

Shifting organizational sentiment: Qualitative insights from a mental ill-health prevention program for New Zealand firefighters[☆]

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ABSTRACT

Background: Firefighters are regularly exposed to potentially psychologically traumatic events (PPTs), significantly increasing their risk of mental ill-health. Organizational factors such as leadership, support, and workload also influence these outcomes.

Purpose: This study evaluates the Whanaungatanga Program, a participatory initiative designed to address organizational factors affecting firefighter well-being, focusing on early changes in sentiment.

Methods: We conducted a qualitative analysis of open-text responses from two surveys (embedded within broader mental health questionnaires) with firefighters and commanders, and semi-structured interviews with commanders. Thematic and sentiment analyses explored perceptions of organizational interventions and the emotional tone in responses across two time points.

Main Findings: In the pilot region receiving interventions, organizational sentiment shifted substantially: positive sentiment increased from 13 % to 48 %, negative sentiment decreased over 20 % (from 66 % to 40 %), and themes such as improved leadership visibility emerged, reflecting rapid cultural progress.

Conclusions: The results highlight the effectiveness of targeted, participatory interventions in fostering positive organizational change. Marked improvements in sentiment indicate that even in high-stress environments, well-designed interventions can lead to substantial benefits in employee sentiment and organizational culture.

1. Introduction

Firefighters and other first responders are routinely exposed to potentially psychologically traumatic events (PPTs) such as accidents, disasters, and violent crimes, significantly increasing their risk of developing mental ill health, including anxiety, depression, and post-traumatic stress disorder (PTSD) [1–8]. While exposure to PPTs is an inherent part of the job, organizational factors such as workload, leadership support, accountability, and workplace culture can play a critical additional role in an organizational wellbeing and culture landscape [9–11]. These factors can either act as psychosocial hazards, exacerbating stress and contributing to mental ill health, or as protective elements, fostering resilience and adaptive coping mechanisms [11–16]. In broader organizational psychology, it is well-established that the work environment significantly impacts employee well-being [17–20]. In particular, the way employees perceive their organization's support can influence their emotional and behavioral responses [21]. This aligns

with Perceived Organizational Support theory (POS) and affective exchange ideology, which suggests that individuals tend to reciprocate how they are treated by their organization; supportive environments promote engagement and well-being, while unsupportive environments breed cynicism and disengagement [22–24]. In accordance with this theory, increasing evidence suggests that improving the organizational environment can play a critical role in reducing mental ill health, fostering resilience, and promoting healthier coping mechanisms among first responders [12,25].

In response to the well-documented high rates of mental ill health among first responders [2,7,14,26–31], a variety of prevention and support programs have been developed globally [32]. However, many of these interventions remain under-evaluated, particularly with respect to high-quality studies that focus on specific mental health outcomes [31–33]. There is a clear need for further research that examines not only the clinical effects of these programs, but also the organizational factors that contribute to their success or failure. Recognizing the

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importance of such factors, the Whanaungatanga (a Māori word that translates loosely to the maintaining of close connections) Program was developed in New Zealand (NZ) to help prevent mental ill-health and enhance the mental wellbeing of firefighters. The program aims to achieve these objectives by developing organizational change interventions that address psychosocial hazards in the workplace and in doing so, foster improvements in connections, trust, and a sense of value within the organization. Initially, the program was implemented in a pilot region to evaluate its impact before considering broader implementation. The program represents a significant shift in addressing mental ill health prevention by focusing on addressing the work - rather than the worker - as a key factor in mental health outcomes [34,35].

The theoretical framework underpinning the Whanaungatanga Program draws on three interrelated models: Job Demands-Resources Theory (JD-R), POS, and current international best-practice guidelines. JD-R theory posits that while job demands can contribute to burnout and psychological strain, job resources—such as supportive leadership, autonomy, and recognition—buffer these effects and promote engagement and resilience; this has been supported by multiple meta-analyses [36,37]. Similarly, POS theory highlights how workers' perceptions of being valued and supported by their organization are strongly associated with improved well-being, reduced burnout, and enhanced commitment, also well-demonstrated in meta-analytic reviews [23,38]. The program design aligns with the WHO's 2022 Guidelines on Mental Health at Work [39], which recommend organizational-level interventions—especially participatory approaches—as the most effective way to prevent and mitigate psychosocial risks, particularly among emergency workers. This is also reinforced by the introduction of ISO 45003 in Australia [40], which emphasizes that managing psychosocial risk requires systemic change rather than isolated individual interventions. Together, these frameworks support the program's focus on addressing organizational-level drivers of mental ill-health and fostering a more supportive and responsive work environment.

While quantitative data can provide critical insights into the effectiveness of such interventions, qualitative research offers a more nuanced understanding of how organizational changes are perceived and experienced by first responders on the ground. Methods such as thematic analysis of open-text responses and interviews allow researchers to capture the voices of firefighters and provide a richer context for understanding the complex emotional and organizational factors influencing mental health outcomes [41]. This approach is particularly useful in formative evaluations, where early-stage interventions may not yet yield measurable quantitative outcomes, but can provide valuable qualitative insights [42].

This paper presents a formative evaluation of the Whanaungatanga Program, using qualitative data to explore early perceptual shifts in firefighter organizational attitudes, which contribute to organizational culture and are known correlates of wellbeing [43]. By analyzing sentiment from open-text responses and interview insights, the study aims to capture subtle but meaningful changes in organizational culture and individual experiences. These early findings will offer guidance for ongoing program development and inform future evaluations, laying the groundwork for more comprehensive assessments of the program's long-term impact.

2. Methods

2.1. Study design and participants

This study presents qualitative data collected in 2023 and 2024 as part of a broader effort to understand the organizational factors influencing firefighter mental health and wellbeing within Fire and Emergency NZ. The Whanaungatanga Program was implemented in a pilot region to evaluate its effectiveness, with the remaining four regions serving as controls. Data were gathered through both surveys and semi-

structured interviews. While the survey was available to all paid employees at Fire and Emergency NZ including support staff, this paper reports only on data from paid firefighters (which included station officers and senior station officers) and commanders (which included group, district, region and national commanders also known as commanders). Data were collected from multiple regions of NZ to ensure broad representation.

In total, 1264 firefighters and commanders completed at least one survey, with full details related to participant demographics reported in Mackay et al. [44]. Participants covered a wide range of experience levels, ages, and ethnicities. Participants were not paid or incentivized to participate.

2.2. Survey implementation

In March 2023, a census survey was available to all paid employees of the organization (1264 responses from firefighters and commanders). In March 2024, a follow-up survey was sent only to those participants who completed the 2023 survey (838 responses). The reduction in responses in 2024 is consistent with expected attrition in longitudinal studies, potentially due to factors such as participants leaving the organization, changes in contact information, or lack of interest in completing a second survey. The response rate was high among firefighters; of the 1718 firefighters employed as of March 2023, a total of 1181 participated in the 2023 survey (68.7 % response rate). Both surveys were administered online using the Qualtrics Survey Platform. The study was approved by the Auckland University of Technology Ethics Committee (AUTEC 22/320), and all participants provided electronic consent prior to taking part. Participants were invited to respond to both closed and open-text questions about their experiences with organizational support, wellbeing, and mental health. While the broader survey included quantitative measures of mental health and wellbeing (fully reported in Mackay et al. [44], this study focuses exclusively on the qualitative open-text responses to explore organizational sentiment shifts.

An optional open-text response question was included in both the 2023 and 2024 surveys to allow participants to share additional thoughts, clarify earlier answers, or provide feedback not captured by the closed-ended questions. In 2023, this yielded 453 responses (35.8 % of the 1264 survey participants), while in 2024, it yielded 474 responses (56.6 % of the 838 survey participants). In the 2023 survey, the open-text question invited participants to provide any additional information to supplement their answers to multiple choice questions which addressed mental ill health, wellbeing, and organizational climate. The 2024 survey, conducted after the implementation of several organizational interventions (described in section 2.3), sought to capture shifts in perceptions of support and wellbeing over the past year. The open-text question specifically asked participants whether they had noticed any change, either positive or negative, at Fire and Emergency NZ in the last 12 months that had impacted their mental wellbeing, again in the context of mental ill health, wellbeing, and organizational climate.

2.3. Organizational interventions

A total of 51 organizational change workshops were held with firefighters and commanders across four districts in the pilot region following the baseline survey in 2023. The workshops were delivered between April 3 and May 26, 2023. Forty-five workshops were attended by firefighters (including the ranks of Firefighter, Qualified Firefighter, Senior Firefighter, Station Officer, Senior Station Officer) in their crews while on duty. There were an additional six workshops held separately with commanders (including the ranks of Group Commander, District Commander, and Regional Commander). In total, over 500 firefighters and commanders attended the organizational change workshops.

The workshops built upon a foundation of quantitative data that had identified a range of negative perceptions regarding organizational

factors such as organizational and leadership support, organizational accountability, and preparedness (having the tools, training, and equipment to do the job effectively). The organizational change workshops served a dual purpose, acting both as a data-gathering tool, to identify in more detail the parts of work creating harm and how this could be rectified, and as an intervention in their own right, providing agency to personnel to voice issues and contribute to solutions. Each three-hour workshop followed a structured format, including individual and group exercises where participants identified workplace challenges, reflected on emotional impacts, and collaboratively proposed solutions. Using a Non-Violent Communication (NVC) framework [45], these sessions provided a space for open dialogue, enabling participants to share frustrations, discuss solutions, and recognize organizational successes. This approach not only gathered valuable insights but also fostered engagement and a sense of ownership over potential changes.

Based on the insights gained from the 2023 survey and the workshops described above, eight interventions (below) were designed to address key organizational factors affecting culture and mental health. With the exception of the first, these interventions were implemented solely in a pilot region, with the remaining four regions serving as controls to evaluate their impact. These interventions included:

- 1) Removal of the Absence Indicator: A nationwide directive to deactivate a tool used to track absence using the Bradford factor.
- 2) Manager/Frontline Connection: An Initiative to improve connections between commanders and firefighters by increasing visibility of managers via 'meeting-free Wednesdays' which prioritize regular in-person visits to crews/stations over other meetings.
- 3) Sharing the Mahi (work): Work was undertaken to identify key tasks which commanders could delegate to officers with the aim of giving officers more autonomy while decreasing the workload for commanders.
- 4) Leadership Development: NVC and SpeakEasy workshops were provided for commanders. Additionally, an accelerated 6-month leadership development program for commanders (starting in February 2024) was progressed.
- 5) Reward and Recognition: Exploration of regional reward and recognition systems, including a review of the status of medals and certificates due to employees, along with updates to medal presentation protocols.
- 6) Manager/Union Connection: Training, mediations, and workshops between and with union representatives and management to foster better working relationships.
- 7) Operational Personnel/Non-operational Personnel Connection: Enhanced induction processes designed to increase interaction and understanding between uniformed and non-uniformed staff, aimed at improving organizational cohesion.
- 8) Operational Strategy and Capability Development/Frontline Connection: An undertaking to improve connections between the personnel and directorates responsible for property, fleet, and equipment and those on the frontline.

At the time of the 2024 survey, interventions 1 (December 2023) and 2 (January 2024) had been implemented. Interventions 4, 5 and 6 were partially implemented, while interventions 3, 7, and 8 were yet to be implemented.

A separate psychological supervision pilot was also launched in September 2023 across nine career stations involving approximately 200 operational personnel. Of the nine stations, three were located across Auckland and Whangārei. The pilot provides proactive access to psychologists, aiming to equip healthy participants—who had not previously sought support—with tools to manage mental wellbeing. Although distinct from the Whanaungatanga Program, this initiative reflects broader organizational efforts to promote wellbeing [46]. Awareness of mental wellbeing may have also increased outside the pilot region due to the national rollout of the absence indicator removal

and widespread communication efforts. These included organization-wide updates which noted wellbeing findings from the national survey and more general information on the program.

2.4. Interviews

To complement survey findings, semi-structured interviews and focus groups were conducted with commanders (at varied levels including group (GM), district (DM), and regional (RM) commanders) and union representatives in both 2023 and 2024. In 2023, 18 GMs, eight DMs, and two RMs were interviewed along with one member of the Senior Leadership Team, with all interviews taking place between 11th March and 14th July. In 2024, 13 GMs, five DMs, and one RM were interviewed in addition to two union representatives, interviews were conducted between 4th and 24th April.

The interviews provided in-depth insights into organizational dynamics and the perceived effectiveness of the interventions. Interviews conducted in 2023 focused on identifying key challenges and opportunities for improving organizational support, while those in 2024 explored the impact of the interventions and any changes in management practices. Both sets of interviews followed a semi-structured format, allowing flexibility in exploring key themes relevant to firefighter mental health and organizational wellbeing. Each interview lasted approximately 60 min.

Interview participants were invited via email, with a follow-up reminder sent after 10 days to those who had not responded. The interviews were conducted in April 2024, and the study received ethical approval from the AUT Ethics Committee (reference number: 22/362).

2.5. Data analysis

Qualitative data from the open-text responses in both the 2023 and 2024 surveys, as well as the interview data, were analyzed using NVivo analytic software (Release 1.6.1 (1137), QRS International Pty Ltd) for thematic analysis. Sentiment analysis was conducted separately on the open-text responses to assess emotional tone and overall sentiment regarding organizational support and wellbeing. Thematic analysis identified key themes and categories, reviewed and coded by multiple researchers (J.L.C, P.O, G.S) to ensure consistency and rigor, while sentiment analysis involved segmenting multi-statement responses and calculating the proportion of positive, negative, neutral, and contextual responses.

Thematic analysis of open-text responses and interviews combined deductive and inductive approaches. Deductive coding was guided by predefined research questions (e.g., perceptions of the Whanaungatanga Program and organizational support), while inductive coding allowed emergent themes (e.g., trust, workload) to arise from the data. No formal codebook was created; instead, a flexible coding framework was developed iteratively through team discussions, with key themes and their definitions documented and refined as analysis progressed to ensure consistency across researchers and time points. Three researchers independently coded a subset of responses (approximately 10 % of each dataset), then met to reconcile discrepancies and agree on thematic categories, achieving a high level of inter-coder agreement (qualitatively assessed through consensus rather than statistical measures). Coders were not blinded to the time points of open-text responses, as the study aimed to detect sentiment shifts between 2023 and 2024, requiring awareness of the temporal context.

Sentiment analysis was conducted manually by researchers on the open-text responses, classifying each segmented statement as positive, negative, neutral, or mixed based on emotional tone and content. Text preparation involved segmenting multi-statement responses into individual units (e.g., "I hate my boss but love my crew" became one negative and one positive statement). Both 2023 and 2024 datasets were analyzed in 2024 after all data collection, ensuring uniform application of the classification process across time points. A random 10 % sample of

responses was double-checked by a second researcher to confirm consistency, with discrepancies (less than 5 % of cases) resolved through discussion, indicating reliable classifications. No formal statistical reliability tests were conducted, as the focus was on qualitative interpretation, but the review process ensured consistency. Quotations were lightly edited to enhance readability and ensure participant anonymity.

Thematic analysis was applied to the interview transcripts from both years. Transcripts were initially reviewed in full, and subsequently interviews were summarized to focus on dominant themes such as leadership practices, social support, workload management, and organizational culture. Thematic coding was applied deductively, guided by the main research questions around organizational factors and mental health outcomes. Interviews were analyzed contemporaneously (2023 data in 2023, 2024 data in 2024) to inform ongoing program development, with the same flexible coding framework applied as for the open-text responses, ensuring alignment across data sources.

3. Results

3.1. Baseline survey overview

The 2023 baseline survey open-text responses revealed a mixed organizational climate within Fire and Emergency NZ, with sentiment leaning predominantly negative in both the pilot and control regions. In the pilot region, 13 % ($n = 37$) of responses were positive, while 66 % ($n = 194$) were negative. Similarly, in the control regions, 20 % ($n = 139$) of comments were positive, and 61 % ($n = 438$) were negative. Several key issues emerged, indicating areas of concern regarding mental health and organizational support. Employees' comments indicated high levels of cynicism, stress, and dissatisfaction, particularly related to workload, communication, and managerial support. A considerable portion of

firefighters and commanders expressed concerns over inadequate staffing, poor communication from leadership, and limited organizational support for mental health. Additionally, negative sentiment regarding the lack of clear leadership practices and insufficient resources was prevalent. Despite these challenges, some employees did note positive experiences, particularly in terms of peer support and camaraderie within teams. However, these positives were overshadowed by more pervasive organizational issues that contributed to overall dissatisfaction and a lack of perceived wellbeing.

3.2. Changes in sentiment after 12 months

The 2024 follow-up survey revealed a stark difference in organizational sentiment between the pilot and control regions within Fire and Emergency NZ. In the pilot region where workshops were held with firefighters, and several organizational interventions from the Whanaungatanga Program were implemented, positive sentiment reached 48 % ($n = 121$), with negative sentiment dropping to 40 % ($n = 100$). This represents a large increase in positive sentiment compared to the baseline data, and a large decrease in negative sentiment (Fig. 1.).

In contrast, the control regions showed markedly lower levels of positive sentiment, with only 16 % ($n = 64$) of comments being positive, while negative sentiment remained high at 70 % ($n = 285$). These figures remained similar to the baseline data yet showed a slight decrease in positive sentiment and a slight increase in negative sentiment. Employees in these regions continued to express dissatisfaction with workload, poor communication, and a lack of visible support from leadership. Employee cynicism was also common.

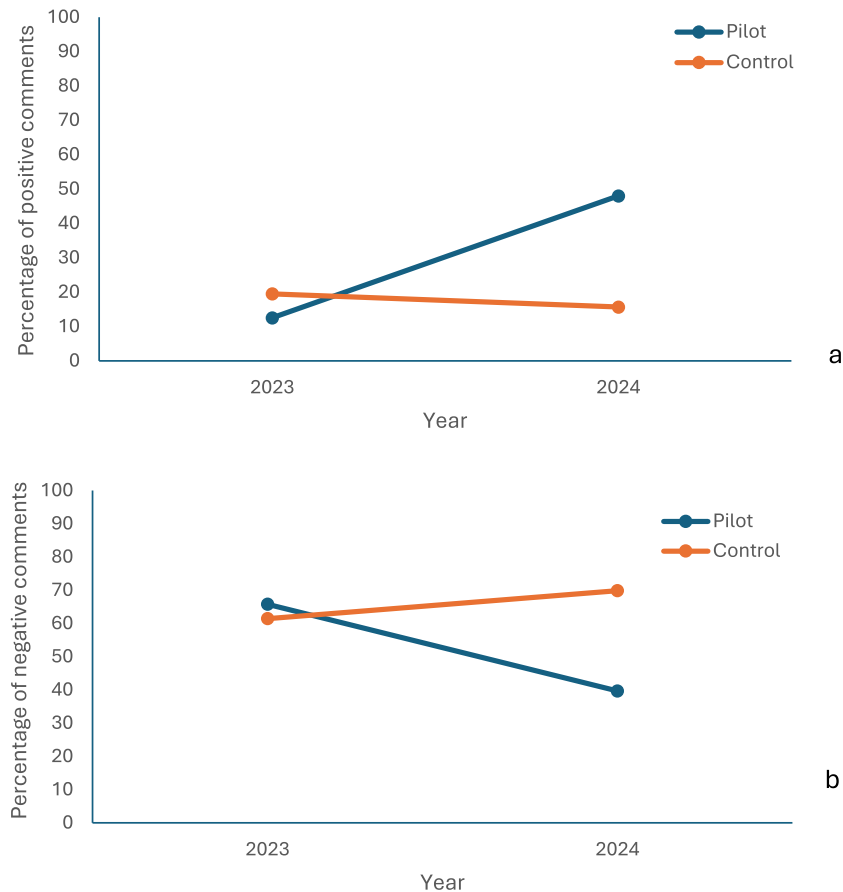


Fig. 1. Percentage of a) positive and b) negative sentiment in the pilot and control regions at baseline (2023) and follow-up (2024).

3.3. Key themes from open text responses

3.3.1. Positives in the pilot region

In the 2024 follow-up survey, the most frequently mentioned improvement within the pilot region was the introduction of ‘meeting-free Wednesdays’; a function of the Manager Frontline Connection intervention. Firefighters expressed appreciation for the increased visibility of their commanders at stations, and many indicated that the initiative had noticeably improved communication and facilitated stronger, more supportive relationships between firefighters and their leadership. The regular presence of commanders was seen as a key factor in creating a more connected and positive workplace atmosphere.

A prevailing theme throughout the open-text responses was a renewed sense of hope and optimism regarding the organization’s commitment to change (Table 1). For many participants, the Whanaungatanga Program represented the first time they felt their concerns

Table 1
Examples of open-text responses from firefighters and commanders within the pilot region. In all cases, FENZ refers to Fire and Emergency NZ.

Positive	Negative
“I am now of the belief that FENZ [Fire and Emergency NZ] management genuinely want to bring positive change to Firefighters lives in both work, and home life.”	“I just hope it continues because there is a long way to go to rebuild trust within our organization.”
“I am optimistic of the outcomes, something I haven’t felt for ages.”	“The effort so far in actions is more a box ticking exercise than a genuine effort to improve things.”
“I think the fact that FENZ have taken the recommendations on board and are implementing some of them gives me hope and that’s a positive thing.”	“I have found the changes brought about by the whanaungatanga project to have been potentially effective, but then the way in which they were implemented has been less than ideal, which has a further detrimental effect on my wellbeing.”
“There has been a positive change in the way my leaders (Group Managers) have engaged with the firefighters. By just simply stopping and having a chat or looking after the firefighter’s welfare on the incident ground.”	“I’ve noticed that our managers are visiting more often without any notice. Lately our manager has been popping in and drilling the on-duty crew. To be honest, us firefighters feel uncomfortable in general around them. Whenever we see them it seems to be only for negative reasons. I personally don’t feel valued or cared about by my managers, my mental wellbeing has taken a negative dive from recent encounters with my manager.”
“Also, it is fantastic having my immediate manager visit on Wednesday’s. The rumor mill dies a quick death, we learn about each other, stories shared, and casual advice asked for and given.”	“Managers meeting-free Wednesday is a shallow attempt- they turn up with lists - not a compassionate experience.”
“The removal of the absence indicator has changed my mental wellbeing in a positive way. I didn’t realize how much I would worry about that when it came to taking days off work for sickness.”	“The effort so far in actions is more a box ticking exercise than a genuine effort to improve things.”
“The removal of the absence indicator system has positively affected myself and those around me. In the sense that we feel like we are not being ‘monitored’ for taking time off to look after our bodies and mental health.”	“I just hope it continues because there is a long way to go to rebuild trust within our organization.”
“Witnessing the combined efforts of our managers and local unions to move forward and work together are great! Hopefully it continues and doesn’t fall over when the funding runs out.”	“I have found the changes brought about by the whanaungatanga project to have been potentially effective, but then the way in which they were implemented has been less than ideal, which has a further detrimental effect on my wellbeing.”
“NHQ hui for firefighters who have been in the job for a year. Great to meet non-operational staff and see the passion they have for their roles and the care for operational staff.”	

were being genuinely acknowledged and addressed. Although cautious, this optimism reflected a growing belief that meaningful improvements were being made, increasing trust in the organization and hope for a better future.

Additional positive feedback highlighted the removal of the absence indicator, which was seen as a positive decision by the organization, contributing to improved employee wellbeing and reduced anxiety around taking sick leave. There were also mentions of improved relations between commanders and union officials, as well as stronger connections between operational and non-operational staff, contributing to a greater sense of cohesion across the organization.

3.3.2. Challenges in the pilot region

While the pilot region saw substantial improvements in positive sentiment, some negative themes persisted. A common issue was skepticism about the implementation of interventions. Although the idea of ‘meeting-free Wednesdays’ was generally well received, a few respondents reported that the initiative was not always executed effectively. In some stations, commanders were perceived as using the time for drills or administrative tasks rather than relationship building, which left some employees feeling that the initiative was superficial rather than meaningful.

Another frequently mentioned issue was the long-standing mistrust between employees and the organization, which some respondents believed could not be resolved quickly. For these individuals, the interventions were seen as a step in the right direction, but they felt that deeper issues - such as those related to collective bargaining and COVID-19 vaccine mandates - would take time to heal. There was also a perception among some employees that certain commanders were more focused on being seen to implement changes, rather than on making genuine improvements in their leadership and support for staff. This perception led to them being cynical about the value of interventions.

3.3.3. Positives in the control region

Although positive sentiment was less prevalent in the control regions compared to the pilot region, several respondents did report improvements over the past year (Table 2). A key theme was the removal of the absence indicator, which many participants felt had reduced anxiety around taking sick leave and was seen as a step toward prioritizing employee wellbeing. This change was frequently mentioned as a meaningful improvement in the work environment. There was also a notable increase in awareness around mental health, with many attributing this to both the Whanaungatanga Program and a wellness pilot collaboration between Fire and Emergency NZ and the Professional Firefighters Union (PFU). Respondents reported that mental health issues, including trauma from on-the-job experiences, were being discussed more openly, and many noted a reduction in the stigma associated with these conversations. The increased frequency of mental health discussions was seen as an important cultural shift within the organization.

Additionally, some employees highlighted improvements in salaries and benefits, including the ability to use superannuation for home purchases. These changes, stemming from collective bargaining efforts, contributed to a more positive outlook on their careers.

3.3.4. Persistent issues in the control regions

Despite these pockets of positive sentiment, the control regions continued to report many of the same organizational issues identified in the 2023 baseline survey. Staffing shortages were a significant concern, with numerous respondents reporting high levels of distress due to excessive workloads and frequent overtime. Many individuals indicated that working long hours negatively affected both their mental and physical health, with some describing the strain it placed on their family lives.

Another persistent theme was the disconnect between frontline staff and senior management. Employees expressed frustration with what

Table 2
Examples of open-text responses from firefighters and commanders in control regions. In all cases, FENZ refers to Fire and Emergency NZ.

Positive	Negative
<p>“The removal of the sickness score system has been a huge relief due to it being a system that does not apply any form of consideration to the health or wellbeing of the person involved, and also didn’t take into account the amount of extra shifts also being worked by the individual. it was a flawed and inaccurate form of measurement.”</p> <p>“Managers have been sending emails acknowledging work above and beyond.”</p>	<p>“I feel like nothing has changed at FENZ since the last Whanaungatanga survey 1 year ago. While I still enjoy my workplace I continue to feel undervalued from the organization with a lack of support to be able to do my job to the best of my abilities.”</p> <p>“I don’t feel the organization values my role. They seem to be spending money on the wrong things, not front-line staff. That makes me feel undervalued. It’s makes me worry about my community, that FENZ is not providing me with the skills and resources to do my job, which is to look after my community and myself. This causes me stress on a number of levels on most days at work. But I feel supported by my fellow firefighters and officers. Overall I like coming to work to be part of the team.”</p>
<p>“Staff are becoming more accepting when individuals express difficulties in their ability to deal with mental health issues. The stigma that used to be present with these situations has disappeared.”</p> <p>“Firefighters definitely have a wider vocabulary when it comes to talking about traumatic events at work, and conversations like that are more common.”</p>	<p>“Lack of staff and a failing fleet are both becoming the biggest factors causing frustration at work and neither problems will be resolved in the near future.”</p> <p>“Continuous excessive work hours i.e. 80+ hours per week have negatively impacted my family life.”</p>
<p>“The salary increase in the CEA has given me more hope that I can stay in this career into the future.”</p>	<p>“Negative impact: Seeing people get employed in offices and paid ridiculous amounts of money for a very minimal amount of productive work or positive return, yet management is happy to make cost cuts in operations and resources where the service we provide truly matters.”</p>
<p>“Being able to use my super for a first home has been a game changer for my partner and I’s future.”</p>	<p>“A disconnect from head office who only seem to turn up to ‘support us’ when in reality it seems more about them being seen or photographed on the front line. I just feel so angry and disgusted about the way I am treated....”</p>

they saw as a lack of accountability and engagement from leadership, with some feeling that senior commanders were more focused on public relations than on addressing operational challenges. This disconnect contributed both to high cynicism, and to a general sense of feeling undervalued by the organization, with many respondents stating that they did not believe Fire and Emergency NZ was investing adequately in frontline staff, equipment, or training.

There were also ongoing concerns about the organization’s prioritization of resources, with some respondents feeling that money was being spent inappropriately on administrative roles rather than on supporting firefighters on the ground. These issues contributed to a continuing sense of dissatisfaction and frustration among employees in the control regions.

3.4. Key themes from interviews with commanders and union representatives

Commanders were generally very positive about the Whanaungatanga Program, acknowledging both the progress made in addressing key organizational issues and the need for its long-term continuation (Table 3). Many felt that the program had successfully highlighted deep-rooted problems around communication and relationships between staff and management, creating a sense of optimism about future changes.

Table 3
Examples of quotations from interviews with commanders and union representatives.

Theme	Quote
Program feedback	<p>“The whanaungatanga program is fantastic. I think the work is groundbreaking. It’s probably long overdue. The results so far have been really interesting. And obviously, we have some major issues that need to be addressed. And I think the tone of it’s all really good, it’s going in a really good direction. I think we’re seeing the state of the nation, warts and all, a lot better than we perhaps have done in the past. And it was not something we could ignore.”</p> <p>“Either way you slice and dice it, the long-term view for doing business up here, it needs things like Whanaungatanga, it has to have that. ...anything that gets people side by side talking is always valuable, the more they [firefighters] realize the managers are just human and the more they [managers] realize you know, that the guys have got a point.”</p> <p>“The whanaungatanga program, is helping us to better relate to people, in my mind we’ve, you know, we get trained, command and control, so we don’t necessarily get a whole lot of training around people skills. So let’s definitely seeing an improvement in the engagement for my staff right across the board... which is positive.”</p>
Meeting free Wednesdays	<p>“Wednesday is now with the no meeting. Wednesday’s is actually my favorite day, getting out round to the fire stations and things. I see it as a real positive thing to actually get closer to the culture. I’ve got to know my crews and my people a lot more, about their kids, some of the issues that are going on, how they feel about things, their aspirations.”</p> <p>“Yes, it’s [meeting-free Wednesdays] been good. I’ve enjoyed it. You feel a closer working relationship with the troops. ... It’s also a little bit of a pressure relief valve actually.”</p> <p>“For me, it’s a bit of a nonsense. I never saw it as a point to create stress for firefighters. For me, it was a tool to go and have a look and see what’s going on with our firefighters. It was a conversation starter.”</p>
Absence indicator	<p>“The absence indicator was an opportunity to have a conversation. Are they being bullied at work? Have they become sick? Are they starting to suffer from a cancer or something? I’ve picked up a number of people [where I’ve said] ‘you should really go get checked out’. And that’s what we no longer have.”</p>
Relationships with the unions	<p>“I think one of the interventions with the NVC training and that has been, has been good. Yeah, it might still work in progress, but it has that has changed some of their thinking, particularly in the local space, not necessarily the [national space].”</p> <p>“Yeah, I haven’t seen much improvement. ... I attend the personnel meetings, including with the union, and they’re still pretty hard work, actually. It does come down to personalities, to a certain extent, some are just a little bit louder and more dogmatic than others.”</p>
Workload and other issues	<p>“From a personal perspective, the continued work on the GM workload, I think we’re still running a little bit of a knife edge there. A lot of people are probably not that far from overload.”</p> <p>“We have gone on and on about our workload. In the major metropolitan areas, that hasn’t been calculated and worked out. Our workload is phenomenal compared to what they do in the provinces.”</p> <p>“We’ll never have enough staff. Because our people are always training or on leave or 15, we’ve got 10 % always injured on long term injury and all that sort of stuff plus your general sickness.”</p>

However, while the overall tone was positive, some commanders noted that the collective trauma and burnout experienced by firefighters over recent years would require more sustained effort to fully address, as organizational changes alone were not enough to heal these deeper issues.

The introduction of ‘meeting-free Wednesdays’ was one of the most positively received interventions. Commanders appreciated the opportunity to visit fire stations and build stronger relationships with their crews. These informal visits helped facilitate better communication and understanding, allowing commanders to engage with firefighters on a more personal level. Despite the positive reception, the increased

workload on other days, due to missed meetings, was seen as a challenge. Nevertheless, most felt that the opportunity to improve relationships outweighed the logistical difficulties.

The removal of the absence indicator sparked mixed reactions among commanders. While many welcomed the change, seeing it as reducing stress around sick leave, others saw the absence indicator as a valuable tool for spotting trends and starting conversations with employees about attendance and wellbeing. Some expressed disappointment at its removal, worrying that without it, they might miss signs of more serious issues among their teams. In addition, there was discussion about union relations; some commanders noting improved collaboration with local union representatives, while others found interactions with the national union more difficult. A few expressed concerns that national union representatives focused more on the organization's image and less on long-term commitment to supporting well-being initiatives.

Reward and recognition were also discussed, with commanders noting progress in streamlining the process for awarding long-service medals, which had been delayed due to COVID-19. While most agreed that this backlog had been addressed, some felt there was still more to be done to ensure that all employees felt valued for their contributions. Despite these positive developments, commanders frequently expressed concern about their workload. While some had developed strategies to manage it, such as delegating more tasks and focusing on self-management, many still felt overwhelmed by administrative tasks and the high volume of emails. The implementation of some organizational changes, such as the delegation of tasks to officers, had not yet been fully operationalized at the time of the interviews, leaving commanders feeling stretched.

4. Discussion

The qualitative analysis of the Whanaungatanga Program demonstrates a substantial shift in workplace sentiment following the implementation of targeted interventions in the pilot region. Both commanders and firefighters expressed a sense of optimism and hope, indicating that the changes were promoting a more supportive and constructive work environment. These early responses, while still cautious, indicate that the program is beginning to address key organizational issues and has laid the groundwork for long-term improvements in organizational culture and employee well-being. This aligns with our aim to evaluate early perceptual shifts in organizational culture and individual experiences, capturing the program's initial impact on firefighter mental health.

Shifting employee cynicism can be particularly challenging, as deeply rooted mistrust can have long-term consequences for organizations and can act as a barrier to change [47]. High levels of cynicism are associated with reduced employee engagement, poor performance, absenteeism, lower job satisfaction, decreased organizational commitment, and increased turnover intention, all of which can undermine organizational effectiveness [24,47,48]. Moreover, absenteeism has been shown to increase in response to exposure to PPTs, further compounding these organizational challenges [49]. The observed reduction in cynicism within the pilot region is therefore especially encouraging, as it suggests that the program may be helping to rebuild trust and engagement, crucial for sustaining positive organizational change.

Although it is premature to make definitive claims about long-term mental health outcomes, the participants' feedback reflects the potential for long-term positive change. The noticeable shift in sentiment within a relatively short period contrasts with prior studies, which typically suggest that interventions require longer time frames to result in significant improvements [50]. Our results therefore suggest that targeted interventions can begin to foster positive effects on morale and well-being sooner than expected. While provisional quantitative data indicated marginal changes in mental health outcomes, organizational perceptions, and behaviors, including a reduction in presenteeism [35], the qualitative analysis presented here captured more substantial shifts

in sentiment. This highlights the value of qualitative methods in revealing nuanced employee experiences, providing critical insights that may not be immediately apparent in quantitative data. These findings offer valuable information for the continued refinement and development of interventions aimed at sustaining long-term improvements and agree with findings from previous qualitative studies [13].

It is likely that the design of the Whanaungatanga Program, with its ground-up approach, was a critical factor in its success. Rather than being imposed from the top down, firefighters were involved at each stage of the intervention development, ensuring that the solutions were directly aligned with their needs and experiences [51]. This participatory model likely led to stronger engagement, as the interventions reflected the realities of their day-to-day work. Many firefighters noted that the workshops were the first time they felt truly heard, highlighting their role as a pivotal component of the program's success. The workshops not only gathered valuable insights but also created a sense of validation and inclusion, which likely fostered trust and engagement. By co-designing the interventions, research suggests that employees feel more ownership over changes and see them as practical and applicable within their unique operational contexts, making engagement more likely [52–54]. More broadly, involving firefighters in decision making through a consultative supervisory approach has been found to enhance job satisfaction and is viewed positively by employees [13,55]. The present study's involvement of firefighters at every step therefore likely contributed to the rapid improvements in organizational sentiment observed during the study. Such a collaborative approach may offer implications for other sectors, suggesting that interventions designed with meaningful employee participation can lead to higher levels of acceptance and long-term success, particularly in high-pressure, high-stress environments [51]. This emphasis on meaningful participation also aligns with research showing that increasing employee control over their core work tasks can have a positive impact on psychological health [56]. While distinct from involvement in intervention design, both approaches reflect the value of fostering autonomy and engagement in the workplace.

Despite the positive impact of the interventions, challenges remain. The broader organizational context, including previous industrial action, the introduction of a medical role (without prior consultation with firefighters), and Covid-19 vaccine mandates, has contributed to a longstanding distrust of leadership, which may have limited the impact of certain interventions. Although improvements in sentiment were observed, some employees expressed doubts about the long-term sustainability of the changes, highlighting the need for ongoing, consistent efforts to rebuild trust. Commanders reported that their workload had not decreased, and there were ongoing issues with high email volumes and overall job demands. Previous studies on firefighters have similarly reported frustration due to excessive administration work [13,43]. It is important to note, however, that several of the interventions targeting these issues, particularly those addressing manager workload, had not been implemented at the time of the interviews; only the necessary actions had been identified. Additionally, variation in management practices across different districts/regions highlights the need for more consistent support and clearer role expectations. Leadership has consistently been shown to influence both physical and mental health outcomes, as positive leadership practices by managers can enhance well-being, while poor leadership is linked to stress and adverse health effects [13,19,57,58]. At the time of the surveys and interviews, the planned leadership interventions were not fully operationalized, which may have contributed to the challenges faced. For example, while 'meeting-free Wednesdays' were positively received in the majority of cases, some participants reported that they were sometimes misused for administrative tasks or training, rather than for relationship-building. Regular evaluation can help capture these unintended consequences and support iterative improvements to intervention design. Addressing these issues will be critical for sustaining the positive changes observed in the pilot region and ensuring that all employees benefit from

improved organizational practices.

While the focus of this program has rightly shifted toward addressing systemic and organizational drivers of distress, it is important to acknowledge that individual-level factors still contribute to how personnel experience and respond to stressors. Coping styles in particular may shape vulnerability to psychological strain, with evidence linking maladaptive strategies such as avoidance and self-blame to increased risk of PTSD in firefighters [15,16,59]. Recognizing this interplay reinforces the need for organizational environments that actively support healthier coping and reduce reliance on individual resilience alone.

Finally, the variability in responses to the interventions can be understood through the lens of perceived organizational support. Employees who viewed the interventions as authentic and reflective of a genuine organizational commitment to wellbeing were more likely to respond with optimism and increased trust. Garcia [21] emphasizes that perceived support is not solely emotional; it also includes instrumental elements such as fair policies, adequate resourcing, and consistent follow-through - factors likely influencing how these interventions were received. Where either relational authenticity or practical support was lacking, efforts were more likely to be seen as superficial, contributing to persistent skepticism. This highlights the need for interventions that not only address structural issues but also foster genuine relationships and trust between management and employees.

4.1. Implications

The findings from this study have significant implications for firefighter organizations and first responders globally. The positive shifts in sentiment observed in the pilot region demonstrate that targeted workplace interventions can lead to substantial improvements, even when initial cynicism is high. These results align with job demands-resources theory [60], which posits that increasing organizational resources such as leadership support, communication, and a sense of value, can mitigate the impact of job demands and enhance employee wellbeing. Similarly, perceived organizational support theory [61] suggests that interventions fostering a supportive work environment can strengthen employees' emotional connections to their organization, leading to greater engagement and morale. This suggests that similar interventions, such as improving communication and fostering a supportive work environment, could be adapted and implemented in other contexts, offering a practical framework for enhancing the mental health and morale of first responders worldwide. By tailoring these interventions to fit specific cultural and operational contexts, organizations can ensure their relevance and effectiveness. Furthermore, there is potential for the program to be expanded to other regions and adapted to include volunteer firefighters in the future, addressing their distinct roles and experiences. Additionally, the emphasis on qualitative analysis highlights the importance of capturing nuanced employee experiences, providing a comprehensive understanding of intervention impacts. Moving forward, it will be crucial to re-evaluate the impact of these interventions on mental health over a longer timeframe to determine whether improvements in mental health follow from increases in perceived organizational support.

4.2. Strengths and limitations

This study's key strength lies in its use of qualitative methods, which provide detailed insights into the early responses to organizational interventions, offering depth and nuance that quantitative data alone cannot capture. The participatory design, involving firefighters in the development of the interventions, enhances ecological validity and ensures that the findings reflect real-world experiences. However, several limitations must be considered. The study's focus on a single pilot region limits the generalizability of the findings, as different regions may face distinct organizational challenges and therefore may require different

interventions. Similarly, while NZ has a large volunteer firefighter workforce, findings from career firefighters may not fully represent the experiences and needs of volunteers, who often face different operational demands and resource constraints. Further, we note the moderate response rates to the optional open-text questions, with 35.8 % (453 of 1264) of 2023 survey participants and 56.6 % (474 of 838) of 2024 participants providing responses. While these rates are consistent with those observed for open-ended questions in similar organizational surveys, they raise the possibility that the qualitative findings may not fully reflect the views of all participants, particularly those who chose not to respond. For example, employees with neutral opinions or lower engagement might be underrepresented. However, the large number of responses (453 and 474) and the increase in participation in 2024 suggest that the data still capture a broad range of perspectives on organizational sentiment shifts.

Additionally, intervention creep, particularly the nationwide removal of the absence indicator, may have affected perceptions in control regions, potentially underestimating the pilot region's specific impacts. While the interventions were intended to be limited to the pilot region, control regions were nevertheless aware of the Whanaungatanga program's broader aims. One of the interventions -removal of the absence indicator- was implemented nationally, due to an inability to switch off this tool at a region only level. Additionally, national communications regarding the program and national survey findings were shared regularly via an intranet portal page, by organizational representatives and by unions. Fifth, the short timeframe of the study also limits the ability to assess the long-term effects of these interventions, as mental health improvements often require sustained efforts over a longer period. Sixth, manual sentiment coding and a flexible thematic framework without a formal codebook may carry subjectivity risks, though multiple coders and consensus discussions reduce this. Interviews, limited to commanders and union representatives, may miss frontline firefighter views, potentially narrowing the study's depth. Though, these were captured to some degree through the open text analysis. Finally, variations in the phrasing of open-text questions between 2023 and 2024 could have influenced responses. The 2024 question's focus on perceived changes, unlike the broader 2023 prompt, likely prompted more targeted reflections on interventions, potentially amplifying the sentiment shift observed in the pilot region. Nevertheless, if the more specific 2024 question about change had elicited more positive responses, this effect would likely have been observed across both pilot and control regions, which was not the case.

5. Conclusions

In conclusion, qualitative analysis of the Whanaungatanga Program demonstrates that even after a relatively short timeframe, targeted workplace interventions can lead to rapid and measurable improvements in employee sentiment that may not be immediately observable in quantitative data. These findings highlight the value of a positive participatory organizational intervention approach in designing organizational changes that resonate with employee needs and promote a more positive work environment. While exposure to PPTes is an unavoidable aspect of firefighting, creating a supportive organizational environment can play a critical role in improving employee wellbeing, potentially mitigating the impacts of other factors, such as PPTes and out-of-work stressors, on mental health [12]. As the next step, it will be essential to build on these successes by refining the interventions and considering their implementation in control areas and other regions. Expanding these targeted strategies more broadly could provide a scalable framework for enhancing organizational wellbeing and resilience across diverse settings.

CRediT authorship contribution statement

Jessica L. Campbell: Writing – review & editing, Writing – original

draft, Project administration, Investigation, Formal analysis, Data curation. **Josh Darby:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Paul Oswald:** Writing – review & editing, Investigation, Formal analysis. **Lisa Mackay:** Writing – review & editing, Project administration, Methodology, Investigation, Funding acquisition, Data curation, Conceptualization. **Grant Schofield:** Writing – review & editing, Supervision, Methodology, Investigation, Funding acquisition, Conceptualization.

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Declaration of competing interest

Nothing to declare.

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