

The shape of the New Zealand child injury prevention workforce

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Unintentional child injury represents a considerable public health burden globally¹ and in New Zealand.² Injuries are the third-leading cause of death among children aged 0 to 14 years³ in New Zealand, and the second leading cause of hospitalisation after respiratory diseases.⁴ Māori experience disproportionate rates of injuries in comparison to non-Māori and non-Pacific peoples, are more likely to have tamariki (children) experience greater rates of long-term disabilities, and more likely to sustain a socioeconomic impact on discretionary income.⁵ These outcomes are in breach of the rights of Māori to equitable outcomes as promised in Te Tiriti o Waitangi.^{6,7} The prevention of unintentional child injury is an area of interest among multiple agencies across New Zealand's public service and not-for-profit sector, including the Ministry of Health, the Accident Compensation Corporation (ACC), Kāinga Ora (the Crown housing agency), District Health Boards (DHBs), Healthy Home Initiatives, Family Start, Plunket, Emergency Medical Services providers, Fire and Emergency services, rūnanga (representatives of a Māori [New Zealand's indigenous population] administrative body of the iwi), iwi (a regionally-based Māori community group) and other community providers. Safekids Aotearoa is a national child injury prevention service that aims to help reduce the high rates of unintentional injury among children (0–14 years) in New Zealand. As a member of Safekids Worldwide, an international network of 32 countries, Safekids Aotearoa provides input to international best practices on

Abstract

Objective: To describe the characteristics of the New Zealand child injury prevention workforce and the organisations they represent.

Methods: Representatives of organisations on the Safekids Aotearoa database were invited to complete an online survey. The standardised questionnaire asked for information about injury prevention focus and expertise, communication preferences and information access.

Results: Of 196 respondents, the majority were female and identified as New Zealand European. For only a small proportion of respondents, child injury prevention is the main focus of their role. The key sources of child injury data and injury prevention information identified was Safekids Aotearoa, followed by the Ministry of Health. Respondents indicated that they would like to receive information on new research, training opportunities and upcoming events, and information from other organisations.

Conclusions: Males and people of Pacific and Asian ethnicity are under-represented in the New Zealand child injury prevention workforce in New Zealand. The low engagement of the sector with Māori authorities is of concern, given the inequities in rates of child injury that exist.

Implications for public health: There is a need to conduct a wider and more regular audit of the child injury prevention sector to determine its composition and identify areas of concern.

Key words: child, child injury, injury prevention, New Zealand

injury prevention for children. Safekids Aotearoa's services are currently funded by the Ministry of Health, the ACC and the Starship Foundation. They design, deliver and evaluate practical programs that seek to reduce injury risks and work with industry groups and standards committees to recognise and address product safety issues that have a potential impact on the safety of children. Safekids Aotearoa provides technical, evidence-based advice to ensure that New Zealand's local and national laws, policies and guidelines include steps to protect children from unintentional injury. They have developed capability that utilises digital platforms (website and social media) to address unintentional injury inequities for Māori and Pacific children by leveraging

Māori and Pacific expertise and capability to develop and share digital information, resources, tools and opportunities.

Reducing the morbidity and mortality associated with child injury in New Zealand will require a sufficiently sized and skilled workforce.^{8,9} As has been noted in other areas of public health, quantifying the size and profile of the workforce can be challenging,¹⁰ but it is a critical first step in assessing workforce capacity.¹¹ We found only one published Australasian study investigating the injury prevention workforce.⁹ A Western Australian survey by Jancey et al. of the injury prevention and safety promotion workforce identified a number of challenges associated with their roles including: limited staff and

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resources, funding constraints, and lack of knowledge and attitudes toward injury prevention in the community and therefore low community engagement.⁹

Safekids Aotearoa provides services that connect policymakers, educators and other New Zealand stakeholders in the sector with child injury data, trends and emerging issues and local and international research, as well as resources on evidence-based injury prevention interventions. However, Safekids Aotearoa's network of unintentional child injury prevention providers and organisations is largely informal and dispersed from a geographical, organisational and sectorial basis. While many of the stakeholders are known to individuals working in the field or to groups working in a particular area of interest, there is no collective awareness of the potential weight in numbers and expertise. Therefore, the aim of this exploratory research was to describe the characteristics of the New Zealand child injury prevention workforce and the organisations they represent. The findings have the potential to enhance connectivity around the common interest of child injury prevention and identify opportunities for extending the reach of initiatives.

Methods

In this descriptive study, individuals and organisations/groups involved in the prevention of child injury in New Zealand were invited to complete an online survey. The domains of interest included: respondent demographic information, organisational information, areas of injury prevention focus and expertise, and networking and communication preferences. The questionnaire consisted of 35 questions (see Supplementary Information) and took approximately 15 minutes to complete. Where possible, items were derived or adapted from existing research.^{9,11-13} The survey was piloted with three people from the injury prevention field and modified where required. A covering email from Safekids Aotearoa was sent to their existing networks inviting prospective participants to take part; the email included the principal investigator's contact details (in case potential participants wished to ask questions about the study), the participant information sheet and a link to the online Qualtrics survey.¹⁴ At the time the study took place, Safekids Aotearoa had 1,740 agencies/individuals in their database, although it was likely that the database was out of date, and they estimated

there were likely to be 1,000 active users. On this basis, we conservatively estimated a 40% response rate that would result in around 200 respondents. In addition, a snowball sampling method was used to recruit additional potential participants, whereby respondents were asked to forward the email to others to whom they thought the survey may be relevant. Safekids Aotearoa also promoted the survey on their website. However, the 'forward to a friend link' that was tracked through the email campaign indicated that no emails were forwarded. This information has been added to the Results.

The first email campaign was sent on 22 June 2020 (n=1,720) and a follow-up email campaign was sent on 1 July 2020 (n=1,662). There were fewer than 5% (n=77/1720) bounce backs from the initial email campaign. A further 20% (n=326/1662) of emails bounced back from the follow-up reminder campaign.

The study collected work-related personal identifiable information such as individual/organisation name and contact details (email, website, address, etc.) to augment the existing Safekids Aotearoa database, which has been built up over a period of time but has not been formally updated. The database serves as a directory of individuals, groups and organisations involved in child injury prevention in New Zealand.

The data were extracted from Qualtrics, and after data cleaning were analysed in Microsoft Office Excel. Descriptive statistics including frequencies and percentages were used to summarise the data. The study received ethics approval from the University of Auckland Human Participants Ethics Committee (Reference 024109).

Results

One hundred and ninety-six individuals responded to the survey. Of these, the majority were female (n=96/127; 75.6%), and New Zealand European (n=79/122; 64.8%), see Table 1. The proportion of respondents who identified as Māori was high (n=26/122; 21.3%); however, those identifying as Pacific or Asian were underrepresented (4.1% and 4.9%, respectively). Respondents held a variety of roles within their organisations, most commonly as health professionals (n=22/127; 17.3%). The majority worked 30 or more hours per week (n=107/126, 84.9%). Injury prevention was the primary focus of roles for 22.0% (n=28/127) of respondents, with the majority (n=81/120; 67.5%) working

10 hours a week or fewer on child injury prevention.

There was a broad range of principal injury prevention focus areas among respondents. Ten per cent of respondents said they focused on all forms of injuries (n=25/126; 9.8%). Just over one-third said they had a single area of injury prevention focus (n=36/126; 28.6%), and 42% said they had four or more focus areas (n=52/126; 41.5%). The five most commonly reported areas of focus were community injury prevention, home safety, family violence/child abuse, health promotion and road traffic injury/road safety.

The leading organisations that respondents worked for were government departments/agencies (n=26/118; 22.0%), followed closely by District Health Boards (n=25/118; 21.2%), see Table 2. Responses were received from staff employed by five of New Zealand's 20 District Health Boards. Most of these organisations had been operating for more than 10 years (n=90/113; 79.6%) and with nationwide reach (n=48/118; 40.7%). Almost half of respondents (n=54/111; 48.6%) said their organisation catered to all age groups, while one-quarter (n=35/111; 31.5%) catered to children (0–14 years old). Only 17% (n=19/113) of organisations were associated with a Māori authority such as a marae, subsidiary of iwi organisation, iwi or hapū.

Just under half (n=15/32) of the organisations represented in the survey had 10 or more staff involved in injury prevention. More than three-quarters of organisations provided injury prevention services for Māori (n=86/111; 77.5%), and slightly less provided services for Pacific people (n=80/111; 72.1%). Among those who responded to their organisation's source of funding (n=55), the central government was the most common source (n=26/55).

Regarding how respondents would like to receive information concerning child injury prevention, most preferred email updates (n=72/74; 97.3%), see Table 3. When asked what types of information they would like to receive, 77.0% (n=57/74) wanted information regarding new research, 73.0% (n=54/74) wanted to know about upcoming activities of other organisations and 63.5% (n=47/74) were interested in new training opportunities. When asked if respondents would like to receive information about other organisations working in child injury prevention, more than one-third said yes (n=71/196; 36.2%).

Respondents most commonly referred to Safekids (n=72/108; 66.7%) and the Ministry of Health (n=54/108; 50.0%) for any data

relating to child injury. Similarly, Safekids (n=85/105; 81.0%) and the Ministry of Health (n=63/105; 60.0%) were the primary sources of child injury prevention information.

In terms of representation, women were working significantly more hours in child injury prevention compared to men. Similarly, NZ European staff spent more hours on child injury prevention compared to other ethnicities (Table 4). Most full-time staff spent about 1–10 hours (n=68/119) in child injury prevention.

Discussion

To our knowledge, this is the first study to understand the characteristics of the child injury prevention workforce in New Zealand and the organisations involved. The findings are consistent with a study by Jancey et al. that sought to establish the characteristics of the Western Australian injury prevention and safety promotion workforce.⁹ Similar to the present study, they found more than three-quarters of respondents were female. Unlike our study, only 56% of respondents in the Western Australian study worked full time – compared to 85% in our survey. In our study, 22% of respondents worked for a government department or agency, compared with 19% in the Jancey study. A similar proportion was employed by district health boards or their equivalents in both studies (~20%). In the current study, for 32% of respondents, the focus was children (0–14 years), consistent with 31% in the Jancey study.

Given that Asian children are projected to make up 22% of all New Zealand children by 2038,¹⁵ fewer than 5% of respondents identifying as Asian is of concern.¹⁵ The lack of Pacific respondents is also of concern (<5%), as Pacific children makeup 9% of injury deaths in New Zealand and 13% of all child injury admissions to hospital.¹⁶

A study conducted in 2009 in New Zealand by Bland et al.¹⁷ aimed to evaluate the status of New Zealand's child and adolescent unintentional injury prevention. The study used the methodology of the European Child Safety Alliance Child Safety Report Card.¹⁸ The Report Card methodology presents a country's child injury mortality rates and selected social determinants, and summarises and assesses a country's adoption, implementation, and – where relevant as appropriate – enforcement of evidenced good practice policies that support child safety. The authors of the New Zealand report Card study concluded that

Table 1: Characteristics of individual respondents (n= 196).

Characteristic	Frequency	Percentage
Gender (n=127)		
Female	96	75.6%
Male	31	24.4%
Ethnicity (n=122)		
Māori	26	21.3%
Pacific	5	4.1%
New Zealand European	79	64.8%
Asian	6	4.9%
European/Other ^a	26	21.3%
Role within their organisation (n=127)		
Health professional	22	17.3%
Education	19	15.0%
Injury prevention	17	13.4%
Well-child services	10	7.9%
Local government	8	6.3%
Community, social worker or social assistance	8	6.3%
Child and whānau services	5	3.9%
Māori services	4	3.1%
Management	4	3.1%
Other ^b	30	23.6%
Hours worked in the role (n=126)		
Full time (30 + hours per week)	107	84.9%
Part-time	19	15.1%
Injury primary focus of role (n=127)		
No	99	78.0%
Yes	28	22.0%
Hours worked in child injury prevention per week (n=120)		
1 to 10 hours	81	67.5%
11 to 20 hours	19	15.8%
31 to 40 hours	14	11.7%
21 to 30 hours	6	5.0%
Areas of injury prevention focus (could select as many as applied) (n=126)		
All injury	25	19.8%
1 area	36	28.6%
2-3 areas	13	10.3%
4 or more areas	52	41.5%

Notes:

a: European not further defined, Other European, Middle Eastern, Latin American/Hispanic, Russian, Tahitian

b: Policy development/planning, Research, Information specialist, new migrant or refugee services, Central government, Media, marketing, communications, advocates, Child or Restraint Technician/Trainer/Assessor, Community paediatric nurse, Emergency services, Healthy Homes Case Manager, Crown Entity, Lawyer, Play Specialist, Police, Public Health nurses, Road Safety, supplier, sustainability, ravel Behaviour Change, volunteer

in addition to not having implemented a number of evidence-based injury prevention policies, New Zealand lacks specific targets and national strategies, as well as ministerial or government departments with mandated responsibility for all aspects of child safety. More than a decade later, little has changed. The findings of this research suggest there is value in national child injury prevention workforce surveys of this nature to assist with workforce planning, and to identify opportunities for those involved in the field for strategic planning, disseminating information, professional development and networking. The information gained will assist in achieving a collaborative sector able to address child injury prevention and safety

promotion. Future surveys could build on the findings of this research but expand the focus to gather data on professional background, qualifications and challenges for the sector and injury prevention roles. In addition, future research should explore the relationships, networks and patterns of interaction between the providers of child injury prevention services. Previous research by Begley et al.¹¹ indicates that a lack of a specialist workforce and health promotion workforce can reduce the effectiveness of programs and services.

The support by more than one-third of respondents in this study for receiving information from other organisations working in child injury prevention is supported by Hanson et al.'s social network

Table 2: Respondent organisation characteristics (n=118).

Characteristic	Frequency	%
Organisation type (n=118)		
Government department / agency	26	22.0%
District Health Board	25	21.2%
Support agency/advocacy group/Non-Government Organisation	18	15.3%
Education provider	12	10.2%
Māori health provider	8	6.8%
City / district / regional council (TLA)	7	5.9%
Primary health care provider / PHO	5	4.2%
Independent researcher / consultant	5	4.2%
Other ^a	10	8.5%
Duration organisation has been operating (n=113)		
More than 10 years	90	79.6%
2–5 years	9	8.0%
Unknown	7	6.2%
6–10 years	6	5.3%
Less than 2 years	1	0.9%
Geographic focus of your group's/organisation's activities/reach (n=118)		
National	48	40.7%
Local (city /town)	38	32.2%
Regional (more than one DHB or TLA)	25	21.2%
Iwi-based	6	5.1%
International	1	0.8%
Age group focus (could select as many as applied) (n=111)		
All age groups	54	48.6%
All children (0–14 years)	35	31.5%
Children (0–4 years)	27	24.3%
Children (5–9 years)	11	9.9%
Children (10–14 years)	9	8.1%
All adults	7	6.3%
Young people (15–24)	14	12.6%
Adults (15–64)	9	8.1%
Older people (65+)	6	5.4%
Association with Māori authority (n=113)		
Yes	19	16.8%
No	77	68.1%
Unsure	17	15.0%
Number of other people in the organisation with a child injury prevention responsibility (n=32)		
1 to 3	11	34.4%
4 to 6	3	9.4%
6 to 9	3	9.4%
10 or more	15	46.9%
Groups serviced (could select as many as applied) (n=111)		
Families or whanau	100	90.1%
Māori	86	77.5%
Pacific people	80	72.1%
Women	70	63.1%
Men	65	58.6%
Asian people	64	57.7%
New migrants	60	54.1%
Rural or remote communities	60	54.1%
Refugees	57	51.4%
People with disabilities, please specify	50	45.0%
Professional practice	39	35.1%
Other ^a	28	25.2%
Organisation funding (n=55)		
Ministry of Health	6	10.9%
Other central government	20	36.4%
Local government	5	9.1%
DHB	5	9.1%
Grants, donations, etc	5	9.1%
Other ^b	14	25.5%

Notes:

a: Charity, Research organisation, Commercial business, Content producer, Education and Advocacy, Emergency Services, independent business, University/Tertiary education

b: Community organisations, assets/services, contracts, rates, private, commissioning agencies, fundraising

analysis research that suggests establishing relationships with external agencies is an important mechanism for community injury prevention.¹⁹ This also demonstrates a gap in resources across the injury prevention sector specifically, and workforce development and networking with child wellbeing and child safety-related areas. Safekids Aotearoa's community-based prevention marketing and community engagement approaches have been pivotal in the organisation's shift towards addressing inequities and culturally responsive health communications²⁰ as well as highlighting the importance of ensuring that there is consistent messaging. The provision of information about child injury from several data sources allows for the development of a suite of injury performance indicators that can be used to monitor childhood injury reduction strategies at a regional and national level.¹² Safekids Aotearoa has a key role to play in this space to ensure we build tailored culturally responsive and evidence-based frameworks of health and behaviour change to empower communities to tailor them according to their needs and health aspirations.

Strengths and limitations

The strengths of this study include the national focus of the survey and the use of the snowballing technique to increase exposure to the survey through existing networks. The domains of interest are relevant to the New Zealand context and include references to issues relevant to Te Tiriti o Waitangi obligations such as appropriate Māori staffing levels, a significant focus on Māori child injury prevention, and advocating for integrated health communications that support kaupapa Māori and bottom-up approaches in injury prevention messaging and health promotion.

However, the findings need to be considered in light of several limitations. The study used self-reported data and therefore there may be issues concerning response bias.²¹ Respondents may over-report injury prevention activities that are perceived to be desirable, resulting in social desirability bias.²² Respondents could select as many areas as applied to the focus of their injury prevention work; this meant we were unable to quantify how the focus of the workforce aligns with the burden of child injury in New Zealand. This would be a valuable addition to future workforce surveys.

Conclusion

The findings of this research have been an initial first step in exploring the child injury prevention workforce in New Zealand. The survey has highlighted areas of the workforce that are under-represented including males, and people of Pacific and Asian ethnicity. The low engagement of the sector with Māori authorities is of concern, given the inequities in rates of child injury that exist. Effective public health action to address child injury in New Zealand requires a national child injury prevention strategy that is comprehensive, sustainable, and adequately resourced.

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Table 3: Information and communication relevant to child injury prevention (n=74).

Variable	Frequency	%
Preferred methods of communication (could select as many as applied) (n=74)		
Email updates	72	97.3%
Digital monthly newsletter	27	36.5%
Facebook page	12	16.2%
Blog posts	4	5.4%
Information you would like to receive (could select as many as applied) (n=71)		
New research and information (e.g., factsheets, presentations)	57	80.3%
Upcoming activities of other organisations	54	76.1%
Resources	51	71.8%
Trainings	47	66.2%
Jobs and opportunities	18	25.4%
Other ^a	4	5.6%
Child injury data sources (could select as many as applied) (n=108)		
Safekids	72	66.7%
Ministry of Health	54	50.0%
The National Injury Query System	18	16.7%
Don't currently access child injury data	17	15.7%
Other ^b	29	26.9%
Child injury prevention information sources (could select as many as applied) (n=105)		
Safekids	85	81.0%
Ministry of Health	63	60.0%
ACC	44	41.9%
Wellchild.org.nz	22	21.0%
World Health Organization	24	22.9%
Centre for Disease Control	10	9.5%
Other ^c	27	25.7%

Notes

- a: Statistics and data Māori specific information, funding opportunities, products
- b: Oranga Tamariki, Recreation Aotearoa, Mana Kidz, Trauma Registry, NZ Police, Fire and Emergency, ACC, Child and Youth Mortality Review Committee (CYMRC) data reports, Starship Trauma Database, Environmental Health Indicators NZ Report Environmental Protection Authority (EPA) Hazardous Substances Monitoring Report, Burn Registry of Australia and New Zealand, NZ Transport Agency (NZTA), Facebook, DHBS, CYMRC data reports
- c: Child Matters, Oranga Tamariki, Te Ohaakii a Hine-National, Network Ending Sexual Violence Together (TOAH NNEST), Australia and New Zealand School of Government (ANZSOG), UNICEF, Plunket, Mana Kidz, Starship, other government agencies, peer-reviewed research, universities

Table 4: Hours worked per week in child injury prevention.

Variables	Hours worked			
	1-10 hours	11-20 hours	21-30 hours	31-40 hours
Gender (n=120)				
Male	23	4	1	2
Female	58	15	5	12
Ethnicity (n=120)				
Māori	12.0	5.0	1.0	4.0
Pacific	2.0	2.0	0.0	1.0
NZ European	67.0	14.0	6.0	10.0
Asian and other	3.0	2.0	0.0	0.0
Employment status (n=119)				
Full time (30 + hours per week)	68	16	4	13
Part-time	12	3	2	1

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Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary File 1: Child Injury Prevention Network Mapping.