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Linking national data to examine the wellbeing of children in Australian veteran families

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Presentation overview



- Context: why this matters
- Research questions
- Design & methods
- Findings
- Data capability and limitations
- Implications

Context: why this matters

- The **Royal Commission into Defence and Veteran Suicide** highlighted the significant effects of military service on the families of current and former serving members.
- The Defence and Veteran Family Wellbeing Strategy calls for **better use of existing data** to understand veteran family wellbeing.
- Despite the importance, the health and wellbeing of children in veteran families **remains poorly described in national evidence**
- Policy and service planning need both **population-level evidence and deeper family-context information**.
- **Linked datasets** provide a unique opportunity to fill this **evidence gap**.



DVA Wellbeing Framework

Research Questions

- What do **linked national data** tell us about the **socio-demographic characteristics and health of children in veteran families**, and how it compares with children in non-veteran families?
- Where do these data give useful information about veteran children's wellbeing, and where are they limited?
- What do the findings suggest as **priorities** for future research and **data development**?

How data from different sources is integrated (linked)

Data linkage combines data from different sources that relate to the same entity (e.g. person) to create a richer, more complete data source.

1. DATA FROM DIFFERENT SOURCES
(Routinely collected data)

Hospital admissions

ID	Event date	Diagnosis
1001	12 Feb 2022	J18.9
...	...	...

Emergency department

ID	Event date	Reason
1001	11 Feb 2022	Breathing diff.
...	...	

Pharmaceutical benefits

ID	Dispense date	Drug
1001	20 Aug 2022	Metformin
...	...	...

Medicare services

ID	Service date	Service
1001	10 Feb 2022	GP consult
...	...	...

Each source has information about the same person, but only part of the picture.

2. DATA LINKAGE
(Record matching)

Records that refer to the same person are identified and linked using identifiers (e.g. name, date of birth, sex, address).



Each linked record represents a single person across different sources and over time.

3. LINKED DATA

A richer, more complete view of the person across services and over time.

One person – single view across sources and time

Date	Hospital admissions	Emergency department	Pharmaceutical benefits	Medicare services
11 Feb 2022		✓		
12 Feb 2022	✓			✓
20 Aug 2022			✓	✓
15 Jan 2023		✓		
16 Jan 2023			✓	✓
03 Apr 2024			✓	✓
...	...	...	...	...

Enables enhanced analysis, e.g. service use over time, disease outcomes, prevention measures, cause and effect relationships, and longitudinal studies.

Multiple data sources (routinely collected) → Records are matched (deterministic or probabilistic methods) → Records for the same person are linked into one timeline → A richer, more complete dataset is created → Better evidence for decision making, policy and research

Methods

Both studies: used linked data in ABS PLIDA

- ‘Children’ = people of any age living with their parent(s) on Census night; veteran parents identified by the Census 2021 ADF service question
- Children with veteran parent/s compared with children with non-veteran parents
- Descriptive, point-in-time snapshots — no causal links established

Study 1: 2021 Census & linked Defence Personnel data

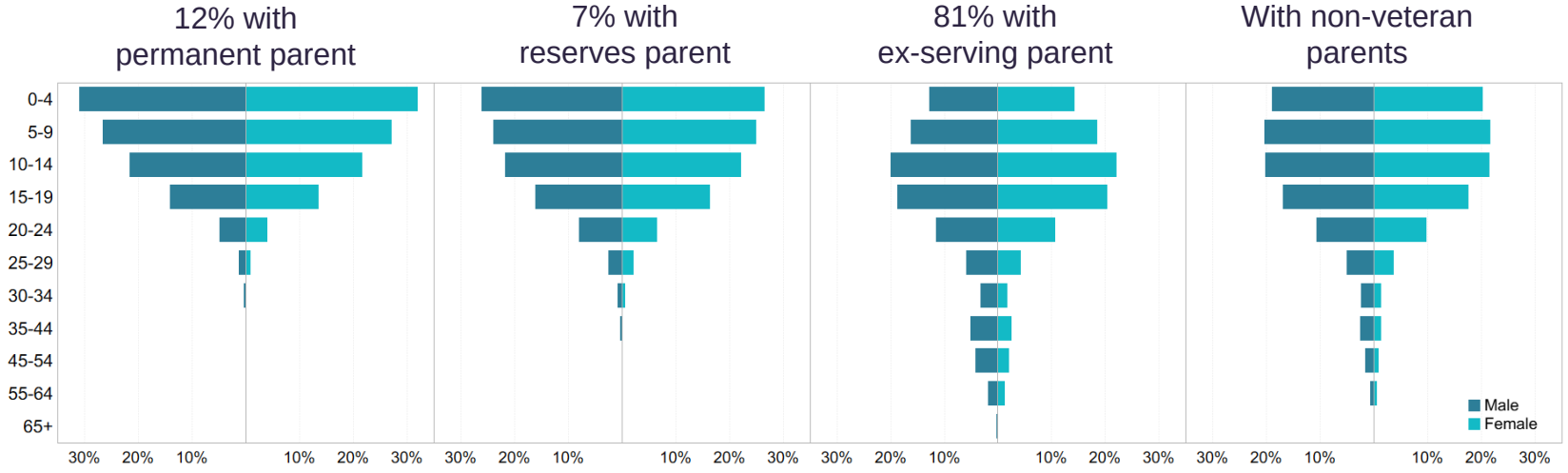
- **Measures:** demographics (e.g. family type, income) and prevalence of long-term health conditions, including multimorbidity
- **Analysis:** comparison by age group, sex, dependency status and parent’s service-related characteristics
- **Why linkage needed:** links children’s Census characteristics to the veteran parent’s service-related characteristics

Study 2: 2021 Census & linked National Health Survey data

- **Measures:** health-risk behaviours (alcohol, smoking, vaping, activity); physical health (including self-assessed); mental health (including psychological distress and its impact on daily activities)
- **Analysis:** weighted percentages and where possible, age-adjusted regression models
- **Why linkage needed:** the NHS alone cannot reliably identify parent–child veteran relationships; linkage identifies more children

Descriptive findings from 2021 Census - demographics

- **238,000 children** live with **152,000 veteran parents**
- Age and dependency status of children living with veteran parents:
  - 57% (136,000) - **dependent children aged 0-14**
  - 18% (42,300) - **dependent students aged 15-24**
  - 11% (26, 200) - **non-dependent children aged 15-24**
  - 14% (33,600) - **non-dependent children 25+**
- Age and sex distribution of children differed by parent service status



Descriptive findings from 2021 Census – health

Children 0-14

- Children with one or more veteran parents and those with non-veteran parents had **comparable prevalence of long-term health conditions** (13% and 12%) and **multimorbidity** (0.6% and 0.5%).
- **Asthma** was the most common health condition for children 0-14.

Children 0-14	non-veteran parents	ex-serving parents	reserves parents	permanent parents
asthma	6.6%	6.3%	5.3%	5.3%

Children 15-24

- **Dependent students** w ons compared with 20% for
- **Non-dependent children** with one or more veteran parents had a 28% prevalence of long-term health conditions compared with 24% for those with non-veteran parents.
- Among children with **ex-serving parents**, **multimorbidity was more common in non-dependent children** of both sexes compared with dependent students (Males: 2.3% and 1.4%, Females: 4.3% and 2.8%, respectively)
- **Mental health conditions were the most common long-term health condition for veterans' children aged over 15 years** irrespective of the children's dependency status, number of veteran parents, or parents' service status.

Descriptive findings from Linked Census and Defence Personnel data

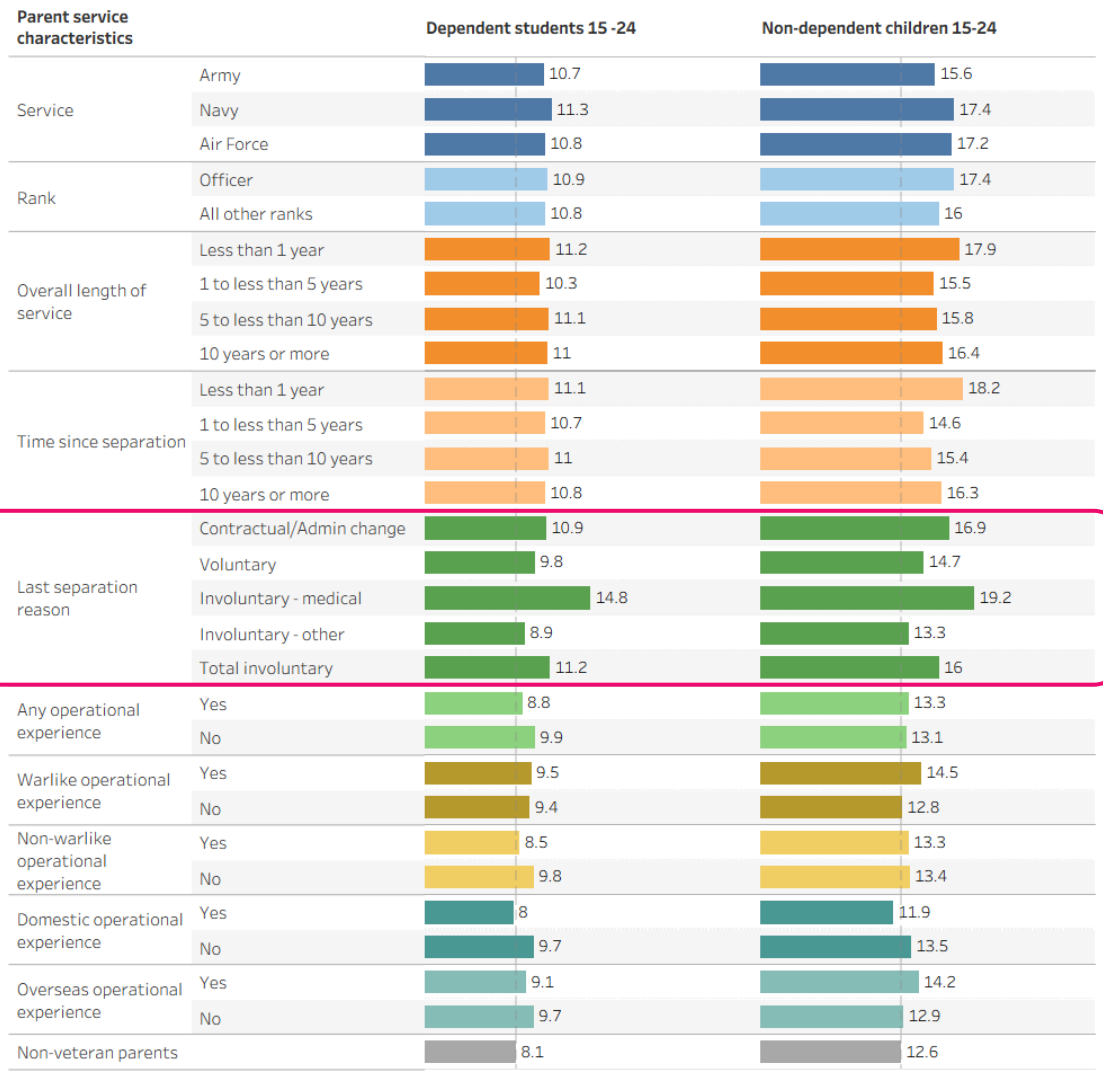
- **176,000/ 238,000** children had a veteran parent who also linked to Defence Personnel data.

- 8.3% (19,800) of all children living with veteran parents had a **long-term mental health condition** compared with 5.8% of all children living with non-veteran parents.

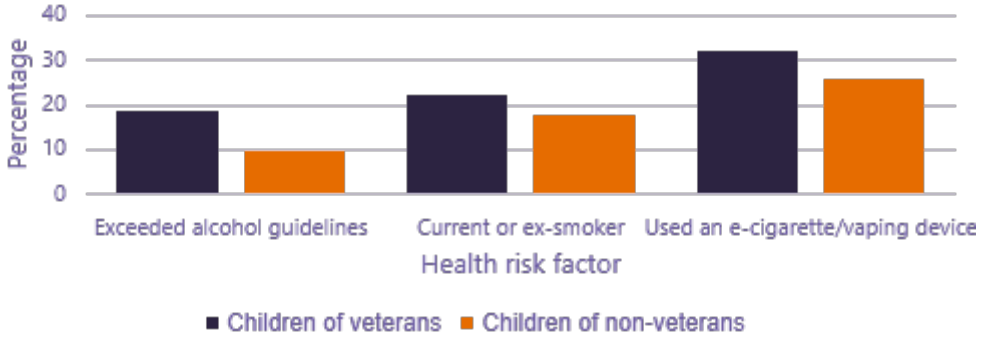
- **Mental health conditions among children aged 15–24:**
  - **Non-dependent children with a veteran parent** who had **served in both permanent and reserves services** had highest prevalence (19-23%). Non-dependent children with non-veterans' parents (13%).

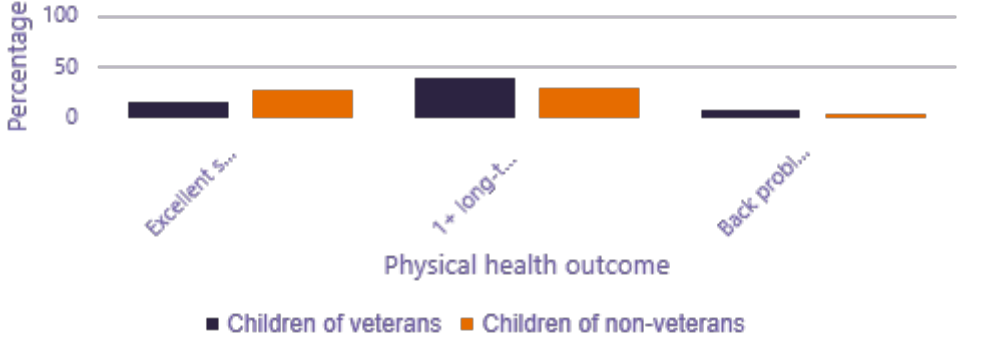
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Proportion of **dependent students** and **non-dependent children (15-24)**, with a mental health condition by veteran parent service characteristics



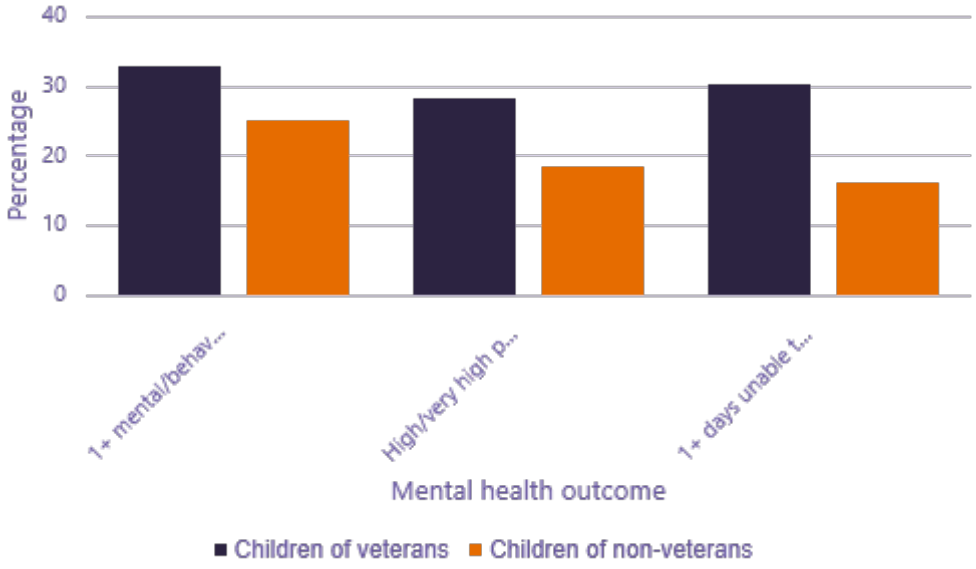
Health & health risk factors (NHS)





- Differences in health risk factors, self-assessed health and physical health conditions were no longer evident after adjusting for age, suggesting they may partly reflect the older age profile of children living with veteran parents.
- **Overall message:** findings are mostly similar once age is considered, with back problems a possible signal for future monitoring.

Mental health (NHS)



- Findings were consistently in the direction of poorer mental health and psychological wellbeing for children living with veteran parents.
- Difference in high or very high psychological distress was not evident after age adjustment.
- *Overall message: mental health and functional impacts are important indicators to include in future monitoring.*

Key findings synthesis: what the evidence says

- Children in veteran families were **broadly comparable to civilian peers** across most health-risk and physical-health indicators — in both the population-level Census analysis and the detailed survey analysis.
- Age explains many apparent differences. **Veteran children skew older**, and once age is adjusted, alcohol, vaping, self-assessed health and physical-condition gaps disappear — back problems being the exception.
- **Mental health** was the one signal **replicated across both studies**: it was the most common long-term condition among older veteran children (Census), and the only domain where differences persisted after age adjustment
- **Functional impact** matters as much as prevalence: among children reporting distress, those in veteran families were far more likely to say feelings stopped their work, study or usual activities (30% vs 16%).
- Analysis to date suggests that **risk concentrates in sub-groups** — most visibly among children of ex-serving parents who separated for involuntary medical reasons and non-dependent children over 15 living with their veteran parent.

Linkage - data capability

- Findings demonstrate the value of linked national data for **family-centred research, policy and service planning**
- PLIDA **linkage of the Census to selected ABS surveys** improved the ability to identify veterans and co-resident family members
- **Linkage of Census to Defence personnel data** allows analysis of children by detailed parent service characteristics

Linkage - limitations

- **Census has strong population coverage** and describes children in veteran families nationally, **but measures are broad, with limited detail on severity, functioning and behaviours**
- NHS-Census linkage provides more detailed measures of physical health, mental health, psychological distress and health-risk factors, but **small samples and limited capacity for age disaggregated analysis**
- Survey responses are self-assessed and administrative data may not contain variables of interest
- **Children not co-resident (living)** with a veteran parent remain a **major blind spot** across all datasets examined

Why this matters

- This is the **first national baseline for veteran children's health** — a direct response to the Royal Commission's call to **use existing data better** and increase our knowledge and understanding through **new research and data development**
- Findings support **proportionate, targeted monitoring** rather than universal new services

Recommendations and next steps

- Consider linkage of national and jurisdiction datasets to measure and monitor the wellbeing of veterans and their family members in a whole-of-family context
- Strengthen detection of children whose veteran parent(s) live elsewhere
- Use longitudinal data to explore causal questions and examine whether differences persist, widen or narrow

Project partners and contributors

Both research projects were commissioned by the Department of Veterans' Affairs. We gratefully acknowledge the contributions of DVA, the Department of Defence, the Australian Bureau of Statistics (ABS) and other colleagues to the data development work.



APPENDIX — SUPPORTING DETAIL

Linked 2021 Census and Defence Personnel data

176,000 children from the 2021 Census had veteran parent who also linked to Defence Personnel data

Among children aged 15–24:

- **mental health conditions** were most prevalent among non-dependent children aged 15–24 years with a veteran parent who had served in both permanent and reserves services:
  - 23% for children with a parent currently serving in the permanent service who previously served in the reserves service
  - 20% for children with a parent currently serving in the reserves service who previously served in the permanent service
  - 19% for children with a parent who previously served in both the permanent and reserves services
  - the prevalence was 13% for non-dependent children aged 15–24 years with non-veterans' parents.
- Compared with **children aged 15–24 years** of ex-serving parents who separated from the ADF for **voluntary** reasons, children with an ex-serving parent who separated for **involuntary medical** reasons had a higher prevalence of mental health conditions
  - Dependent students – involuntary 15%; voluntary 9.8%
  - Non-dependent children – involuntary 19%; voluntary 15%

Descriptive findings from 2021 Census – health

Prevalence in all age groups

	one or more veteran parents	non-veteran parents
1	mental health conditions (8.3%)	asthma (7.4%)
2	asthma (7.3%)	mental health conditions (5.8%)
	other long-	other long-

Role of linkage

Brings together information about an individual from more than one data source

- Privacy protected by strict separation of identifiable information from content data
- Enables research not possible with just one data source
- Provides a more complete picture
- Increases sample size

Finding the children of veterans in existing datasets

- Survey or collection focused on veteran population
- Directly identified via survey response
- Indirectly identified through relationship to a veteran

