation research. As mentioned, previous measurements have relied on measures from Census data that quickly become outdated (e.g., access to the internet) or are variably related to deprivation based on location (e.g., car ownership). In contrast, the IMD provides a ‘standard’ of deprivation at a national level that facilitates valid comparisons between neighbourhoods and isolates the domains of deprivation that may be more (or less) indicative of poor health outcomes. For example, Exeter and colleagues (2017) demonstrated the validity of the IMD by testing its association with the ranked proportion of smokers in a particular Data Zone. They found a strong correlation between overall IMD scores and smoking rates, as well as strong, independent associations between smoking rates and the Education, Income, and Employment domains of deprivation (Exeter et al., 2017). The authors also found unique associations between the IMD and the number of households living in poverty, although Education, Income, and Employment were more strongly associated with the number of households living in poverty than were the remaining domains (thus, demonstrating the discriminant validity of the IMD). The different domains of the IMD also have unique effects on dental outcomes (Shackleton et al., 2018) and childhood obesity (Exeter et al., 2019), highlighting that multiple forms of area-level deprivation can have independent, as well as cumulative, effects on health and well-being.

Given the strong associations between the IMD and health and well-being, the IMD may similarly impact social psychological outcomes. Indeed, the IMD was designed to assess the geography of deprivation and its association with health *and* social outcomes (Exeter et al., 2017). Although some research has investigated the relationship between area-level deprivation and social outcomes such as religiosity (e.g., Hoverd et al., 2013), research has yet to thoroughly examine the associations between different area-level forms of deprivation and social processes. Thus, while individual- and group-level research has found a significant association between deprivation and individual ideology (e.g., Jost et al., 2003), the relationship(s) between area-level deprivation and individual social outcomes is relatively unexplored.

System Justification Theory

One way area-level deprivation may impact social outcomes is by fostering system justifying beliefs; that is, beliefs that society is fair and ‘just’ (Jost & Banaji, 1994). System justifying beliefs motivate people to defend, justify, and bolster the *status quo*, even when doing so conflicts with their self-interests (Harding & Sibley, 2013; Jost, 2019). Indeed, although system justifying beliefs further the self-interests of high-status

individuals, system justification theory argues that the motivation to defend the status quo may, at least under some conditions, ironically be *stronger* amongst the disadvantaged (Henry & Saul, 2006; Jost & Hunyady, 2005; Jost et al., 2003). These considerations build upon, but somewhat contrast with, social identity theory (SIT; Tajfel & Turner, 1979). While SIT argues that disadvantaged people will be more *accepting* of their disadvantaged status when social systems are perceived as legitimate or stable, system justification theory argues that disadvantaged people *endorse* the status quo because they *want* to perceive the system they are a part of as legitimate or stable (Jost & Burgess, 2000).

The tendency for the disadvantaged to sometimes support the status quo is due, in part, to the palliative nature of system justification. Specifically, system justification makes people feel better about the nature of the status quo and, in turn, reduces the impact of inequality on well-being (e.g., Bahamondes et al., 2019; Harding & Sibley, 2013; Jost, 2019). One explanation for why this may be especially true for disadvantaged people stems from 'hybrid' explorations of cognitive dissonance and system justification theories (see Jost et al., 2003). Indeed, cognitive dissonance theory argues that people respond to inconsistencies amongst their thoughts, feelings, and behaviours by engaging in psychological 'work' to reduce the inconsistency (Festinger, 1957). This usually results in greater support for the cognition that is most resistant to change (Harmon-Jones & Harmon-Jones, 2007). In the case of social inequality, people might resolve inconsistencies between their disadvantaged status and knowledge of the stability of the status quo by justifying the existing systems and authorities (Jost et al., 2003; Sengupta et al., 2017; Sengupta et al., 2015). As such, in the absence of a direct challenge to the social system, disadvantaged individuals may rationalise their own suffering (e.g., see Jost, 2019). While this has a short-term palliative effect on well-being, system-justifying ideologies prevent people who suffer most in current systems from challenging or changing them and, as such, work against their self-interest in the long-term (Osborne et al., 2019).

Although people have a fundamental need to justify the system, system justification theory does not argue that people *invariably* perceive the status quo as fair and just, nor does it argue that dissonance reduction is the sole mechanism behind such beliefs (see Jost, 2019). Rather, Jost argues that the strength of system justification endorsement varies by both dispositional and situational factors. For example, dispositional factors such as death anxiety and a need to share reality predict a greater endorsement of politically conservative and system-justifying beliefs (Cheung et al., 2011; Hennes et al., 2012). As for situational factors, system justification varies by how reliant people are on a particular system. For instance, individuals are often highly dependent on educational, political, and legal systems, resulting in greater deference to, and support for, these particular authorities (van der Toorn et al., 2011).

Whether an individual within an area of high deprivation endorses system justification also likely depends on whether their self-interests *outweigh* the general ideological motive to bolster the status quo (Jost

et al., 2004). Indeed, endorsing system justification directly conflicts with the self-interests of those disadvantaged by the system (i.e., by preventing social change) and has long-term, negative consequences for disadvantaged people (e.g., Harding & Sibley, 2013). As such, there may be forms of area-level deprivation whereby the adverse effects of experiencing neighbourhood-level inequality *surpass* the palliative benefits of endorsing the status quo. At the individual level, Sears and Funk (1990) note that self-interest is most relevant to decision-making when (a) the costs and benefits of a particular position are clear, (b) the stakes of the position are high, and (c) the outcome is (nearly) certain. At the macro-level, particular forms of area-level deprivation with more immediate and severe social consequences may result in individuals endorsing *lower* levels of system justification. In short, individual endorsement of system justification should vary both by the *degree* of area-level disadvantage and the *form* (or domain) of that disadvantage.

In the context of the current study, area-level deprivation should be associated with personal endorsement of system justifying beliefs. This relationship should, however, vary between individuals clustered within different domains of area-level deprivation. Indeed, research suggests that differences in the dependency an individual and their neighbourhood has on a particular system may also translate into variations in system-justifying beliefs (van der Toorn et al., 2011). Given this, one would expect different domains of area-level deprivation to be differentially associated with system justification. For example, neighbourhoods with high area-level deprivation in Employment or Education may be more financially and socially dependent on government support. As such, this may promote individual endorsement of the status quo. However, the social *consequences* of different domains of area-level deprivation may have variable immediacy and severity and, as such, may result in individuals who experience distinct forms of area-level deprivation endorsing different levels of system justification. If the severity and immediacy of an outcome(s) in a particular domain of deprivation is apparent *and* substantive enough to counteract the desire to justify the status quo, then we may see a lower endorsement of system justification. However, to our knowledge, research has yet to investigate whether different domains of area-level deprivation are more strongly associated with the endorsement of system justification.

Overview of the Current Study

The current study addresses these oversights by elucidating the relationships between different domains of area-level deprivation and individual-level endorsement of system justification. We also investigate whether distinct forms of neighbourhood-level inequality have indirect effects on support for collective action via system justification. In examining these questions, we address a significant gap in the area-level deprivation and the system justification literature. To our knowledge, research has yet to investigate the relationship(s) between societal-level inequality and individual endorsement of system justification, despite the latter

being a significant predictor of how people respond to inequality (Jost et al., 2017; Osborne & Sibley, 2013). Similarly, research has yet to elucidate whether different domains of deprivation have differential associations with personal endorsement of system justification, despite system justification theory arguing for specific conditions in which people may be more (less) likely to endorse such beliefs (e.g., Jost, 2019). Finally, research has yet to investigate whether the relationship between these constructs is, in turn, associated with greater support for social change. Thus, the current study provides novel contributions to the literature by uncovering the ‘geography’ of system justification—namely, the specific conditions of macro-level inequality that are more (or less) associated with the endorsement of system justifying beliefs amongst individuals, and, in turn, differing support for social change.

Using a nationally representative sample of New Zealand adults, we investigate the associations between the seven domains of the IMD, individual endorsement of system justification, and individual collective action support. Specifically, we utilise three distinct system justification measures (general, ethnic, and gender system justification) to examine whether the effects of area-level deprivation are consistent across different forms of endorsement of the status quo. While system justification theory suggests that deprivation may sometimes foster the endorsement of system-justifying beliefs (Jost, 2019; Jost & Hunyady, 2003; Jost et al., 2003), research has yet to discern whether particular forms of societal-level inequality have different effects on people’s motivation to justify the status quo. As such, certain macro-level conditions may decrease people’s motivation to justify the system, even when confronted with substantial objective amounts of neighbourhood-level disadvantage.

To these ends, we expect distinct domains of area-level deprivation to have distinct associations with system justification. For example, while research at the individual level suggests that people highly dependent on government systems may be more likely to endorse them (see van der Toorn et al., 2011), individuals in neighbourhoods affected by inequalities with more immediate social consequences (e.g., Employment or Income deprivation) should be less likely to endorse system justifying beliefs. As such, whether someone supports the systems that disadvantage them should vary by a) how dependent individuals are on these social systems and b) the severity and likelihood of consequences of different forms of neighbourhood inequality. We also expect the different domains of area-level deprivation to indirectly predict collective action support via system justification. Specifically, domains of area-level deprivation associated with higher individual endorsement of system justification should lead to *reduced* support for collective action (see Jost et al., 2017). Conversely, we expect domains of area-level deprivation associated with lower endorsement of system justification to predict greater collective action support.

Given the current socio-political climate of rising rates of inequality, it is becoming increasingly important to examine the effects of area-level deprivation on individual-level perceptions of fairness. Indeed, in an age

of increasing inequality, both within New Zealand and internationally (Sibley et al., 2011; Yen, 2009), there is a growing need for research that considers the relationship between the social context and individual ideology. Understanding the particular forms of deprivation that promote (or impede) system justifying beliefs allows for a more nuanced understanding of why we only see responses to inequality under *certain circumstances* (see Osborne & Sibley, 2013). As such, investigating these associations provides critical insights into not only the social consequences of different forms of deprivation but also the specific conditions in which individuals are more likely to support—or oppose—social change.

METHOD

Sampling Procedure

The current study analysed data from Time 10 of the New Zealand Attitudes and Values Study (NZAVS)—a nation-wide longitudinal panel study of New Zealand adults that began in 2009. Sampling for Time 10 occurred on six occasions. In 2009 (Time 1), random sampling from the electoral roll yielded 6,518 participants (response rate = 16.6%). By 2011, 3,914 participants remained in the study (retention rate = 60%). To account for sample attrition, a non-random booster sample was recruited from the website of a national newspaper, yielding a further 2,970 participants and increasing the sample size at Time 3 to 6,884 participants.

Four additional booster samples were conducted by randomly sampling the electoral roll (without replacement). In 2012 (Time 4), 5,108 new participants were recruited (response rate = 10.0%). The second sampling occasion in 2013 (Time 5) recruited a further 7,581 participants (response rate = 10.6%). The third sampling occasion occurred in 2016 (Time 8) and recruited 7,669 new participants into the study (response rate = 9.5%), bringing the sample size to 21,936 participants. By 2017 (Time 9), 17,072 participants remained in the study (retention rate from Time 8 = 77.8%). A fourth sampling occasion occurred in 2018 (Time 10), recruiting a further 29,293 participants into the study (response rate = 9.2%). In total, 61,535 participants completed at least one wave of the study. We focus on data from Time 10 because it provides the biggest cross-sectional sample of the study to date, which ensures that we have a sufficient sample size within nesting factors to estimate our multi-level models.

Participants

A total of 45,354 participants provided partial or complete responses to our variables of interest at Time 10 ($M_{age} = 48.69$, $SD = 13.84$) and were nested within 5,717 Data Zones (average cluster size = 7.93). Of these participants, 62.6% were women, and most identified either as New Zealand European (80.3%) or Māori (9.9%). A small percentage of the sample identified as Asian (4.9%) or Pacific Islander (1.8%). The rest of the sample (3.1%) identified as another ethnic group or failed to indicate their ethnicity.

Measures

Time 10 of the NZAVS included the following measures relevant to this study: (i) system justification,

(ii) ethnic system justification, (iii) gender system justification, (iv) area-level deprivation, and (v) collective action support. Unless otherwise specified, items were rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores reflecting higher levels of the given variable.

Within-Level Variables

System Justification: The following four items adapted from Kay and Jost (2003) were used to assess general system justification: (i) “Everyone has a fair shot of wealth and happiness in New Zealand”; (ii) “In general, I find New Zealand society to be fair”; (iii) “In general, the New Zealand political system operates as it should.”; and (iv) “Most of New Zealand’s policies serve the greater good”. These items were averaged to assess the endorsement of system justifying beliefs ($\alpha = .65$).

Ethnic System Justification: The following two items were used to assess endorsement of ethnicity-based system justification: (i) “Everyone in New Zealand has a fair shot at wealth and happiness, regardless of ethnicity or race”; and (ii) “In general, relations between different ethnic groups in New Zealand are fair”. These items were averaged to assess endorsement of ethnic system-justifying beliefs ($\alpha = .51$).

Gender System Justification: The following two items were used to assess endorsement of gender-based system justification: (i) “In general, relations between men and women in New Zealand are fair”; and (ii) “Men and women both have a fair shot at wealth and happiness in New Zealand”. These items were averaged to assess endorsement of gender system justification ($\alpha = .65$).

Collective action support: Collective action support was measured using three items from Cronin and colleagues (2012): (a) “I have considered voting in terms of what is good for my particular ethnic group”; (b) “I have considered participating in demonstrations on behalf of my ethnic group.”; and (c) “I have considered signing petitions on behalf of my ethnic group” ($\alpha = .76$).

Between-Level Variables

Area-level Deprivation: The current study used the New Zealand IMD (Exeter et al., 2017) to measure the distinct forms of deprivation in participants’ neighbourhoods. To these ends, the IMD divides the country into 5,958 unique Data Zones (DZs), with an average population of 712 (see Zhao & Exeter, 2016). These DZs are ranked in ascending order of deprivation using 28 indicators of area-level deprivation across the following seven domains (in weighted order; see Table 1): Employment, Income, Health, Education, Housing, Crime, and Access. These ranks are categorized further into quantiles and deciles to facilitate the use of the IMD in research, ranging from Decile 1 (least deprived) to Decile 10 (most deprived). Most importantly, the construction of the IMD facilitates research on the effects of *both* the overall IMD and its separate domains on different health and social outcomes, allowing us to examine the unique effects of the seven domains of deprivation on our variables of interest.

Data Analysis

Given that the current study aimed to investigate a) the effects of area-level deprivation on individual-level endorsement of system-justifying beliefs, and b) whether

distinct forms of area-level deprivation had indirect effects on collective action support via system justification, we estimated a Bayesian multilevel model whereby participants ($n = 45,354$) were nested within ranked Data Zones ($k = 5,717$).

RESULTS

Table 2 displays the descriptive statistics for, and bivariate associations between, our variables of interest and participants’ demographic information. Our multilevel model examined the extent to which seven domains of area-based deprivation uniquely correlate with individual-level endorsement of system-justifying beliefs and collective action support. To these ends, individual endorsement of system justification, ethnic system justification, and gender-based system justification were regressed onto the seven unique domains of the IMD. Furthermore, we regressed collective action support onto the seven domains of the IMD and the three measures of system justification to conduct our mediation analyses.

Table 3 displays the direct associations between our variables of interest. We focus predominantly on the unstandardised beta coefficients in our model. The Bayesian b coefficients in Table 3 can be interpreted similarly to unstandardised coefficients in a fixed-effects multiple regression whereby the coefficient signifies the extent to which one-unit change in the predictor variable (i.e., domains of area deprivation) corresponds to an x -unit change in the outcome variable (i.e., system justification or collective action support). Critically, the model provides the independent associations between each IMD domain, system justification, and collective action support while controlling for all other predictors in the model.

Table 3 reveals that the area-level deprivation in Crime and Health were unreliably associated with system justification. However, the remaining domains of the IMD were reliably associated with the endorsement of system justification. Specifically, area-level deprivation in Employment ($b = -0.016$, $SD = 0.003$, $p < 0.001$), Income ($b = -0.016$, $SD = 0.004$, $p < 0.001$), and Housing ($b = -0.008$, $SD = 0.003$, $p = 0.003$) were negatively associated with system justification. These results indicate that, as area-level income, employment, and housing deprivation increased, the individual-level endorsement of system justification decreased. Conversely, area-level deprivation in Education was positively associated with system justification ($b = 0.019$, $SD = 0.003$, $p < 0.001$), indicating that participants living in areas with high (relative to low) levels of education deprivation had higher levels of system justification.

In terms of ethnic system justification, Table 3 also shows that area-level deprivation in Employment was negatively associated with endorsement of ethnic system-justifying beliefs ($b = -0.039$, $SD = 0.005$, $p < 0.001$). That is, the greater the area-level employment deprivation, the less individuals living within these communities endorsed ethnic system justification. Conversely, area-level deprivation in both Education ($b = 0.066$, $SD = 0.005$, $p < 0.001$) and Access ($b = 0.017$, $SD = 0.003$, $p < 0.001$) correlated positively with indivi-

Table 1. Domains, indicators, and weights of the Index of Multiple Deprivation (IMD).

Domain	Indicators	Domain weights
Employment ^a	<ul style="list-style-type: none"> The working age population receiving the Unemployment Benefit The working age population receiving the Sickness Benefit 	28%
Income ^a	<ul style="list-style-type: none"> Working For Families payments (weekly, \$ per 1000 population) Income related benefit payments (weekly, \$ per 1000 population) 	28%
Crime ^a	Victimization rates for: <ul style="list-style-type: none"> Homicide and related offences Assault Sexual assault Abduction and kidnapping Robbery, extortion and related offences Unlawful entry with intent/Burglary Theft and related offences 	5%
Housing ^a	<ul style="list-style-type: none"> The number of persons in households which are rented The number of persons in households which are overcrowded 	9%
Health ^b	<ul style="list-style-type: none"> Registrations for cancers (with a social gradient) Standardised Mortality Ratio (SMR) Acute hospitalisations related to infectious diseases (with a social gradient) Acute hospitalisations related to respiratory diseases (with a social gradient) Emergency admissions to hospital 	14%
Education ^b	<ul style="list-style-type: none"> School leavers not transitioning to tertiary studies Youth not in education, employment, or training School leavers younger than 17 years old Working age people 15-64 with no qualifications School leavers with less than NCEA Level 2 	14%
Access ^b	Distance to the three nearest: <ul style="list-style-type: none"> Early Childhood Education Centres Schools for years 1 to 8 Supermarkets Petrol stations GPs or Accident and Emergency clinics 	2%

Note. ^aIndicators were summed and divided by the population denominator to create the domain score.

^bIndicators were ranked, transformed to a normal distribution and then combined using weights generated by factor analysis to create the domain score. Source: Exeter et al. (2017).

-dual level endorsement of ethnic system justification. In other words, the greater the area-level deprivation in education and access, the more residents within these neighbourhoods endorsed ethnic system justification.

Similar patterns emerged for gender-based system justification; area-level deprivation in Employment ($b = -0.036, SD = 0.004, p < 0.001$), Income ($b = -0.018, SD = 0.006, p < 0.001$), and Housing ($b = -0.009, SD = 0.004, p = 0.008$) correlated negatively with individual-level endorsement of gender system justification. Additionally, area-level deprivation in both Education ($b = 0.056, SD = 0.004, p < 0.001$) and Access ($b = 0.017, SD = 0.003, p < 0.001$) correlated positively with gender system justification. That is, as area-level employment, income, and housing deprivation increased, individual-level endorsement of gender-based system justification decreased. Conversely, as area-level deprivation in education and access increased, individual-level endorsement of gender-based system justification also increased.

Finally, in terms of collective action support, Employment, Income, Crime, Health, and Access deprivation were unreliably associated with collective

action support. Rather, only Housing ($b = 0.032, SD = 0.005, p < 0.001$) and Education ($b = 0.027, SD = 0.010, p < 0.001$) deprivation were directly associated with collective action support. As area-level deprivation in Housing and Education increased, so too did support for collective action. That said, all three measures of system justification were reliably associated with collective action support. Specifically, system justification and gender-based system justification were negatively associated with support for collective action ($b = -0.911, SD = 0.203, p < 0.001$ and $b = -0.237, SD = 0.104, p < 0.001$, respectively). Conversely, ethnic system justification was *positively* associated with collective action support ($b = 0.706, SD = 0.094, p < 0.001$). That is, as ethnic system justification *increased*, collective action support also increased.

Mediation Analyses

After identifying the different domains of the IMD that uniquely predict individual endorsement of system justification, we sought to investigate the possible indirect effects of the seven domains of the IMD on collective action support via our three measures of area-

Table 2. Descriptive statistics and bivariate correlations between the variables included in our analyses, and relevant demographic information.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Age	---														
Gender ^a	.083**	---													
Income	-.052**	.069**	---												
Minority ^b	-.116**	-.025**	-.059**	---											
System Justification (SJ)	.125**	.123**	.066**	-.028**	---										
Ethnic SJ	.106**	.160**	.000	.008	.585**	---									
Gender SJ	.096**	.203**	.029**	-.027**	.535**	.584**	---								
Collective Action Support	.016**	-.028**	-.088**	.413**	-.029**	.028**	-.023**	---							
IMD Employment	-.007	-.019**	-.201**	.127**	-.056**	-.015**	-.038**	.108**	---						
IMD Income	-.026**	-.023**	-.245**	.157**	-.053**	.008	-.021**	.134**	.794**	---					
IMD Crime	-.019**	-.002	-.094**	.091**	-.035**	-.011*	-.026**	.069**	.451**	.461**	---				
IMD Housing	-.119**	-.010*	-.118**	.206**	-.056**	-.028**	-.053**	.115**	.525**	.613**	.475**	---			
IMD Health	-.035**	-.019**	.134**	.128**	-.037**	.008	-.010*	.095**	.479**	.575**	.280**	.468**	---		
IMD Education	.040**	-.021**	-.259**	.099**	-.015**	.068**	.044**	.130**	.637**	.740**	.325**	.326**	.455**	---	
IMD Access	.107**	.000	-.032**	-.100**	.040**	.067**	.076**	-.027**	-.175**	-.217**	-.321**	-.498**	-.213**	.128**	---
\bar{x}	49.2	0.37	1.15	0.17	4.41	3.94	4.57	2.29	5.10	4.92	5.09	4.87	4.96	4.93	5.71
SD	13.84	0.48	0.96	0.38	1.06	1.50	1.41	1.41	2.73	2.71	2.81	2.69	2.75	2.76	2.90
α	---	---	---	---	.65	.51	.65	.76	---	---	---	---	---	---	---
n	45,353	45,244	41,803	43,966	44,297	45,339	45,281	45,285	45,354	45,354	45,354	45,354	45,354	45,354	45,354

Note. ^aGender was dummy-coded (0 = women, 1 = men); ^bMinority was dummy-coded (0 = NZ European/Pākehā, 1 = Minority); * $p < .05$; ** $p < .01$

Table 3. Multilevel Bayesian model examining the relationships between seven domains of area-level deprivation, individual endorsement of system-justifying beliefs, and individual collective action support.

	<i>b</i>	<i>SD(b)</i>	95% C.I.		<i>θ</i>	<i>SD(θ)</i>
			Lower 2.5%	Upper 2.5%		
Within Level:						
System Justification	1.115***	0.007	1.048	1.076	1.000	0.000
Ethnic System Justification	2.176***	0.014	2.048	2.105	1.000	0.000
Gender System Justification	1.932***	0.012	1.828	1.873	1.000	0.000
Collective Action Support	1.911***	0.013	1.885	1.938	1.000	0.000
Between Level:						
System Justification ON						
Employment	-0.016***	0.003	-0.022	-0.010	-0.371***	0.073
Income	-0.016***	0.004	-0.024	-0.008	-0.363***	0.099
Crime	-0.001	0.002	-0.005	0.004	-0.014	0.052
Housing	-0.008**	0.003	-0.013	-0.002	-0.157**	0.055
Health	-0.003	0.002	-0.007	0.002	-0.059	0.053
Education	0.019***	0.003	0.013	0.026	0.449***	0.083
Access	0.002	0.002	-0.002	0.006	0.043	0.050
Ethnic System Justification ON						
Employment	-0.039***	0.005	-0.048	-0.030	-0.421***	0.053
Income	-0.012	0.006	-0.024	0.000	-0.125	0.066
Crime	0.001	0.003	-0.006	0.007	0.008	0.033
Housing	0.000	0.004	-0.009	0.018	-0.003	0.040
Health	0.004	0.003	-0.003	0.010	0.039	0.035
Education	0.066***	0.005	0.057	0.076	0.720***	0.055
Access	0.017***	0.003	0.011	0.024	0.183***	0.035
Gender System Justification ON						
Employment	-0.036***	0.004	-0.044	-0.027	-0.430***	0.053
Income	-0.018***	0.006	-0.029	-0.007	-0.211***	0.068
Crime	0.001	0.003	-0.005	0.007	0.010	0.034
Housing	-0.009**	0.004	-0.017	-0.002	-0.098**	0.042
Health	0.003	0.003	-0.003	0.010	0.042	0.039
Education	0.056***	0.004	0.047	0.064	0.675***	0.057
Access	0.017***	0.003	0.011	0.023	0.199***	0.036
Collective Action Support ON						
Employment	-0.001	0.007	-0.015	0.014	-0.006	0.069
Income	0.007	0.008	-0.008	0.022	0.063	0.074
Crime	-0.003	0.004	-0.013	0.004	-0.024	0.038
Housing	0.032***	0.005	0.021	0.041	0.267***	0.044
Health	0.003	0.004	-0.005	0.009	0.026	0.034
Education	0.027***	0.010	0.007	0.042	0.258***	0.097
Access	-0.005	0.004	-0.014	0.004	-0.048	0.041
System Justification	-0.911***	0.203	-1.222	-0.419	-0.376***	0.083
Ethnic System Justification	0.706***	0.094	0.561	0.912	0.626***	0.059
Gender System Justification	-0.237***	0.104	-0.382	-0.017	-0.188***	0.082

Note. **p* < .05; ***p* < .01; ****p* < .001. CI 95% Credible Interval.

Table 4. Indirect effects of the seven domains of area-level deprivation on collective action support via individual endorsement of general, ethnic, and gender-based system justification.

	Collective action support			
	Indirect effect	SE	95% C.I.	
Lower 2.5%			Upper 2.5%	
System Justification (SJ)				
Employment → SJ	0.014***	0.004	0.006	0.022
Income → SJ	0.014***	0.005	0.005	0.025
Crime → SJ	0.001	0.002	-0.004	0.005
Housing → SJ	0.007**	0.003	0.002	0.013
Health → SJ	0.002	0.002	-0.002	0.007
Education → SJ	-0.017***	0.005	-0.027	-0.007
Access → SJ	-0.002	0.002	-0.006	0.002
Ethnic System Justification (ESJ)				
Employment → ESJ	-0.028***	0.005	-0.039	-0.019
Income → ESJ	-0.008	0.005	-0.018	0.000
Crime → ESJ	0.001	0.002	-0.004	0.005
Housing → ESJ	0.000	0.003	-0.006	0.006
Health → ESJ	0.003	0.002	-0.002	0.007
Education → ESJ	0.047***	0.008	0.036	0.064
Access → ESJ	0.012***	0.003	0.007	0.018
Gender System Justification (GSJ)				
Employment → GSJ	0.008**	0.004	0.001	0.014
Income → GSJ	0.004**	0.002	0.000	0.009
Crime → GSJ	0.000	0.001	-0.002	0.001
Housing → GSJ	0.002*	0.001	0.000	0.005
Health → GSJ	-0.001	0.001	-0.003	0.001
Education → GSJ	-0.013**	0.006	-0.021	-0.001
Access → GSJ	-0.004**	0.002	-0.007	0.000

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. CI 95% Credible Interval.

-level deprivation in Employment ($b = 0.014$, $SD = 0.004$, $p < 0.001$), Income ($b = 0.014$, $SD = 0.005$, $p < 0.001$), Housing ($b = 0.007$, $SD = 0.003$, $p = 0.003$), and Education ($b = -0.017$, $SD = 0.005$, $p < 0.001$) had specific indirect effects on collective action support via individual-level endorsement of general system justification. That is, these four domains of area-level deprivation were associated with individual-level system justification which, in turn, had a distinct relationship with collective action support.

Turning attention to ethnic-based system justification, area-level deprivation in Employment ($b = -0.028$, $SD = 0.005$, $p < 0.001$), Education ($b = 0.047$, $SD = 0.008$, $p < 0.001$), and Access deprivation ($b = 0.012$, $SD = 0.003$, $p < 0.001$) had specific indirect effects on collective action support via ethnic system justification. In other words, area-level deprivation in Employment, Education, and Access uniquely predicted individual-level endorsement of ethnic-based system justification which, in turn, had a distinct relationship with collective action support.

Finally, area-level deprivation in Employment ($b = 0.008$, $SD = 0.004$, $p = 0.009$), Income ($b = 0.004$, $SD = 0.002$, $p = 0.009$), Housing ($b = 0.002$, $SD = 0.001$, $p = 0.016$), Education ($b = -0.013$, $SD = 0.006$, $p = 0.009$), and Access ($b = -0.004$, $SD = 0.002$, $p = 0.009$) had specific indirect effects on collective action support through gender-based system justification. That is, these distinct domains of area-level deprivation were associated with gender-based system justification which,

in turn, was associated with collective action support.

DISCUSSION

Research on area-level deprivation has yet to elucidate its effects on individual-level endorsement of system justification, despite the latter being an important predictor of how people respond to inequality (e.g., see Jost et al., 2017; Osborne & Sibley, 2013). As such, the current study aimed to determine whether different domains of area-level deprivation correlate with three distinct individual-level measures of system justification. While system justification theory argues that individuals in disadvantaged areas may endorse higher levels of system justification (Jost et al., 2003), domains of area-level deprivation with different social consequences may have differential associations with individual differences in system justification.

As hypothesized, our results indicate that different domains of area-level deprivation are differentially associated with system justification. Specifically, as area-level Employment, Income, and Housing deprivation increased, individual-level endorsement of system justification decreased (although Housing deprivation was only associated with general and gender-based system justification). Conversely, as area-level deprivation in Education and Access increased, so, too, did individual-level endorsement of system justification (although Access deprivation was only reliably associated with ethnic and gender-based system justification). In respect to Employment and Income

deprivation, unemployment and low-income have detrimental, immediate effects on individuals (Rocha et al., 2017; Stafford & Marmot, 2003). Indeed, the most severe forms of area-level deprivation almost always impact the economic resources of individuals (see Exeter et al., 2017; Townsend, 1987). As such, the social consequences of Employment and Income deprivation may be more salient than any palliative benefit potentially received from endorsing the status quo. Likewise, Housing deprivation is associated with fiscal forms of individual and macro-level inequality (e.g., Dewilde, 2022), which may explain why—to some extent—a similar pattern emerges among area-level Employment, Income, and Housing deprivation.

Conversely, the impacts of area-level Education and Access deprivation may be perceived as less immediate or severe. Indeed, although the impacts of education deprivation on mental and physical health outcomes are significant, they are of a smaller magnitude than income or employment deprivation (e.g., Adams et al., 2009). As such, the motivation to justify the *status quo* may be greater than the need to promote social change, particularly given the palliative effects of system justification on well-being (Bahamondes et al., 2021; Bahamondes et al., 2019; Harding & Sibley, 2013) and the dependency individuals have on educational systems (van der Toorn et al., 2011). That said, future research is needed to identify the specific psychological mechanisms that transmit area-level Education and Access deprivation onto the endorsement of system justifying beliefs.

In addition to investigating the effects of area-level deprivation on system-justifying beliefs, we examined the associations between neighbourhood-level inequality and collective action support. Although only two of the seven area-level domains of deprivation (namely, Housing and Education deprivation) had direct associations with collective action support, five of the seven domains had reliable *indirect* effects on collective action support via system justification. Specifically, individuals nested in neighbourhoods with high (vs low) levels of Employment, Income, and Housing deprivation were lower in individual endorsement of system justification which, in turn, was associated with higher collective action support. In contrast, individuals in neighbourhoods with high (vs low) levels of Education deprivation were *higher* in system justification which, in turn, was associated with *lower* support for collective action. Similar patterns emerged for gender-based system justification, although the indirect effect of area-level Access deprivation on collective action support via gender system justification was also significant. In sum, our results not only demonstrate the unique associations between neighbourhood-level inequality and system justification, but also the indirect paths through which neighbourhood-level deprivation impacts support for collective action and social change.

Area-level deprivation in Employment, Education and Access also had indirect effects on collective action support via ethnic system justification. Unexpectedly, ethnic-based system justification correlated positively (instead of negatively) with collective action support. That is, individuals in neighbourhoods high in

Employment deprivation were lower in ethnic-based system justification which, in turn, was associated with *lower* support for collective action. In contrast, individuals in neighbourhoods high in Education and Access deprivation were higher in ethnic-based system justification, which, in turn, was associated with *higher* collective action support.

That ethnic-based system justification predicted greater support for collective action is somewhat surprising given that system justification often *reduces* support for social change (Jost et al., 2017). However, believing that the system is fair across ethnic groups may promote system-*supporting* forms of collective action (i.e., collective action on behalf of the dominant group, see Osborne et al., 2019). Because our sample was predominately New Zealand European (i.e., 80.3% of participants identified as New Zealand European), our measure of ethnic-based system justification and collective action support may have been tapping into protests that further the interest of the dominant ethnic group in New Zealand. Future research should further investigate the distinct consequences of ethnic-based system justification (relative to other perceptions of fairness) and how this may impact social change.

The current study builds upon prior area-level deprivation and system justification research by identifying how differences in macro-level domains of inequality correlate with individual belief systems. Within both the area-level deprivation and system justification literatures, research argues that different forms of deprivation have differential impacts on how people respond to inequality (Exeter et al., 2017; Jost, 2019). However, area-level deprivation research has predominantly focused on investigating the effects of macro-level inequality on health outcomes, rather than social processes (e.g., Exeter et al., 2019). Additionally, system justification research has largely focused on the impacts of individual- and group-level inequality on the endorsement of system justification, rather than on how macro-level inequality shapes these beliefs. As such, the current study's focus on distinct domains of macro-level inequality fills an important gap in the literature by illustrating how the macro-level environment critically shapes people's personal endorsement (or rejection) of the status quo.

Notably, the current study provides insights into the forms of macro-level inequality that may *promote* the endorsement of system justification. System justification is a significant predictor of how people respond to inequality, as perceptions of fairness within systems predict reduced support for system-challenging collective action and social change (e.g., see Jost, 2019; Jost & Hunyady, 2005). As such, understanding the conditions under which people are more likely to defend the social systems that disadvantage them is essential to understanding when and why individuals do not engage in collective action (Osborne et al., 2019). Importantly, we cannot discount the significance of these findings in the New Zealand context. Indeed, our measures of area-level deprivation were constructed in New Zealand *for* New Zealand and provide crucial insights into the ways New Zealanders experience macro-level inequality (Exeter et al., 2017). While combatting all forms of area-

level deprivation is essential for creating a more equitable society, the current study suggests that living in areas with high levels of Education—and, to some extent, Access—deprivation correlates positively with the endorsement of system justification. In turn, various forms of system justification generally reduce support for progressive social change. These associations suggest that increasing political knowledge and reducing educational and access deficits at the macro-level can help increase engagement in collective responses to inequality that foster more equitable conditions for New Zealanders.

Strengths, Limitations, and Future Directions

In addition to theoretical and practical implications, the current study has high external validity due to our use of a large, nation-wide random sample. Furthermore, the IMD is an objective, weighted measure of area-level deprivation in New Zealand that allows for its seven domains to be used individually to predict health and social outcomes (see Exeter et al., 2017). As such, there is notable confidence in the generalisability of our results. In particular, the distinct relationships between different domains of the IMD and endorsement of multiple measures of system justification highlights the need to consider the distinct forms of macro-level inequality that may promote (or impede) different social processes.

Despite these strengths, it is important to note that, as with all correlational studies, one should be cautious about inferring a causal relationship between our variables of interest. The current study does not claim that individuals in areas of high Education deprivation will always support their social system, nor that individuals in areas of high Employment and Income deprivation will not. Similarly, differences in area-level deprivation only accounted for a small percentage of

variation in individual-level endorsement of system justification, highlighting that macro-level inequality is not the only factor shaping individual-levels of system justification and, in turn, support for social change. That said, our results identify the different aspects of area-level deprivation that reliably correlate with the individual-level endorsement of system justification. As such, future research should investigate the nature of these associations by determining the impact *changes* in macro-level inequality have on the endorsement of system justification. Additionally, directly investigating the mediators for this relationship (e.g., dependency on social systems) would help solidify our claims that area-level Education and Access deprivation foster greater endorsement of beliefs that reinforce the status quo.

Conclusion

The current study investigated whether different domains of area-level deprivation were associated with differences in the individual-level endorsement of system justification. Our results suggest that individuals in areas of high (relative to low) Employment, Income, and Housing deprivation endorsed lower levels of system justification. Conversely, individuals in areas of high (relative to low) Education and Access deprivation endorsed higher levels of system justification. Critically, these distinct forms of area-level deprivation were indirectly associated with collective action support via system justification. As such, our results demonstrate how different forms of macro-level inequality can promote (or impede) ideologies that reinforce the status quo. In this respect, the current study provides a novel contribution to both area-level deprivation and system justification research by illustrating how the macro-level environment may foster (or undermine) individual-level psychologies that have a notable impact on social change.

References

- Abas, M. A., Vanderpyl, J., Robinson, E., Prou, T. L., & Crampton, P. (2006). Socio-economic deprivation and duration of hospital stay in severe mental disorder. *British Journal of Psychiatry*, 188(6), 581-582. <https://doi.org/10.1192/bjp.bp.104.007476>
- Abrams, D., & Grant, P. R. (2012). Testing the social identity relative deprivation (SIRD) model of social change: The political rise of Scottish nationalism. *British Journal of Social Psychology*, 51(4), 674-689. <https://doi.org/10.1111/j.2044-8309.2011.02032.x>
- Adams, R. J., Howard, N., Tucker, G., Appleton, S., Taylor, A. W., Chittleborough, C., Gill, T., Ruffin, R. E., & Wilson, D. H. (2009). Effects of area deprivation on health risks and outcomes: a multilevel, cross-sectional, Australian population study. *International Journal of Public Health*, 54(3), 183-192. <https://doi.org/10.1007/s00038-009-7113-x>
- Andrews, M. R., Tamura, K., Claudel, S. E., Xu, S., Ceasar, J. N., Collins, B. S., Langerman, S., Mitchell, V. M., Baumer, Y., & Powell-Wiley, T. M. (2020). Geospatial analysis of neighborhood deprivation index (NDI) for the United States by county. *Journal of Maps*, 16(1), 101-112. <https://doi.org/10.1080/17445647.2020.1750066>
- Atkinson, J., Salmond, C., & Crampton, P. (2014). *NZDep2013 index of deprivation*. Department of Public Health, University of Otago.
- Bahamondes, J., Sengupta, N. K., Sibley, C. G., & Osborne, D. (2021). Examining the relational underpinnings and consequences of system-justifying beliefs: Explaining the palliative effects of system justification. *British Journal of Social Psychology*, 60, 1027-1050. <https://doi.org/10.1111/bjso.12440>
- Bahamondes, J., Sibley, C. G., & Osborne, D. (2019). “We look (and feel) better through system-justifying lenses”: System-justifying beliefs attenuate the well-being gap between the advantaged and disadvantaged by reducing perceptions of discrimination. *Personality and Social Psychology Bulletin*, 45(9), 1391-1408. <https://doi.org/10.1177/0146167219829178>
- Bell, N., & Hayes, M. V. (2012). The Vancouver Area Neighbourhood Deprivation Index (VANDIX): A Census-based tool for assessing small-area variations in health status. *Canadian Journal of Public Health* 103, 28-32. <https://doi.org/10.2307/41995686>
- Breeze, E., Jones, D., Wilkinson, P., Bulpitt, C., Grundy, C., Latif, A., & Fletcher, A. (2005). Area deprivation, social class, and quality of life among people aged 75 years and

- over in Britain. *International Journal of Epidemiology*, 34(2), 276-283. <https://doi.org/10.1093/ije/dyh328>
- Chen, W.-H., Myles, J., & Picot, G. (2012). Why have poorer neighbourhoods stagnated economically while the richer have flourished? Neighbourhood income inequality in Canadian cities. *Urban Studies*, 49(4), 877-896. <https://doi.org/10.1177/0042098011408142>
- Cheung, R. M., Noel, S., & Hardin, C. D. (2011). Adopting the system-justifying attitudes of others: Effects of trivial interpersonal connections in the context of social inclusion and exclusion. *Social Cognition*, 29(3), 255-269. <https://doi.org/10.1521/soco.2011.29.3.255>
- Christie, S. M. L., & Fone, D. L. (2003). Does car ownership reflect socio-economic disadvantage in rural areas? A cross-sectional geographical study in Wales, UK. *Public Health*, 117(2), 112-116. [https://doi.org/10.1016/s0033-3506\(02\)00027-6](https://doi.org/10.1016/s0033-3506(02)00027-6)
- Cronin, T. J., Levin, S., Branscombe, N. R., van Laar, C., & Tropp, L. R. (2012). Ethnic identification in response to perceived discrimination protects well-being and promotes activism: A longitudinal study of Latino college students. *Group Processes & Intergroup Relations*, 15(3), 393-407. <https://doi.org/10.1177/1368430211427171>
- Dewilde, C. (2022). How housing affects the association between low income and living conditions-deprivation across Europe. *Socio-Economic Review*, 20(1), 373-400. <https://doi.org/10.1093/ser/mwab003>
- Exeter, D. J., Shackleton, N., Browne, M., Zhao, J., Lee, A., & Crengle, S. (2019). Different domains of deprivation and their relationship with obesity in New Zealand 4-year-old children. *Pediatric Obesity*, 14(8), e12520. <https://doi.org/10.1111/ijpo.12520>
- Exeter, D. J., Zhao, J., Crengle, S., Lee, A., & Browne, M. (2017). The New Zealand Indices of Multiple Deprivation (IMD): A new suite of indicators for social and health research in Aotearoa, New Zealand. *PLOS ONE*, 12(8), e0181260. <https://doi.org/10.1371/journal.pone.0181260>
- Festinger, L. (1957). *A theory of cognitive dissonance* (Vol. 2). Stanford university press.
- Harding, J. F., & Sibley, C. G. (2013). The palliative function of system justification: Concurrent benefits versus longer-term costs to wellbeing. *Social indicators research*, 113(1), 401-418. <https://doi.org/10.1007/s11205-012-0101-1>
- Harmon-Jones, E., & Harmon-Jones, C. (2007). Cognitive Dissonance Theory after 50 Years of development. *Zeitschrift für Sozialpsychologie*, 38(1), 7-16. <https://doi.org/10.1024/0044-3514.38.1.7>
- Hennes, E. P., Nam, H. H., Stern, C., & Jost, J. T. (2012). Not all ideologies are created equal: Epistemic, existential, and relational needs predict system-justifying attitudes. *Social Cognition*, 30(6), 669-688. <https://doi.org/10.1521/soco.2012.30.6.669>
- Henry, P. J., & Saul, A. (2006). The development of system justification in the developing world. *Social Justice Research*, 19(3), 365-378. <https://doi.org/10.1007/s11211-006-0012-x>
- Herbert, D. T. (1975). Urban Deprivation: Definition, measurement and spatial qualities. *The Geographical Journal*, 141(3), 362. <https://doi.org/10.2307/1796471>
- Hoever, W. J., Bulbulia, J., & Sibley, C. G. (2013). Does poverty predict religion? *Religion, Brain & Behavior*, 3(3), 185-200. <https://doi.org/10.1080/2153599x.2012.762937>
- Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2005). Individual, household and neighborhood socioeconomic status and mortality: a study of absolute and relative deprivation. *Social Science & Medicine*, 60(5), 989-997. <https://doi.org/10.1016/j.socscimed.2004.06.047>
- Jost, J. T. (2019). A quarter century of system justification theory: Questions, answers, criticisms, and societal applications. *British Journal of Social Psychology*, 58(2), 263-314. <https://doi.org/10.1111/bjso.12297>
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, 33(1), 1-27. <https://doi.org/10.1111/j.2044-8309.1994.tb01008.x>
- Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology*, 25(6), 881-919. <https://doi.org/10.1111/j.1467-9221.2004.00402.x>
- Jost, J. T., Becker, J. C., Osborne, D., & Badaan, V. (2017). Missing in (collective) action: Ideology, system justification, and the motivational antecedents of protest behavior. *Current Directions in Psychological Science*, 26(2), 99-108. <https://doi.org/10.1177/0963721417690633>
- Jost, J. T., & Burgess, D. (2000). Attitudinal ambivalence and the conflict between group and system justification motives in low status groups. *Personality and Social Psychology Bulletin*, 26(3), 293-305. <https://doi.org/10.1177/0146167200265003>
- Jost, J. T., & Hunyady, O. (2003). The psychology of system justification and the palliative function of ideology. *European Review of Social Psychology*, 13(1), 111-153. <https://doi.org/10.1080/10463280240000046>
- Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science*, 14(5), 260-265. <https://doi.org/10.1111/j.0963-7214.2005.00377.x>
- Jost, J. T., Pelham, B. W., Sheldon, O., & Ni Sullivan, B. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology*, 33(1), 13-36. <https://doi.org/10.1002/ejsp.127>
- Kay, A. C., & Jost, J. T. (2003). Complementary justice: Effects of "poor but happy" and "poor but honest" stereotype exemplars on system justification and implicit activation of the justice motive. *Journal of personality and social psychology*, 85(5), 823-837. <https://doi.org/10.1037/0022-3514.85.5.823>
- Lewis, N. M., Friedrichs, M., Wagstaff, S., Sage, K., Lacross, N., Bui, D., McCaffrey, K., Barbeau, B., George, A., Rose, C., Willardson, S., Carter, A., Smoot, C., Nakashima, A., & Dunn, A. (2020). Disparities in COVID-19 Incidence, Hospitalizations, and Testing, by Area-Level Deprivation — Utah, March 3–July 9, 2020. *MMWR. Morbidity and Mortality Weekly Report*, 69(38), 1369-1373. <https://doi.org/10.15585/mmwr.mm6938a4>
- Madhav, K. C., Oral, E., Straif-Bourgeois, S., Rung, A. L., & Peters, E. S. (2020). The effect of area deprivation on COVID-19 risk in Louisiana. *PLOS ONE*, 15(12), e0243028. <https://doi.org/10.1371/journal.pone.0243028>
- Noble, M., Wright, G., Smith, G., & Dibben, C. (2006). Measuring Multiple Deprivation at the Small-Area Level. *Environment and Planning A: Economy and Space*, 38(1), 169-185. <https://doi.org/10.1068/a37168>
- Osborne, D., Becker, J. C., Bahamondes, J., & Garcia-Sanchez, E. (2022). The political psychology of

- inequality: Why raising rates of economic inequality affect our health and democracy. In D. Osborne & C. G. Sibley (Eds.), *Cambridge handbook of political psychology*. Cambridge University Press.
- Osborne, D., Jost, J. T., Becker, J. C., Badaan, V., & Sibley, C. G. (2019). Protesting to challenge or defend the system? A system justification perspective on collective action. *European Journal of Social Psychology*, 49(2), 244-269. <https://doi.org/10.1002/ejsp.2522>
- Osborne, D., & Sibley, C. G. (2013). Through rose-colored glasses: System-justifying beliefs dampen the effects of relative deprivation on well-being and political mobilization. *Personality and Social Psychology Bulletin*, 39(8), 991-1004. <https://doi.org/10.1177/0146167213487997>
- Pickett, K., & Wilkinson, R. (2010). *The spirit level: Why equality is better for everyone*. Penguin UK.
- Rocha, V., Ribeiro, A. I., Severo, M., Barros, H., & Fraga, S. (2017). Neighbourhood socioeconomic deprivation and health-related quality of life: A multilevel analysis. *PLOS ONE*, 12(12), e0188736. <https://doi.org/10.1371/journal.pone.0188736>
- Saez, E., & Zucman, G. (2016). Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data. *The Quarterly Journal of Economics*, 131(2), 519-578. <https://doi.org/10.1093/qje/qjw004>
- Salmond, C., Crampton, P., & Atkinson, J. (2007). *NZDep2006 index of deprivation*. The Department of Public Health, University of Otago.
- Sears, D. O., & Funk, C. L. (1990). Self-interest in Americans' political opinions. In J. J. Mansbridge (Ed.), *Beyond self-interest* (pp. 147-170). The University of Chicago Press.
- Sengupta, N. K., Greaves, L. M., Osborne, D., & Sibley, C. G. (2017). The sigh of the oppressed: The palliative effects of ideology are stronger for people living in highly unequal neighbourhoods. *British Journal of Social Psychology*, 56(3), 437-454. <https://doi.org/10.1111/bjso.12192>
- Sengupta, N. K., Osborne, D., & Sibley, C. G. (2015). The status-legitimacy hypothesis revisited: Ethnic-group differences in general and dimension-specific legitimacy. *British Journal of Social Psychology*, 54(2), 324-340. <https://doi.org/10.1111/bjso.12080>
- Shackleton, N., Broadbent, J. M., Thornley, S., Milne, B. J., Crengle, S., & Exeter, D. J. (2018). Inequalities in dental caries experience among 4-year-old New Zealand children. *Community Dentistry and Oral Epidemiology*, 46(3), 288-296. <https://doi.org/10.1111/cdoe.12364>
- Sibley, C. G., Harré, N., Hoverd, W. J., & Houkamau, C. A. (2011). The gap in the subjective wellbeing of Māori and New Zealand Europeans widened between 2005 and 2009. *Social indicators research*, 104(1), 103-115. <https://doi.org/10.1007/s11205-010-9729-x>
- Skapinakis, P., Lewis, G., Araya, R., Jones, K., & Williams, G. (2005). Mental health inequalities in Wales, UK: Multi-level investigation of the effect of area deprivation. *British Journal of Psychiatry*, 186(5), 417-422. <https://doi.org/10.1192/bjp.186.5.417>
- Stafford, M., & Marmot, M. (2003). Neighbourhood deprivation and health: does it affect us all equally? *International Journal of Epidemiology*, 32(3), 357-366. <https://doi.org/10.1093/ije/dyg084>
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Brooks/Cole.
- Townsend, P. (1987). Deprivation. *Journal of Social Policy*, 16(2), 125-146. <https://doi.org/10.1017/s0047279400020341>
- van der Toorn, J., Tyler, T. R., & Jost, J. T. (2011). More than fair: Outcome dependence, system justification, and the perceived legitimacy of authority figures. *Journal of Experimental Social Psychology*, 47(1), 127-138. <https://doi.org/10.1016/j.jesp.2010.09.003>
- Yen, H. (2009, September 30). US income gap widens as poor take hit in recession. *The Seattle Times*. <http://www.seattletimes.com/>
- Zhao, J., & Exeter, D. J. (2016). Developing intermediate zones for analysing the social geography of Auckland, New Zealand. *New Zealand Geographer*, 72(1), 14-27. <https://doi.org/10.1111/nzg.12110>

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Consistency and Change in Political Party Support Across Three Consecutive New Zealand Elections: Who Switched and Who Stayed Loyal?

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In this study we decomposed New Zealanders' support for the National and Labour parties from 2011 – 2020 by examining the within-person trajectories of change in party support over (and annually within) three consecutive election cycles. To do so, we applied latent class growth curve modelling to nine waves of the New Zealand Attitudes and Values Study, a large annual probability survey of New Zealand adults ($N = 5,213$). We identified a Core National class (50.5%), who tended to consistently support National but oppose Labour, and a Core Labour class (39.1%), who consistently supported Labour but opposed National. The Switcher class (10.4%), who initially preferred National over Labour, depolarized during each election cycle before reversing support for the parties completely from 2017 – 2020. Switchers had unique characteristics compared to the core supporter classes, including higher levels of openness to experience. These findings add to understandings of how party support changes and for whom.

Keywords: *Electoral volatility, New Zealand; Partisanship; Polarization; Elections*

Introduction

Partisanship and polarization are enduring topics in political research. Notably, these concepts emphasise stable and persistent party attachments paired with growing opposition to political out-parties (Iyengar et al. 2012). Yet, as much as this research views voters as clearly divided and committed partisans, political power continues to shift between major competing parties across political systems—a fickle oscillation that belies the stability of partisanship. In New Zealand, the competing center-right and center-left National and Labour parties have enjoyed extended periods of popularity and governance. The National party, aided by the popularity of leader John Key, successfully contested three general elections from 2008 – 2014. Yet, the Labour party picked up support under leader Jacinda Ardern, winning the 2017 election, followed by an historic 2020 election win. During each of these periods of governance, one party's success came at the other's expense, with Labour support crumbling under Key's National government, and National party support collapsing in turn under Ardern's Labour government, particularly in the Covid-19 environment.

Although these broad trends can be observed through the performance of each party by way of vote share at national elections (see Figure 1), they may mask specific trajectories of change over time among different subgroups of New Zealanders. For example, whereas aggregate voting data suggest New

Zealanders have increased their support for Labour in recent years, there may be subgroups of New Zealanders who have remained committed National party supporters, swayed across party lines, or even groups who may be increasingly polarized in their views of the two major parties.

This study takes a novel approach to examining change in attitudes toward political parties in New Zealand by identifying and elucidating different latent groups of people according to their within-person trajectories of change in support for the National and Labour parties between 2011 – 2020. We model these rates of change using data from the New Zealand Attitudes and Values Study, a large-scale annually based national probability panel study of registered voters in New Zealand. After establishing the key latent classes that characterise the different rates of change in party support,

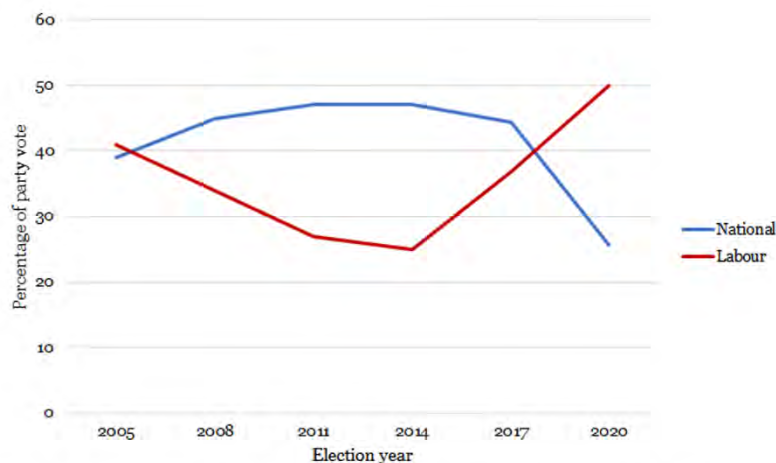


Figure 1. Percentage of total party vote gained by the National and Labour parties across recent national elections in New Zealand. Data obtained from <https://www.electionresults.govt.nz/>.

we validate the classes by comparing their party vote proportions in the 2014, 2017, and 2020 elections. We then examine the demographic, personality, and political attitudes that predict membership within each of these distinct classes.

Trends in party support over time

While public opinion has shifted between the National and Labour parties over time, some New Zealanders likely maintained steady commitment to one party, but opposition to the other. These groups would represent the core partisans who stick with their respective party through its ups and downs. Indeed, partisanship is highly stable in the US (e.g., Green & Palmquist, 1994) and research suggests that, when measured as the percentage of people who feel close to a given party, partisanship is roughly as common in New Zealand (i.e., around 56%; Dalton & Weldon, 2007). Consistent with these findings, Satherley et al. (2021) identified high levels of test-retest stability in New Zealanders' support for the main political parties between 2012 – 2017, suggesting it is uncommon for attitudes toward the parties to drastically change over time. As such, we expect to identify two classes of New Zealanders whose support for the National and Labour parties remain relatively steady and polarized (with one class supporting National and opposing Labour, and the opposite for the other) over time, although it is unclear just what percentage of the population these classes would encompass.

Whereas research on partisanship emphasises a stable commitment among voters to a given party, recent work in the US demonstrates that how party attitudes manifest changes over time. Specifically, researchers have identified increasing levels of affective polarization, whereby aggregate ratings of warmth toward in-parties and out-parties have grown increasingly apart over the past 40 years (Hetherington, 2001), particularly due to increasingly negative out-party ratings (Iyengar et al., 2012). Research on affective polarization has since proliferated, with many viewing it as indicative of, and closely related to, a hostile and extreme political climate in the US (Finkel et al., 2020). However, attention has also been drawn to whether similar trends are occurring globally. Gidron et al. (2020; see also Lauka et al., 2018) argue that affective polarization in the US is actually at a similar level or lower than in many other nations, including New Zealand, when comparing the average difference in thermometer ratings of competing parties. They thus note that polarization is not a uniquely US-based phenomenon in terms of absolute levels. Further, whereas some researchers have suggested New Zealand is one of the few countries where affective polarization is increasing (Boxell et al., 2019), Gidron et al. (2020) showed that affective polarization has actually been relatively stable in New Zealand between 1995 – 2015, with perhaps periods of increasing but then decreasing polarization.

Increased affective polarization among the public is commonly attributed to growing polarization among political elites (Gidron et al., 2020; Hetherington, 2001; Lupu, 2015). While it is unclear to what extent New Zealand political elites have polarized, research suggests New Zealanders view their political system as rather ideologically polarized (Dalton, 2008), and the National

and Labour parties as further right and left of centre between 2008 – 2014 (Vowles et al., 2017). Although affective polarization has been hotly researched in the US, research in New Zealand is more limited. Affective polarization may be dependent on the specific periods examined, and researchers have yet to examine whether affective polarization may be unique to a sub-group of the population rather than a broader trend, both in New Zealand and globally.

Finally, in direct contrast to the potential sub-groups of voters highlighted by the partisanship and affective polarization literatures, there remains a subset of voters responsible for the shifts in vote share between parties over time. Despite their importance to electoral outcomes, these voters (e.g., fence sitters, swing, and floating voters) are generally poorly understood (Mayer, 2007). Research has seldom examined how people's attitudes toward major parties change over time, with emphasis on aggregate indices of partisan stability which are unable to account for voters who shift preference. Rather, researchers have examined behavioural patterns of vote change (volatility) over time between two or more elections (e.g., Dassonneville, 2016; Kuhn, 2012; van der Meer et al., 2016; Wurthmann et al., 2021). For example, Kuhn (2009) found that 25% of respondents to the Swiss Household-Panel between 1999 and 2007 changed their party vote across the political divide at least once. However, specific estimates of vote switching will depend on the context examined, and do not capture the nature of attitude change toward political parties over time (for example, vote switching may be strategic in multiparty systems, or capture only a very brief shift—patterns that require participants responding to multiple election cycles to identify).

Studies examining shifts in vote preference (or reported vote) over time have identified a number of factors associated with the propensity to shift. For example, dissatisfaction with party and economic performance predicts shifts away from the incumbent government (Dassonneville et al., 2016; Hui & Federico, 2021). These findings suggest a rational thought process behind switching votes, but others have questioned the political sophistication of switchers. Dassonneville (2012) found that political interest predicts increased volatility between elections, but decreased volatility within election campaigns, arguing that those who are more sophisticated make their decision to switch before election campaigns begin. Low levels of political efficacy also tend to be associated with vote switching, thought to be due to disaffection with a party (Dassonneville, 2012; Dejaeghere & Dassonneville, 2012).

Voter predispositions, specifically personality traits, have received more limited focus as precursors of vote switching, yet have been widely researched in relation to general political attitudes (Gerber et al., 2012). For example, one of the most robust findings in the personality-politics literature has been the negative association between openness to experience and conservative political orientation (see Osborne et al., 2021). Bakker et al. (2016) found that those higher in openness to experience were more likely to switch their vote over time in Denmark and the UK, alongside lower levels of extraversion in Denmark. This effect presumably

reflects the greater willingness of those higher in openness to experience to consider and evaluate a variety of political ideas and policies, rather than rigidly adapting one particular frame. Consistent with this interpretation, Gerber et al. (2012) showed that lower levels of openness to experience, but also higher levels of extraversion and agreeableness, was associated with stronger partisan identification. However, Erisen and Blais (2016) showed that openness to experience correlates positively with strategic voting, which raises questions over the extent to which vote shifts reflect changing attitudes toward the parties, or perhaps strategic concerns. Thus, early evidence suggests personality may predict how committed voters are to parties, but more research on the robustness of these effects is necessary.

Overview of the current study

Here, we apply novel models of attitude change over time to examine classes of New Zealand voters based on their trajectories of support for the National and Labour parties over three election cycles. Our models investigate the possibility that different groups of New Zealanders differ in the rate of change in their support over time (whether their support is constant, increasing, or decreasing). In this way, it aligns with, and allows for, the potential detection of multiple types voters identified in the literature (i.e., partisans, the affectively polarizing, and switchers) rather than focusing on aggregate trends (e.g., as in the affective polarization literature), or different groups independently. Our approach differs from past research by focusing on within-person trends in support for the parties over three election cycles, rather than focusing on vote changing between elections. In this way, the results speak specifically to change in support, and avoid capturing strategic voting or specific one-off changes in vote.

Our analysis covers three election cycles from 2011 – 2014, 2014 – 2017, and 2017 – 2020. The National party was in government and received a considerable share of the vote following the 2011 (47% vs. Labour's 27%) and 2014 (47% vs. Labour's 25%) election cycles. For the 2017 general election, leadership changes for both parties saw a small decrease in the National party vote share (44%) and a large increase in the Labour party vote share (37%) under new leader Jacinda Ardern. Although the Labour party was still able to form a government from 2017 due to support from New Zealand First, the Labour party, and particularly Ardern, gained support for her handling of numerous national issues across the cycle. This culminated with the party's Covid-19 response, which saw the Labour party vote share soar (50%) and the National party vote share plummet (26%) to a record result at the 2020 general election. Thus, the National party was generally favoured over the period examined, but aggregate levels of support shifted in favour of Labour from 2017.

Here, we expected to identify a class of National supporters and a class of Labour supporters that maintained consistent and high support for their party (but opposition toward the other party) over time, reflecting the committed partisans. We also expected to identify a class characterised by generally decreasing levels of support for the National party, and increasing support for the Labour party, accounting for the aggregate shifts in

support for these two parties across the period. Given the increasing rates of polarization found overseas, we may also identify the presence of such classes (i.e., increasing levels of support for one party and opposition to the other).

Finally, we validate our identified classes by examining voting proportions for each class across elections, and compare demographic, personality, and political attitudes across classes. Although dependent on identifying the classes, we hypothesised that switchers would have higher levels of openness to experience than committed supporters. As partisanship is often thought to reflect a psychological attachment to a party (e.g., Campbell et al., 1960), we also hypothesised that those higher in political identity centrality (i.e., those who feel their political beliefs are important to their sense of self) would be less likely to change their party support over time. Analyses controlled for gender, age, and ethnicity, as well as political orientation, satisfaction with the (2011 National party) government (which, broadly, are expected to predict membership in the National and Labour supporter classes at either extreme, relative to a switcher class), and political efficacy.

METHODS

Procedure

This study used Waves 3 to 11 (2011 – 2020) of the New Zealand Attitudes and Values Study (NZAVS), an annual longitudinal national probability of New Zealand adults sampled from the New Zealand electoral roll. The Time 3 NZAVS contained responses from 6,884 participants (3,918 retained from one or more previous wave, 2,966 new additions from booster sampling, and 4 unmatched participants or unsolicited opt-ins). The booster for the Time 3 NZAVS was non-random and recruited through a major New Zealand newspaper. Further booster sampling was conducted at Time 4 (2012), Time 5 (2013), Time 8 (2016), and Time 10 (2018) through the New Zealand electoral roll. The sample size by Time 11 (2019 – 2020) was 42,684. Specific details on the sampling procedure at each wave and retention across waves can be found in Sibley (2021).

Participants

The Time 3 (2011) NZAVS contained responses from 6,884 individuals, of which 63% were women, and with an average age of 51 (range 18 – 96; SD: 16). In terms of ethnicity, 75% were NZ European, 11% Māori, 4% Asian, and 3% Pacific. The Time 11 (2019 – 2020) contained 42,684 responses, of which 64% women, 93% were NZ European, 10% Māori, 4% Asian, and 3% Pacific (participants could report more than one ethnicity). To be included in the analysis, participants had to complete at least 8 of the 9 waves from Time 3 – Time 11, leaving an overall sample size of 5,213 (after also accounting for missing data on the dependent variables).

Measures

The indicator variables for the latent class piecewise growth-curve models were ratings of support for the National and Labour parties. Participants were asked to rate how strongly they opposed or supported each party on a scale from 1 (*Strongly oppose*) to 7 (*Strongly support*).

We also examined predictors of latent class membership, including personality and political attitudes. Big-Five personality was assessed with the 20-item mini IPIP (Sibley et al., 2011). Participants rated how accurately each statement described them on a scale from 1 (*Very inaccurate*) to 7 (*Very accurate*). Example items included “Am the life of the party” (Extraversion, $\alpha = .75$), “Sympathise with others’ feelings” (Agreeableness, $\alpha = .69$), “Get chores done right away” (Conscientiousness, $\alpha = .65$), “Have frequent mood swings” (Neuroticism, $\alpha = .72$), and “Have a vivid imagination” (Openness to Experience, $\alpha = .70$).

In terms of political attitudes, participants rated their political orientation on a scale from 1 (*Extremely liberal*) to 7 (*Extremely conservative*), and their satisfaction with “the performance of the current New Zealand government” on a scale from 0 (*Completely dissatisfied*) to 10 (*Completely satisfied*). Political identity centrality was measured with the item “how important are your political beliefs to how you see yourself?” on a scale from 1 (*Not important*) to 7 (*Very important*). Political efficacy was measured with the item “the average citizen can have an influence on government decisions” (1 = *Strongly disagree*, 7 = *Strongly agree*). With the exception of political identity centrality and political efficacy, all items were measured at the first wave (Time 3/2011) when the National party was in power. Political identity centrality and political efficacy were measured at Time 5, as this was the first wave at which they were included in the study.

Analytic strategy

To identify groups of New Zealanders based on their rates of change in support for the National and Labour parties, we conducted latent class piecewise growth-curve models (Bollen & Curran, 2006). Standard growth-curve models examine the average rate of change over time in a given outcome or outcomes, based on the growth over time within each individual observation in the sample. By estimating these growth-curves as latent classes, our models account for the possibility that there are different groups that are developing at different rates over time (e.g., a portion of the sample may be increasing in the outcome over time, whereas other groups may be decreasing or unchanged in the outcome measure over time). This approach allows us to detect whether a segment of the population is polarizing in their support over time, whereas another may be more partisan, and another still may switch party preferences. We estimated piecewise slopes whereby a different slope was estimated within each class for each of three consecutive election cycles (2012–2014, 2015–2017, and 2018–2020). This accounted for the possibility that the rate of change in support for each party could differ across election cycles, and, in particular, may be influenced by elections. Finally, within-class intercepts were free to vary while slope variances were fixed to zero. Thus, our approach assumes that, to the extent that there are individual differences in rates of change within each election cycle (i.e., the random effect of each slope), this variability is reflected in the *different latent classes*. Put another way, individuals within classes could vary in their

absolute support for each party, but the classes themselves were defined centrally by the rate of change in support over time.

RESULTS

Model estimation and selection

We specified models with between 2 – 5 classes to account for various possible patterns of change in support over the period, with model fit statistics displayed in Table 1. Model entropy, which indicates better class separation at values closer to 1, was highest for the two-class solution, and notably lower for the four-class solution. Yet, decreases in AIC and BIC values indicated better model fit with each additional class. Comparing the two and three-class model solutions, which both attained similarly high entropy, the three-class solution produced a marginally higher minimum classification probability across the classes (0.82 – 0.94; see Table 2), than the two-class solution (.81 and .98), and inspection of the classes indicated the presence of an additional theoretically meaningful class. We opted for the three-class solution which parsimoniously summarized the patterns of change in New Zealanders’ party support over the period.

Model results

Of the three estimated classes, the ‘Core National Class’ was the largest (n = 2,634; 50.5% of the sample) followed by the ‘Core Labour Class’ (n = 2,038; 39.1% of the sample), with the ‘Switcher Class’ (n = 541; 10.4%) comprising the lowest proportion of the sample. The trajectory of change over time in support for the National and Labour parties which defines the classes is displayed in Figure 2, with regression coefficients present in Table 3.

As shown in Figure 2, the Core National Class was defined by high levels of support for the National party compared to support for the Labour party, and support for these parties remained relatively stable over the 2012 – 2014 and 2015 – 2017 periods. However, the 2018 – 2020 period saw a decline in support for the National party and increase in support for the Labour party, although support for the National party remained noticeably higher. The opposite pattern was observed for the Core Labour Class, with support for the Labour party much higher than support for the National party. Support for both parties was again relatively stable from 2012 – 2017, but Labour party support increased, and National party support decreased, in the 2018 – 2020 period.

Finally, the Switcher Class exhibited the largest amount of change in support for the parties over time. This class was initially more supportive of the National party on average, but the difference in support for each party was less than that exhibited by the other classes. The

Table 1. Model fit indices for each model specified.

Number of classes	AIC	BIC	Entropy
2	250451.716	250714.073	.839
3	248109.274	248463.455	.825
4	246535.041	246961.370	.725
5	245706.524	246205.001	.799

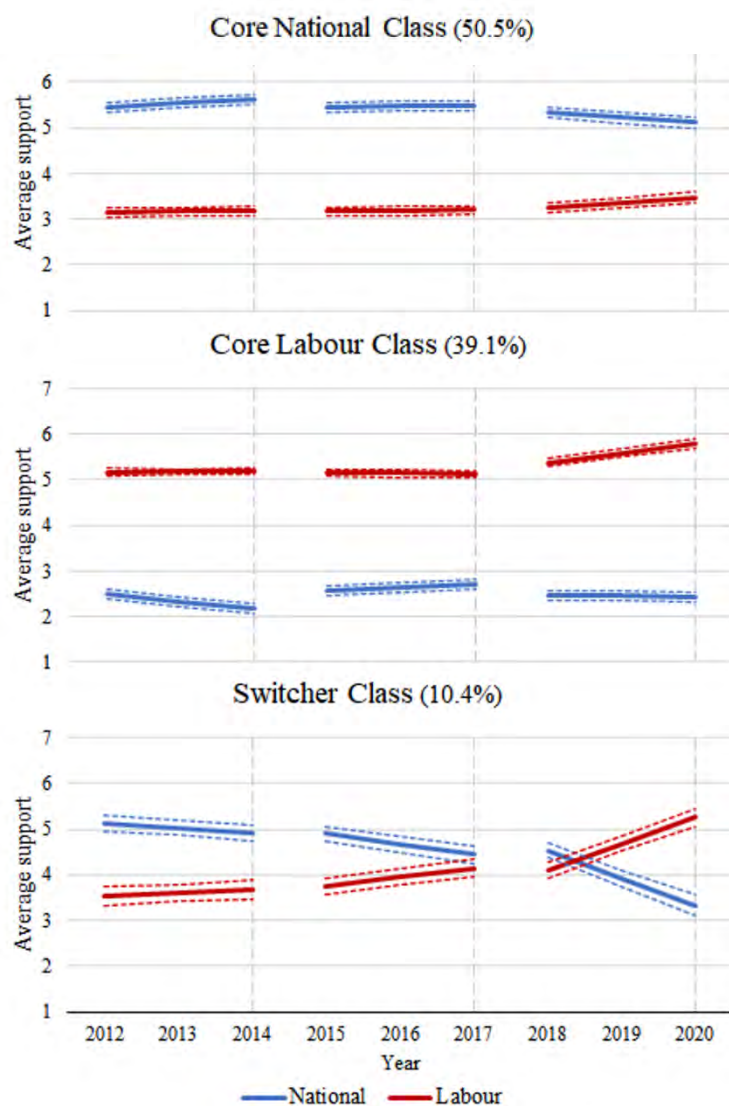


Figure 2. Piecewise trajectories of change in support for the National and Labour parties within each electoral cycle over the 2011 – 2020 period.

Switcher Class also showed a tendency to *de-polarize* in their levels of support across each election cycle, with support for the National party decreasing, and Labour party support increasing. This pattern was most drastic during the 2018 – 2020 period, where levels of support reversed such that the Labour party was preferred on average more than the National party, and the rate of change in support for each party was large.

The classes identified here are further characterized by unique voting behaviour during the 2014, 2017, and 2020 general elections. Although we focus on the National and Labour parties, New Zealand is a multiparty system and thus there are other viable parties (e.g., NZ First, Greens) that New Zealanders could vote for. The voting proportions shown in Table 3 show that a very high proportion of the Core National Class indicated that they voted for the National party at each election (i.e., .73 and above), yet essentially none voted for Labour across the elections. The Core Labour Class conversely were unlikely to vote for National and tended to be most likely to vote for Labour, particularly in the 2020 election. However, the proportion of the Core Labour Class who voted for Labour was generally lower than the proportion

of the Core National Class who voted for National, likely due to the relatively poorer performance of the party over the period examined. Indeed, Core Labour supporters were more likely to intend to vote for some party other than Labour (.38) or National (.00) during the 2017 election (i.e., .42). The Switchers Class exhibited changes in voting intentions over time that mirrored the observed changes in their support for the major parties over time. Specifically, they were most likely to vote for National in 2014 (.38), but were more likely to vote for some other party in 2017 (.32), likely indicating a general dissatisfaction with the National party. By 2020, Switchers were highly likely to vote for the Labour party (.67). Finally, even though Core National supporters decreased in National party support and increased in Labour party support in 2020, they still steadfastly resisted voting for Labour (.002 in 2020).

On the whole, these classes capture the actual patterns of change in support exhibited toward the main political parties in the New Zealand electoral system from 2011 – 2020. Crucially, however, our analyses suggest that there is no evidence of a group of New Zealanders who may be consistently polarizing in their support for the parties over time (see also Satherley et al., 2020 for aggregate trends over the same period). Moreover, our analyses identify a group of New Zealanders, and the size of that group, who seem most susceptible, or likely, to shift their support for the parties over time.

Class characteristics

To further examine the unique characteristics of the three latent classes identified, we conducted a logistic regression of the demographics, personality, and political attitudes predicting class membership using Mplus' R3Step approach. The results of this analysis, which examines predictors of membership in the Core National and Core Labour classes relative to the Switchers Class are displayed in Table 4.

Of particular interest here is comparing the Core National Class, who generally maintained high support and preference for the National Party, to the Switchers Class, who initially preferred the National Party but converted their support toward the Labour Party as time went on. Indeed, Switchers tended to be younger than Core National supporters and were higher in both

Table 2. Regression coefficients for the piecewise growth curves estimated for each latent class.

	Core National class			Core Labour class			Switcher class		
	b	se	p	b	se	p	b	se	p
<i>National support</i>									
Intercept	5.444	0.052	< .001	2.498	0.055	< .001	5.133	0.087	< .001
2012-2014 slope	0.098	0.012	< .001	-0.164	0.017	< .001	-0.105	0.041	.011
2015-2017 slope	0.015	0.007	.035	0.070	0.009	< .001	-0.232	0.032	< .001
2018-2020 slope	-0.110	0.012	< .001	-0.019	0.010	.061	-0.599	0.036	< .001
<i>Labour support</i>									
Intercept	3.149	0.049	< .001	5.176	0.040	< .001	3.529	0.104	< .001
2012-2014 slope	0.018	0.013	.191	0.002	0.015	.914	0.075	0.040	.060
2015-2017 slope	0.016	0.008	.033	-0.017	0.008	.045	0.206	0.029	< .001
2018-2020 slope	0.107	0.013	< .001	0.207	0.011	< .001	0.577	0.035	< .001

Note. *N* = 5,213

Table 3. Voting proportions among each class across the 2014, 2017, and 2020 general elections.

	2014			2017			2020		
	Core National class	Core Labour class	Switcher class	Core National class	Core Labour class	Switcher class	Core National class	Core Labour class	Switcher class
No vote	0.016	0.040	0.030	0.013	0.027	0.031	0.025	0.031	0.024
Unsure/unreported	0.139	0.186	0.266	0.126	0.175	0.264	0.164	0.144	0.122
National party	0.781	0	0.378	0.789	0.001	0.225	0.731	0.005	0.006
Labour party	0.005	0.414	0.102	0.006	0.381	0.158	0.002	0.568	0.673
Other	0.059	0.36	0.224	0.066	0.416	0.322	0.078	0.252	0.175

Agreeableness and Openness to Experience. Thus, being open to new ideas, paired with a warmer and friendlier outlook, may have limited the amount of cross-party negative affect and hostility felt by this class and allowed its members to evaluate and be persuaded by political messaging from the Labour party. Compared to the Core National Class, they also tended to be less conservative and were initially less satisfied with the performance of the then-National Party government. Finally, the Switcher Class had higher levels of political efficacy, yet lower levels of political identity centrality, than the Core National Class. Thus, they tended to invest less of their self-image in their political beliefs and had a greater sense that they could influence political outcomes, likely leading to their tendency to switch preferences for the

major parties—and perhaps even sway the outcome of elections—over time.

Perhaps unsurprisingly, higher levels of conservatism and initial levels of satisfaction with the then-National Party government set members of the Switchers Class apart from the Core Labour Class. They also had lower levels of political identity centrality (but higher efficacy), again suggesting that the investment of peoples' self-image in their political beliefs promotes commitment to a given political party. Notably, higher levels of openness to experience also predicted membership in the switcher class, relative to the Core Labour class. Thus, even though higher levels of openness to experience tend to be negative associated with conservatism, they also seem to be associated with higher rates of change in party support more broadly.

Table 4. Multinomial logistic regression model assessing demographic, personality, and political attitude predictors of membership in the Core National and Core Labour classes, relative to the Switcher Class.

	Core National class vs. Switcher class			Core Labour class vs. Switcher class		
	B	SE	p	B	SE	p
Gender	0.104	0.171	0.543	-0.093	0.214	.664
Age	0.019***	0.005	0.000	0.004	0.007	.513
European ethnicity	0.296	0.369	0.422	-0.477	0.475	.316
Extraversion	-0.030	0.070	0.672	-0.069	0.086	.418
Neuroticism	-0.115	0.071	0.107	-0.098	0.088	.264
Agreeableness	-0.228*	0.095	0.016	0.037	0.118	.752
Openness to Experience	-0.190*	0.083	0.023	-0.243*	0.102	.017
Conscientiousness	0.113	0.079	0.149	-0.070	0.100	.488
Conservatism	0.220**	0.068	0.001	-0.472***	0.093	<.001
Satisfaction with government	0.198***	0.043	0.000	-0.832***	0.055	<.001
Political efficacy	-0.128*	0.060	0.032	-0.155*	0.074	.036
Political identity centrality	0.123**	0.046	0.007	0.326***	0.060	<.001

Note. *N* = 3,105. * *p* < .05, ** *p* < .01, *** *p* < .001.

DISCUSSION

In this study we decomposed New Zealanders' support for the National and Labour parties from 2011 – 2020 by examining the within-person trajectories of change in party support over (and also annually within) three consecutive election cycles. Rather than assuming all New Zealanders changed their party support in the same way over time, our analyses identified distinct latent classes that characterise different patterns of change for different groups of people over time. We thus accounted for potentially different types of party attachment (e.g., stable partisanship, polarization, and depolarization) in a unified analysis. We identified three classes of New Zealanders based on their trajectories of change in support for the parties over time. The Core National (50.5%) and Core Labour (39.1%) supporters maintained consistently high support for their respective party, and opposition toward the out-party. These classes align with the partisanship literature that specifically emphasises stable commitments to parties. That said, our analyses revealed even these classes exhibited changes in their support during the 2017 – 2020 election cycle, with the Core National class depolarizing (decreasing in support for National and increasing for Labour), and the Core Labour class polarizing. Thus, even New Zealanders who strongly preferred a particular party nonetheless responded to changes in the electoral context by adjusting their sense of support for the parties. By contrast, the Switcher class (10.4%) responded heavily to the electoral context and completely reversed their party preferences in the 2017 – 2020 period.

By modelling trajectories of change within each electoral cycle independently and examining ratings of party support rather than voting behaviour, we also identified nuances in the ways these classes changed preferences. With regards to Switchers specifically, these voters actually quite clearly supported the National party in 2011, and generally expressed opposition to the Labour party (i.e., with support ratings below the midpoint of the scale). It is thus notable that the third class identified was actually one in which there was a clear party preference; this class was not a fence-sitting class of voters who simply feel consistently moderate or low support for both parties (see Greaves et al., 2015) and perhaps vote randomly, or not at all, from election to election. Moreover, the class consistently depolarized in their preferences within each election cycle, rating the major parties more similarly by the end of the cycle compared to the start. This may suggest this group of voters are generally more likely to listen to and appreciate arguments and policy from the opposition party (in this case Labour) or may have experienced an underlying dissatisfaction with the performance of the National party.

Comparisons of the voting behaviours, demographics, personality and political attitudes of the classes provided further insight into their motivations. Our findings add to the limited past research on personality predispositions of vote switching by showing that, consistent with Bakker et al. (2016), openness to experience in particular distinguished the Switcher class from both the Core National and Core Labour classes. In other words, those more open to new and novel ideas were more likely to shift their party support over time, which further suggests

these voters were responding in a considered manner to the political context. Interestingly, they tended to have higher levels of openness compared to both Core National and Core Labour supporters, despite a clear main association between openness and (low) levels of conservatism in the literature (Gerber et al., 2011; Osborne et al., 2021). Previous work has also revealed a negative association between openness to experience and both National and Labour party support in New Zealand, while controlling for both support for the other party and political orientation (Satherley et al., 2020). Despite the robustness of this association, recent research has shown that openness to experience does not predict conservatism over time (Osborne & Sibley, 2020). Indeed, when re-parameterizing our models based on the reference category, we found no association between openness to experience and membership in the Core National relative to Core Labour classes. Taken together, this suggests that openness to experience is simply negatively associated with the extremities of party support. On the whole, our results contribute to a nuanced understanding of how personality relates to political attitudes.

Additionally, the Switcher class was initially less satisfied than the Core National class with the performance of the National party government in 2011, and were more moderate than the core supporter classes in their political orientation. Switchers were also less likely to view their political beliefs as important to their sense of self, likely decreasing the need to support a party consistently in a partisan-like manner. Yet this group also had higher levels of political efficacy. The effects of political efficacy differ to those found in past research, where it has often been found to be negatively associated with vote switching (Dassonneville, 2012; Dejaeghere & Dassonneville, 2012). This difference may have occurred due to the focus of our study on longer term trends in attitude change (i.e., periods in which Switchers had a very real impact on the outcome of the election), rather than more brief behavioural vote switches between successive elections.

Finally, we did not find evidence of affective polarization in our analysis (i.e., a class becoming increasingly more supportive of their in-party and more opposed to the out-party). This is consistent with other work that has identified generally stable levels of affective polarization in New Zealand (i.e., Gidron et al. 2021). However, we show that this is the case even when considering the possibility that polarization may be increasing among only a specific sub-group of voters. Although our analyses do not allow us to rule out the possibility that no voters are becoming increasingly affectively polarized, they do suggest that any such pattern of change would be limited to a very small proportion of the population.

Nevertheless, our findings with regard to the Switcher class may also indirectly inform the affective polarization literature, suggesting openness to experience, and a more moderate level of investment of the self in one's political beliefs, may temper affective polarization. Indeed, past research in New Zealand has shown that openness to experience and (low) political identity centrality decrease the extent to which in-party support predicts out-party opposition (Satherley et al., 2021), and the current

research extends on this to show these variables are also associated with shifts in party support over time.

Strengths and Limitations

This study provides a novel examination of change in attitudes toward political parties over time in New Zealand. In contrast to past research, we focused on within-person changes in measures of support rather than reported voting behaviour. This modelling strategy highlighted that changes in electoral power between elections are indeed related to changes in people's attitudes over time (rather than changes in electorate composition or shifts between voting and non-voting). Our results also identify nuances in the 'vote switching' proportion of the public (i.e., that these New Zealanders have clear preferences for one party over another which change over time, as opposed to fence-sitters who are relatively apathetic). The voting proportions displayed in Table 3 also emphasize this analytic advantage given that quite large proportions of each supporter class either reported that they did not vote (2-4%) or were unsure of (or did not report) who they voted for at each election (12.2-27%). Notably, Switchers were both the most and least likely to fail to report their vote, depending on the election (they were least likely during the 2020 election where the Labour party's support soared, but most likely for the 2014 election). In other words, our analysis identifies a class of voters that defines a longer-term pattern of attitude change who could otherwise be overlooked in analyses of voting behaviour.

That our analyses identified theoretically meaningful classes that both aligned with aggregate trends in support seen across elections and matched within-class voting proportions over time is also encouraging given concerns raised about latent class trajectory analyses. Specifically, Sher et al. (2011) found that these modelling approaches use often identify the exact same 'cats cradle' patterns of growth (a consistently high class, consistently low, an increasing, and a decreasing class), even as study characteristics (e.g., periods and length of time and measures used) varied, raising questions over the meaningfulness of the classes. That we do not find this specific pattern, either over the full 9-year period or within election cycles, provides more confidence that our classes reflect meaningful differences in the population.

Although we are confident that our analyses identify distinct classes in the population, some caution should be taken when interpreting aspects of our findings. The classes identified here characterise key trends across the entire 9 years observed, and there is some degree of error in the classification of the classes. This accounts for why the Core National class represented 50.5% of the sample, even though their electoral support dropped to 30% of vote share at the 2020 election. Similarly, the voting proportions displayed in Table 3 show a shift in voting toward Labour (consistent with actual electoral outcomes), but the voting proportions at 2020 would still predict a heavy favouring of the National party. This again is because the classes account for the full 9-year period, which predominantly saw higher levels of support for National compared to Labour. Nevertheless, it remains an important indication of the validity of our classes that the voting patterns within each class generally track with the real outcomes of the national elections.

Although we identified a number of variables associated with the supporter classes, some of these variables (namely, the political attitude variables assessing satisfaction with the government, political identity centrality, and political efficacy) were single-item measures. While most effects were consistent with theoretical expectations, the effect of political efficacy did run counter to findings in past research. Although it is reasonable to expect political efficacy to be associated with support switching (for example, it may be instilled by shifts associated with prior election outcomes, and promote careful consideration of future outcomes), more research is needed to determine the reliability of this effect. Finally, it is not certain whether the Switchers identified here will be the same group of people who, eventually, shift their support back to the National party. That is, whether one group of swing voters consistently switch their preferences between parties, or whether different groups of voters may shift elections at different times, and for different reasons, or perhaps a combination of these two patterns.

Conclusion

Examining trajectories of within-person change in New Zealanders' support for the competing National and Labour parties from 2011 – 2020, we found that most New Zealanders can be considered either Core National (50.5%) or Core Labour (39.1%) supporters. These groups of New Zealanders maintained relatively stable levels of support for their respective party, as well as stable opposition toward the out-party. Switchers (10.4%), however, were tempted to cross party lines at each election, with their ratings of support for National and Labour drawing closer together until their preference reversed completely from 2017 – 2020. Among demographic, personality, and political attitude correlates of this profile, higher levels of openness to experience, but lower levels of political identity centrality, distinguished switchers from both Core National and Core Labour supporters, along with more moderate political orientation and initial levels of satisfaction with the 2011 National party government. Our analyses elucidate the different classes of voters in New Zealand over the 2011 – 2020, and encouragingly fail to identify a class of polarizing voters.

References

- Bakker, B. N., Klemmensen, R., Nørgaard, A. S., & Schumacher, G. (2016). Stay loyal or exit the party? How openness to experience and extroversion explain vote switching. *Political psychology*, 37(3), 419-429. <https://doi.org/10.1111/pops.12257>
- Bollen, K. A., & Curran, P. J. (2006). *Latent curve models: A structural equation perspective* (Vol. 467). John Wiley & Sons.
- Boxell, L., Gentzkow, M., & Shapiro, J. M. (2020). *Cross-country trends in affective polarization* (No. w26669). National Bureau of Economic Research.
- Campbell, A., Converse, P. E., Miller, W., & Stokes, D. (1960). *The American voter*. Chicago, IL: John Wiley & Sons.
- Dalton, R. J. (2008). The Quantity and the Quality of Party Systems: Party System Polarization, Its Measurement, and Its Consequences. *Comparative Political Studies*, 41, 899-920. doi:10.1177/0010414008315860

- Dalton, R. J., & Weldon, S. (2007). Partisanship and Party System Institutionalization. *Party Politics*, 13, 179–196. doi:10.1177/1354068807073856
- Dassonneville, R. (2012). Electoral volatility, political sophistication, trust and efficacy: A study on changes in voter preferences during the Belgian regional elections of 2009. *Acta Politica*, 47(1), 18–41. <https://doi.org/10.1057/ap.2011.19>
- Dassonneville, R. (2016). Volatile voters, short-term choices? An analysis of the vote choice determinants of stable and volatile voters in Great Britain. *Journal of Elections, Public Opinion and Parties*, 26(3), 273–292. <https://doi.org/10.1080/17457289.2016.1158181>
- Dejaeghere, Y., & Dassonneville, R. (2017). A comparative investigation into the effects of party-system variables on party switching using individual-level data. *Party Politics*, 23(2), 110–123. <https://doi.org/10.1177/1354068815576294>
- Erisen C., Blais A. (2016) Strategic Voting and Personality Traits. In: Blais A., Laslier JF., Van der Straeten K. (eds) Voting Experiments. Springer, Cham. https://doi.org/10.1007/978-3-319-40573-5_12
- Finkel, E. J., Bail, C. A., Cikara, M., Ditto, P. H., Iyengar, S., Klar, S., ... & Druckman, J. N. (2020). Political sectarianism in America. *Science*, 370(6516), 533–536. doi: 10.1126/science.abe1715
- Gerber, A. S., Huber, G. A., Doherty, D., & Dowling, C. M. (2011). The big five personality traits in the political arena. *Annual Review of Political Science*, 14, 265–287. <https://doi.org/10.1146/annurev-polisci-051010-111659>
- Gerber, A. S., Huber, G. A., Doherty, D., & Dowling, C. M. (2012). Personality and the strength and direction of partisan identification. *Political Behavior*, 34(4), 653–688.
- Gidron, N., Adams, J., & Horne, W. (2020). American Affective Polarization in Comparative Perspective (Elements in American Politics). Cambridge: Cambridge University Press. doi:10.1017/9781108914123
- Green, D. P., & Palmquist, B. (1994). How stable is party identification? *Political behavior*, 16, 437–466. doi: 10.1007/BF01498826
- Hetherington, M. J. (2001). Resurgent Mass Partisanship: The Role of Elite Polarization. *American Political Science Review*, 95, 619–631. doi:10.1017/S0003055401003045
- Bai, H., & Federico, C. M. (2021). Retrospective economic judgments predict individual-level changes in vote preference in the US. *Journal of Social and Political Psychology*, 9(1), 272–289. <https://doi.org/10.5964/jssp.6755>
- Iyengar, S., Sood, G., & Lelkes, Y. (2012). Affect, not ideology: a social identity perspective on polarization. *Public opinion quarterly*, 76(3), 405–431. <https://doi.org/10.1093/poq/nfs059>
- Kuhn, U. (2009). Stability and change in party preference. *Swiss Political Science Review*, 15(3), 463–494. <https://doi.org/10.1002/j.1662-6370.2009.tb00142.x>
- Lauka, A., McCoy, J., & Firat, R. B. (2018). Mass Partisan Polarization: Measuring a Relational Concept. *American Behavioral Scientist*, 62, 107–126. doi: 10.1177/0002764218759581
- Lupu, N. (2015). Party polarization and mass partisanship: A comparative perspective. *Political Behavior*, 37(2), 331–356. <https://doi.org/10.1007/s11109-014-9279-z>
- Mayer, W. G. (2007). The swing voter in American presidential elections. *American Politics Research*, 35(3), 358–388. <https://doi.org/10.1177/1532673X06297000>
- Osborne, D., & Sibley, C. G. (2020). Does openness to experience predict changes in conservatism? A nine-wave longitudinal investigation into the personality roots to ideology. *Journal of Research in Personality*, 87, 103979. <https://doi.org/10.1016/j.jrp.2020.103979>
- Osborne, D., Satherley, N., & Sibley, C. G. (2021). Personality and ideology: A meta-analysis of the reliable, but non-causal, association between Openness and conservatism. In A. Mintz & L. Terris (Eds.), *Oxford Handbook on Behavioral Political Science*. Oxford University Press
- Satherley, N., Greaves, L. M., Osborne, D., & Sibley, C. G. (2020). State of the nation: Trends in New Zealand voter's polarization from 2009–2018. *Political Science*, 72(1), 1–23. <https://doi.org/10.1080/00323187.2020.1818587>
- Satherley, N., Osborne, D., & Sibley, C. G. (2021). Stability and change in New Zealanders' political party support. *New Zealand Journal of Psychology*, 50(2), 9–22.
- Satherley, N., Sibley, C. G., & Osborne, D. (2020). Identity, ideology, and personality: Examining moderators of affective polarization in New Zealand. *Journal of Research in Personality*, 87, 103961. <https://doi.org/10.1016/j.jrp.2020.103961>
- Sibley, C. G. (2021) Sampling procedure and sample details for the New Zealand Attitudes and Values Study. <https://doi.org/10.31234/osf.io/wgqvq>
- Sibley, C. G., Luyten, N., Purnomo, M., Moberly, A., Wootton, L. W., Hammond, M. D., Sengupta, N., Perry, R., West-Newman, T., Wilson, M. S., McLellan, L., Hoverd, W. J., & Robertson, A. (2011). The Mini-IPIP6: Validation and extension of a short measure of the Big-Six factors of personality in New Zealand. *New Zealand Journal of Psychology*, 40, 142–159.
- Sher, K. J., Jackson, K. M., & Steinley, D. (2011). Alcohol use trajectories and the ubiquitous cat's cradle: Cause for concern?. *Journal of abnormal psychology*, 120(2), 322. <https://doi.org/10.1037/a0021813>
- Van der Meer, T., Lubbe, R., Van Elsas, E., Elff, M., & Van der Brug, W. (2012). Bounded volatility in the Dutch electoral battlefield: A panel study on the structure of changing vote intentions in the Netherlands during 2006–2010. *Acta Politica*, 47(4), 333–355. <https://doi.org/10.1057/ap.2012.5>
- Vowles, J., Coffé, H., & Curtin, J. (2017). *A bark but no bite: inequality and the 2014 New Zealand general election*. ANU Press.
- Wurthmann, L. C., Marschall, S., Triga, V., & Manavopoulos, V. (2020). Many losers—One winner? An examination of vote switching to the AfD in the 2017 German federal election using VAA data. *Party Politics*, 1354068820914959. <https://doi.org/10.1177/1354068820914959>

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