The NSW Child Development Study:
Findings from the 2nd Wave of Data Linkage

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NSW CHILD DEVELOPMENT STUDY

Acknowledgements

We acknowledge Aboriginal and Torres Strait Islander peoples as the traditional custodians of the lands we meet on today.

We pay respects to elders past, present & emerging.

This research used population data owned by the NSW Department of Education; NSW Education Standards Authority; NSW Department of Community and Justice; NSW Ministry of Health; NSW Registry of Births, Deaths & Marriages; the Australian Coordinating Registry (on behalf of Australian Registry of Births, Deaths & Marriages, Australian Coroners & the National Coronial Information System); the Australian Bureau of Statistics; the NSW Bureau of Crime Statistics and Research, and; NSW Police. This research used data from the Australian Early Development Census (AEDC); the AEDC is funded by the Australian Government Department of Education and Training. The findings and views reported are those of the authors and should not be attributed to these Departments or the NSW or Australian Government. The record linkage was conducted by the Centre for Health and Record Linkage. **Information and views reported using data from this study do not necessarily reflect the views held by these Departments.**

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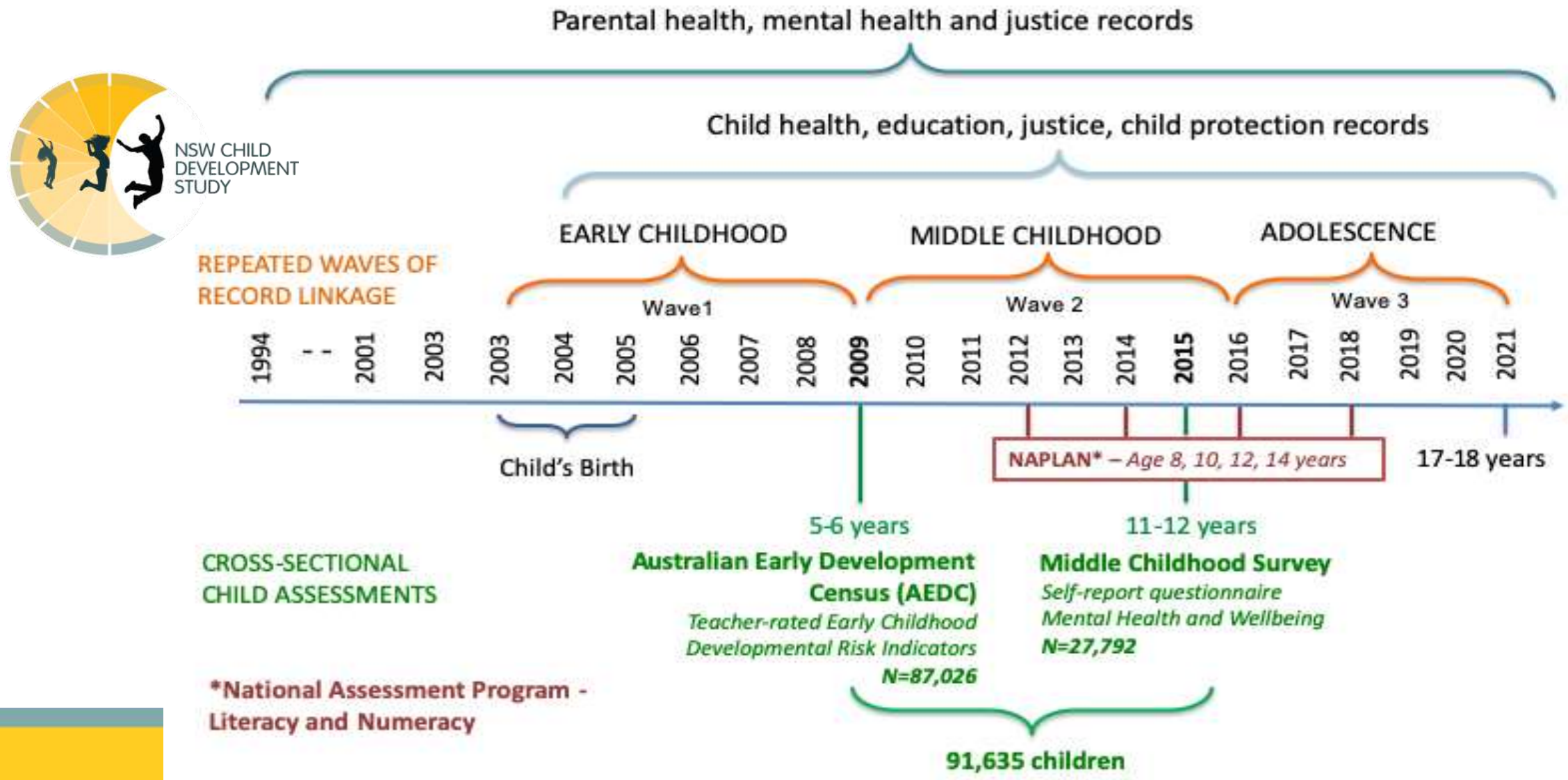
The NSW Child Development Study

A population-based longitudinal study conducted via waves of record linkage



ANZJP

Latent profiles of early developmental vulnerabilities in a New South Wales child population at age 5 years

Australian & New Zealand Journal of Psychiatry
2018, Vol. 52(6) 530–541
DOI: 10.1177/0004867417740208

Melissa J Green[1,2], Sta
Kimberlie Dean[1,2,5], M
Nicole O'Reilly[1], Maril
and Vaughan J Carr[1,2,

Research

ANZJP

Early developmental risk for subsequent childhood mental disorders in an Australian population cohort

Australian & New Zealand Journal of Psychiatry
2019, Vol. 53(4) 304–315
DOI: 10.1177/0004867418814943

Melissa J Green[1,2], Stacy Tzoumakis[3], Kristin R Laurens[1,4], Kimberlie Dean[1,5], Maina Kariuki[1], Felicity Harris[1], Sally A Brinkman[6,7] and Vaughan J Carr[1,2,8]

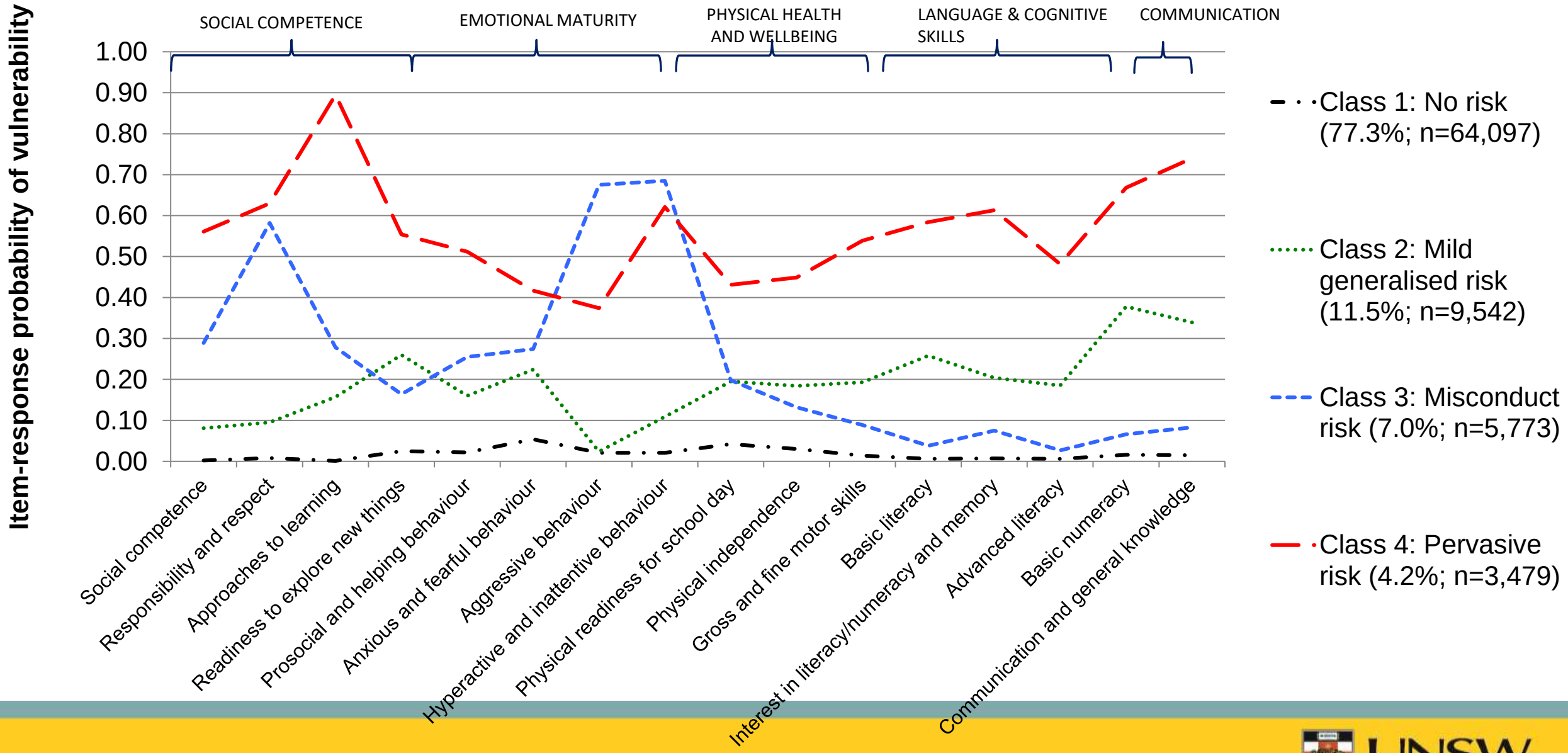
Editor's Choice

This work uses AEDC teacher-ratings on 16 subdomains (together, these form the 5 AEDC domains)

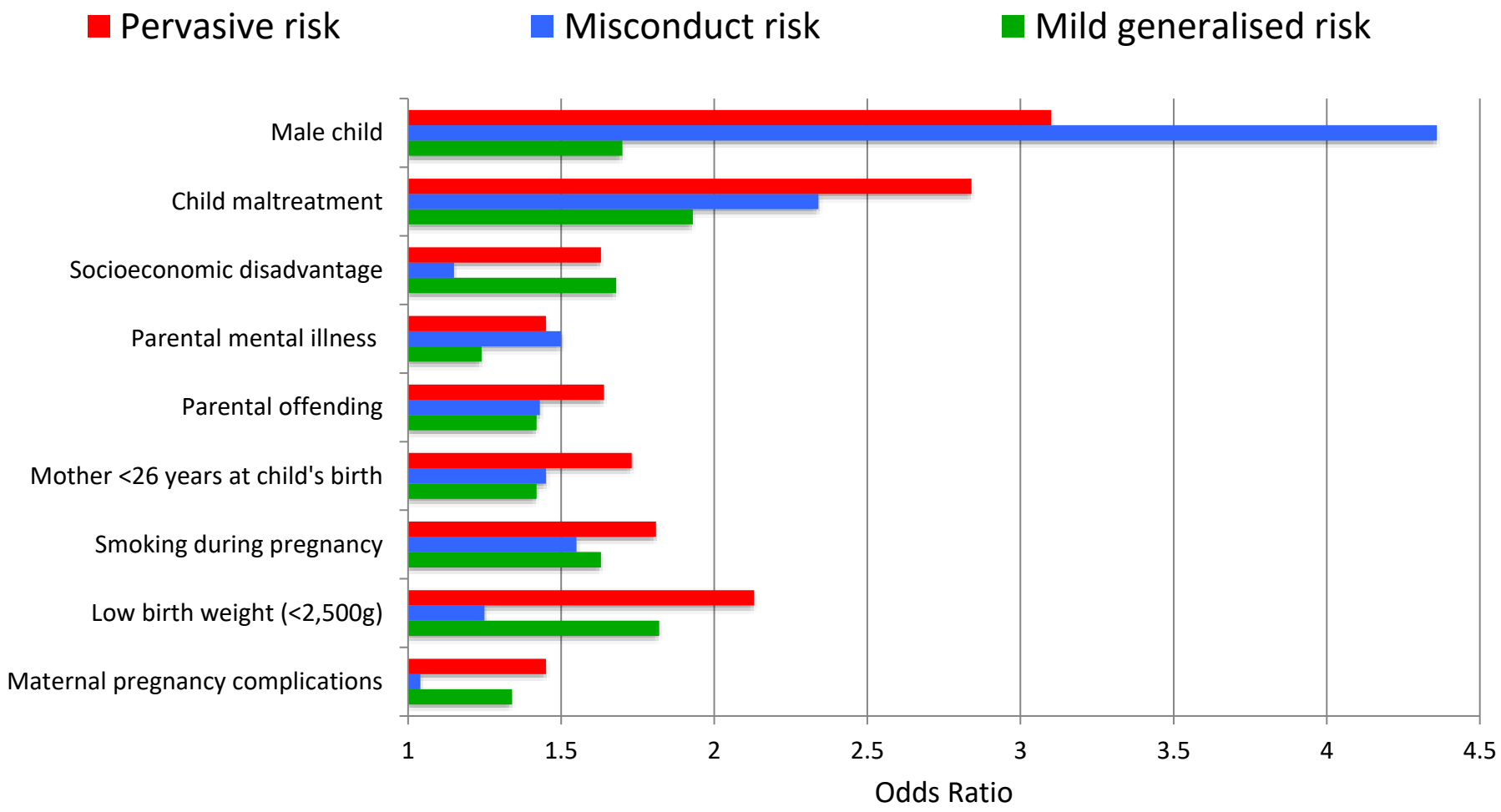
SOCIAL COMPETENCE	
Overall social competence	Gets along with peers; plays with various children
Responsibility and respect	Follows rules and instructions; demonstrates respect for other children
Approaches to learning	Listens attentively; is able to solve day-to-day problems by him/herself
Readiness to explore new things	Is curious about the world; is eager to play a new game
EMOTIONAL MATURITY	
Prosocial and helping behaviour	Helps someone who has been hurt; Comforts a child who is crying or upset
Anxious and fearful behaviour	Seems to be unhappy, sad or depressed; Cries a lot
Aggressive behaviour	Kicks, bites, hits other children or adults; bullies or is mean to others
Hyperactive and inattentive behaviour	Can't sit still, is restless; is distractible, has trouble sticking to any activity
PHYSICAL HEALTH AND WELLBEING	
Physical readiness for school day	Arrives too tired and/or too sick to do school work; arrives hungry
Physical independence	Is independent in toileting habits most of the time; is well co-ordinated
Gross and fine motor skills	Ability to manipulate objects; ability to climb stairs
LANGUAGE AND COGNITIVE SKILLS	
Basic literacy	Is able to identify some letters of the alphabet; to write his/her own name
Interest in literacy/numeracy	Is interested in reading; is interested in games involving numbers
Advanced literacy	Is able to read simple words; is able to write simple words
Basic numeracy	Is able to count to twenty; is able to say which number is bigger of the two
COMMUNICATION	
Communication and general knowledge	Ability to use language effectively; ability to understand … what is being said

Disclaimer: Psychometric analyses have demonstrated that the AEDC domains are reliable and valid indicators of child development for Australian children. However, there is far less known about the reliability and validity of the subdomain measures when used alone or in other combinations.

4 distinct early childhood developmental risk profiles (N=82,891)



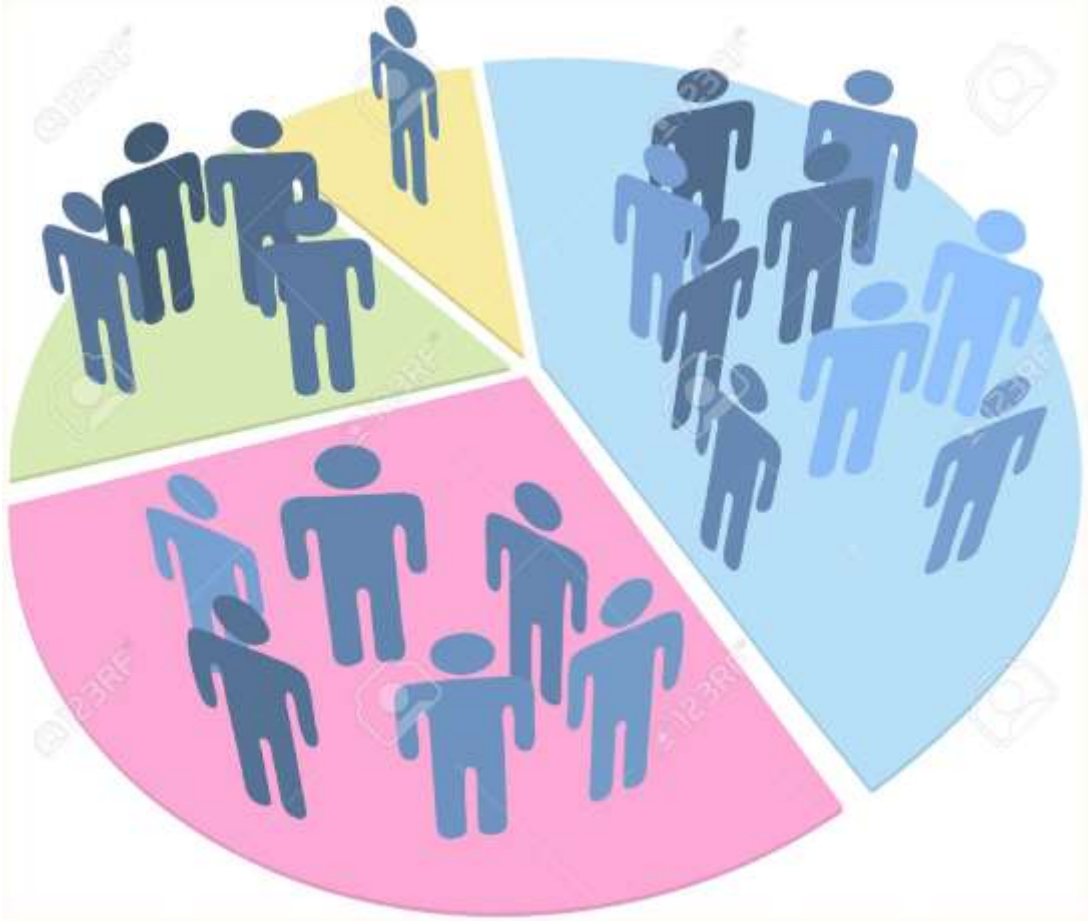
Early life risk exposures among AEDC risk classes



Outcomes of children in each of the early childhood risk groups

Children in the Pervasive and Misconduct Risk groups show higher rates of **mental disorders** and **contact with the Police**, relative to the no-risk group.

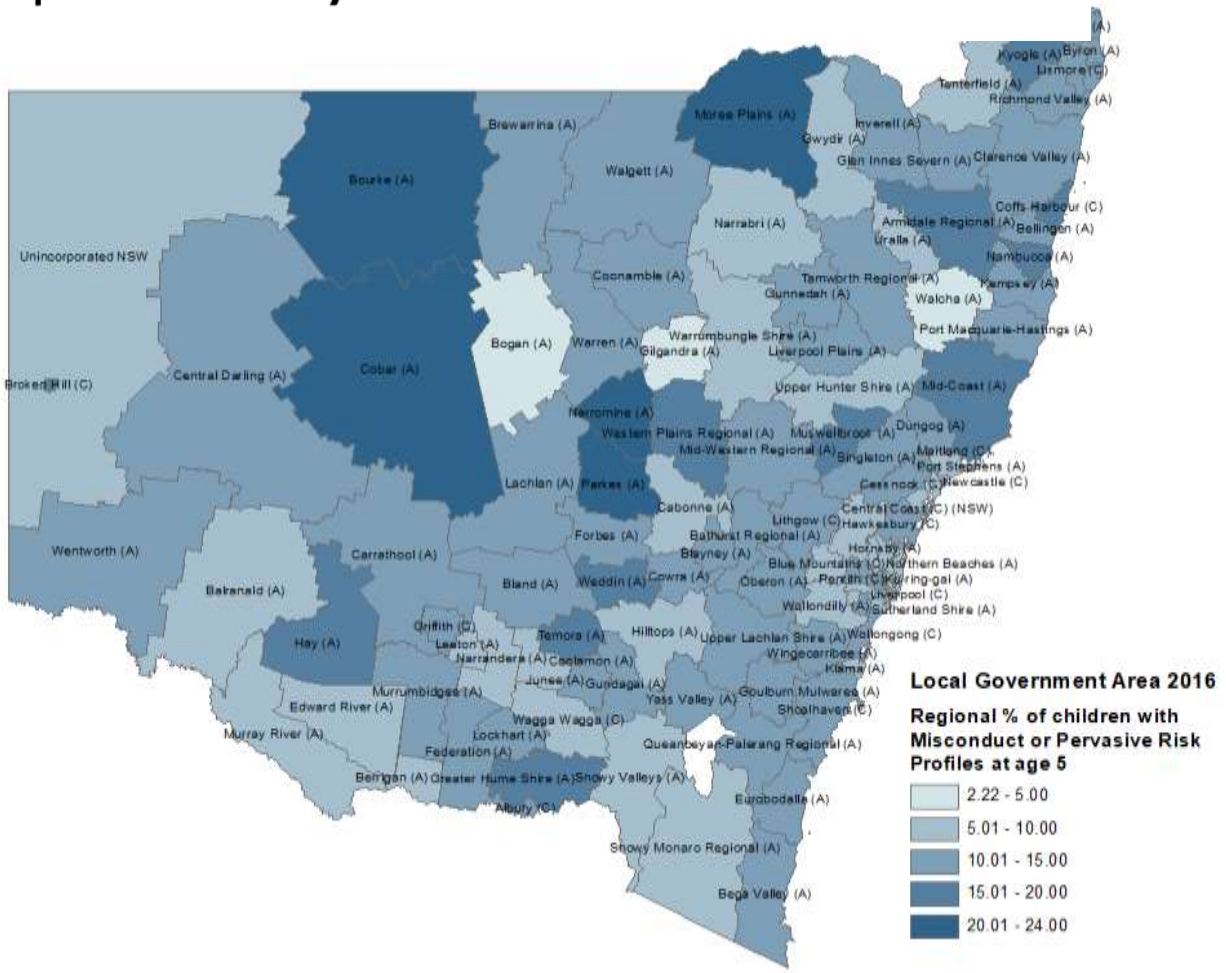
Children in the Pervasive Risk and Mild Generalised Risk groups show **poor academic achievement** in later childhood relative to the no-risk group



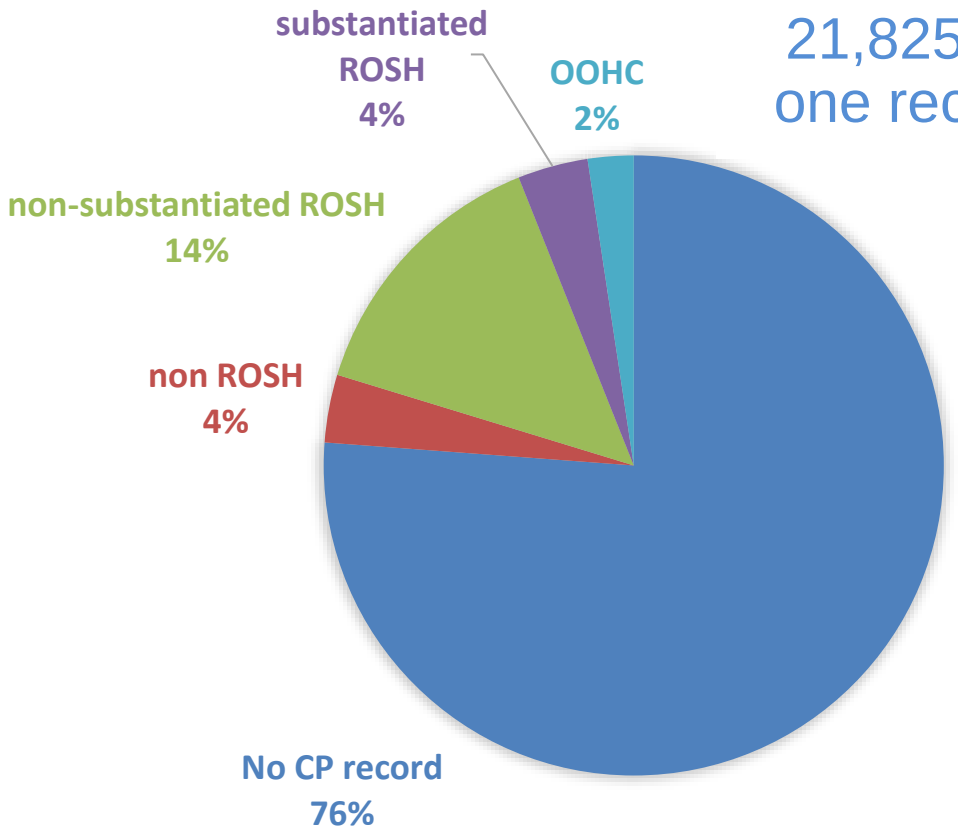
Regional mapping of early childhood risk for mental disorders in an Australian population sample

Felicity Harris[1] | Kimberlie Dean[1,2] | Kristin Robyn Laurens[1,3] | Stacy Tzoumakis[4] | Vaughan James Carr[1,5,6] | Melissa Jayne Green[1,5]

Early Intervention in Psychiatry



Prevalence of child protection contacts in the Wave 2 linkage data



21,825 children (24% of the child cohort) had at least one record of child protection contact by age 13 years

When placed into a hierachy according to the highest level of child protection response:

- 2,187 were placed in Out of Home Care (OOHC; 2.4%)
- 3,336 had a substantiated ROSH report (3.6%)
- 13,051 had a non-substantiated ROSH report (14.2%)
- 3,251 had a non-ROSH report (3.5%)

Childhood mental disorder

See publications:

1. Green, M.J., Hindmarsh, G., Kariuki, M., Laurens, K.R., Neil, A., Katz, I., Chilvers, M., Harris, F., Carr, V.J. (2020). Mental disorders in children known to child protection services during early childhood. *Medical Journal of Australia, 21*(1), 22-28. doi:10.5694/mja2.50392

2. O'Hare, K., et al. (2021). Self-reported mental health of children known to child protection services: an Australian population-based record linkage study. European Child & Adolescent Psychiatry. doi.org/10.1007/s00787-021-01841-3

3. Neil, A.L., et al. (2020). Costs for physical and mental health hospitalizations in the first 13 years of life among children engaged with Child Protection Services. *Child Abuse & Neglect, 99,* 104280*,* doi:10.1016/j.chiabu.2019.104280

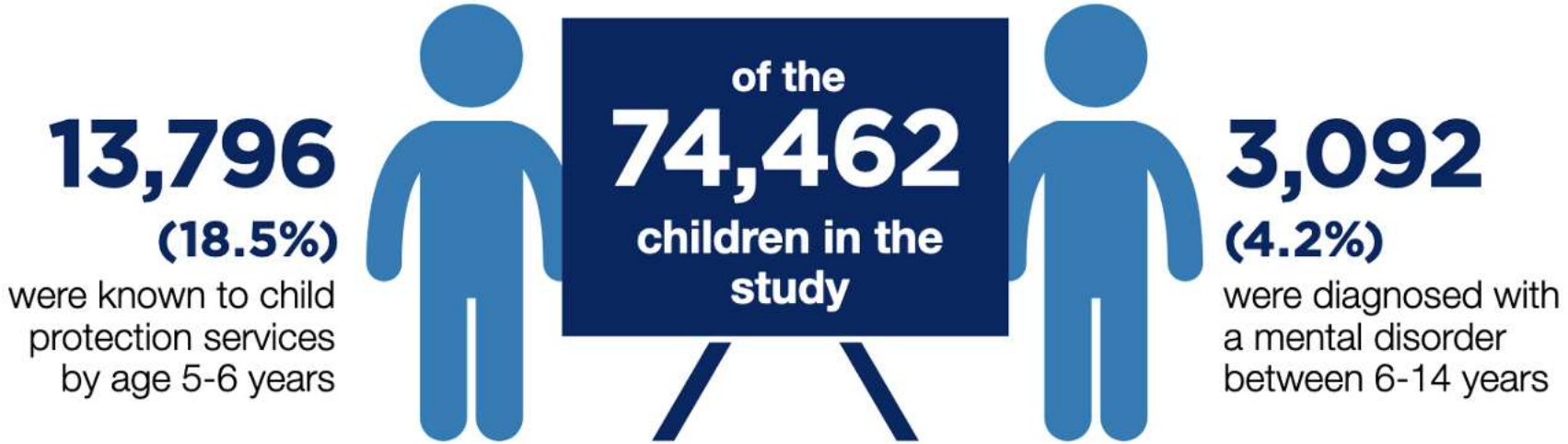
MJA The Medical Journal of Australia
Australia's most trusted source of medical information

Research | Free Access

Mental disorders in children known to child protection services during early childhood

Melissa J. Green, Gabrielle Hindmarsh, Maina Kariuki, Kristin R. Laurens, Amanda L Neil, Ilan Katz, Marilyn Chilvers, Felicity Harris, Vaughan J Carr

First published: 03 November 2019 | https://doi.org/10.5694/mja2.50392 | Citations: 13



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Of the children in the study:

9.8%

of the children **known to child protection services** before the age of 5 years had a record of **at least one mental disorder diagnosis** in middle childhood

2.9%

of children with **no child protection contact** had a record of **mental disorder diagnosis** in the same time period

Children known to child protection services by the time of school entry were:

more than 4x

as likely to engage in self-harm, or be diagnosed with a hyperkinetic or conduct disorder

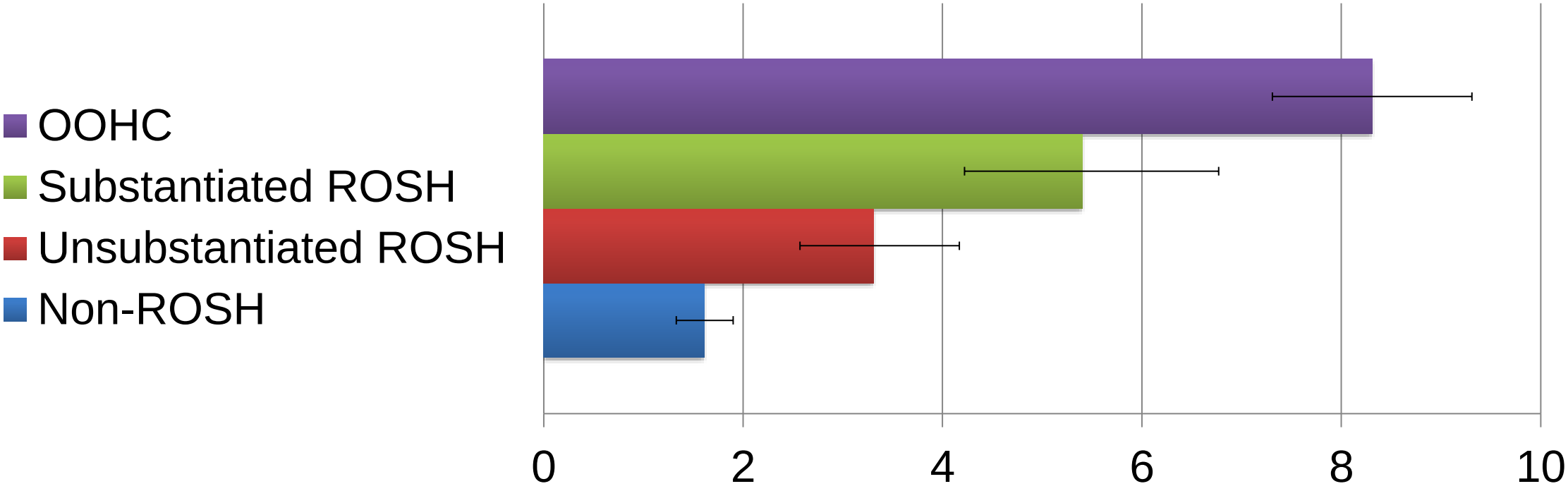
more than 3x

as likely to be diagnosed with an emotional disorder or stress reactions

more than 2x

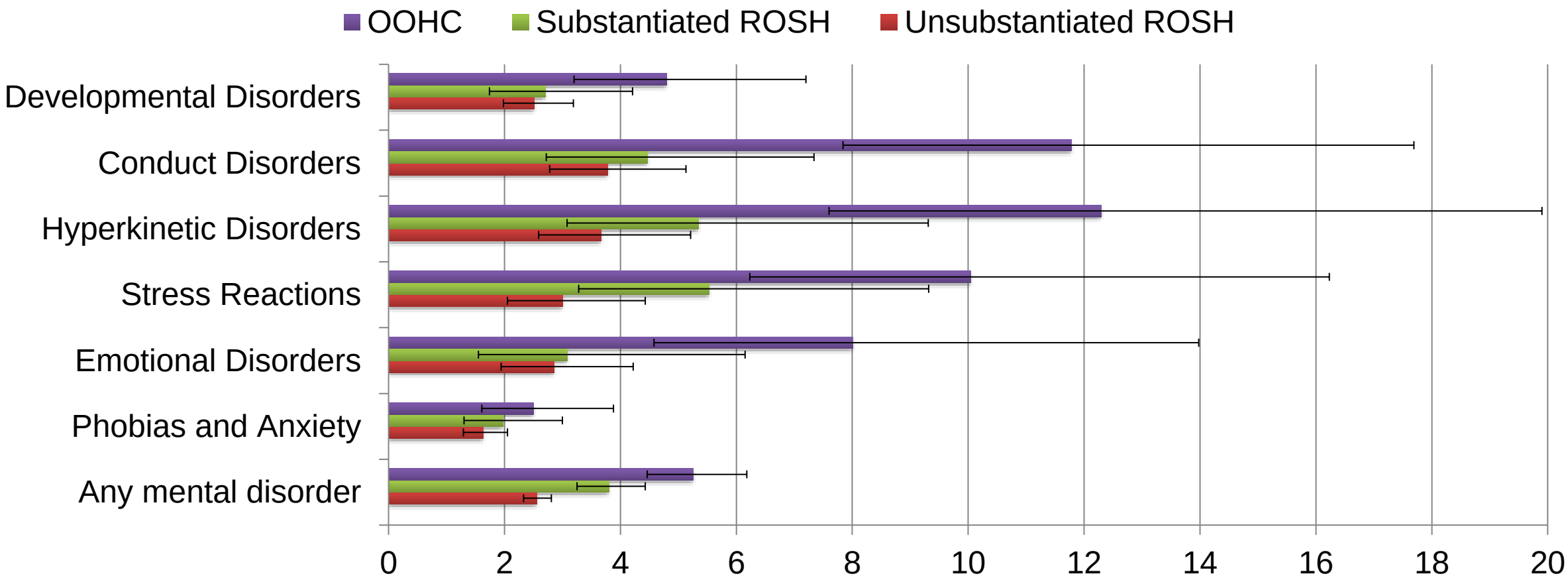
as likely to be diagnosed with a developmental disorder

Any mental illness recorded in health records up to age 13 years



Odds of any mental disorder according to the highest level of child protection service received, relative to non-maltreated peers (Unadjusted model)

Specific diagnoses recorded in health records up to age 13 years



Odds of particular mental illness diagnoses among children known to child protection services, relative to non-maltreated peers (*Adjusted models)

Child Abuse & Neglect 99 (2020) 104280

Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

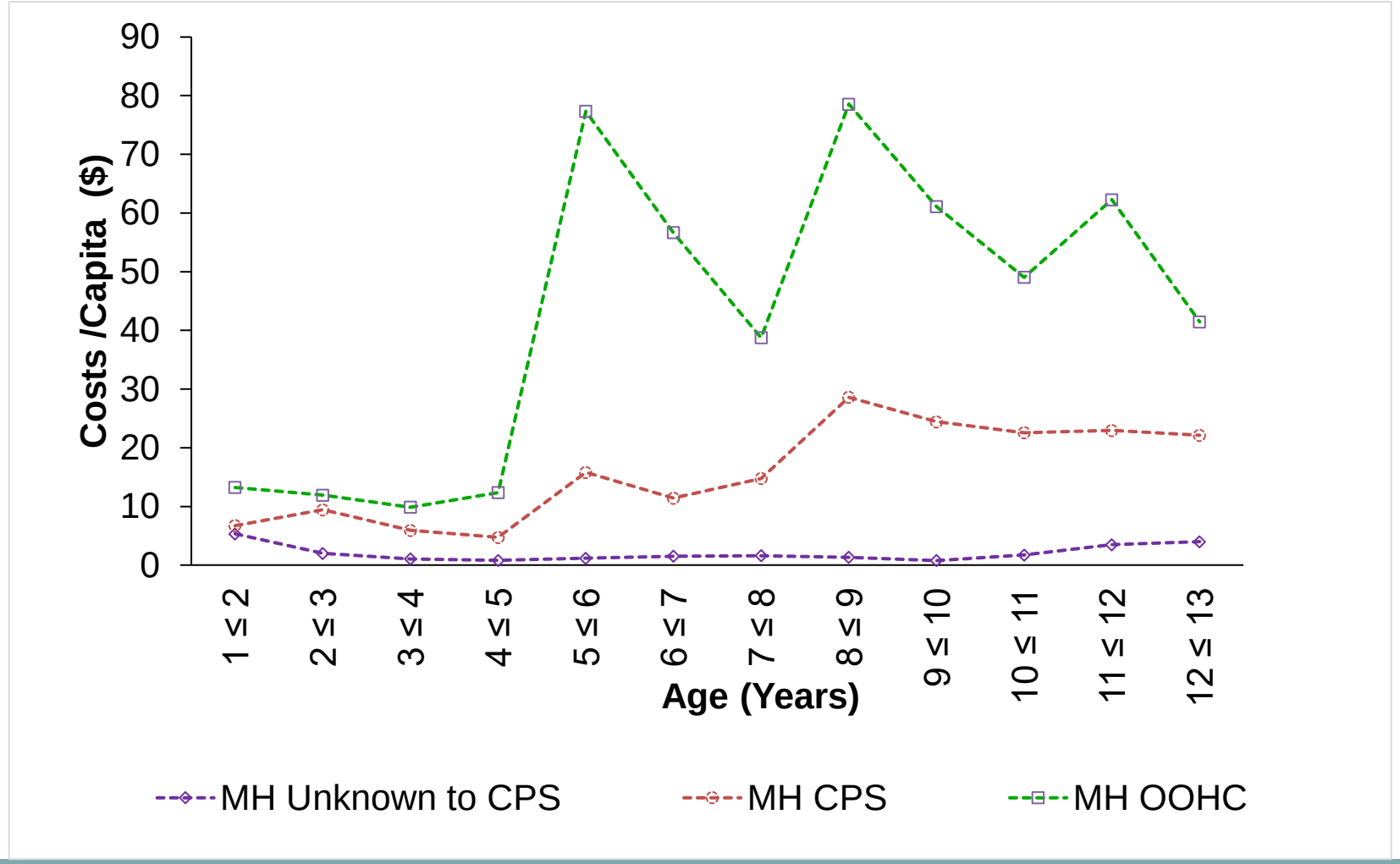
Research article

Costs for physical and mental health hospitalizations in the first 13 years of life among children engaged with Child Protection Services

Amanda L. Neil[a,*], Fakhrul Islam[b], Maina Kariuki[b], Kristin R. Laurens[b,c], Ilan Katz[d], Felicity Harris[b], Vaughan J. Carr[b,e,f], Melissa J. Green[b,f]

[a] Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia
[b] School of Psychiatry, University of New South Wales, Sydney, Australia
[c] School of Psychology and Counselling, and Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia
[d] Social Policy Research Centre, University of New South Wales, Sydney, Australia
[e] Department of Psychiatry, Monash University, Melbourne, Australia
[f] Neuroscience Research Australia, Sydney, Australia

Per capita costs of admitted patients for mental health care according to child protection status



Neil et al., (2020) *Child Abuse and Neglect*.

European Child & Adolescent Psychiatry
https://doi.org/10.1007/s00787-021-01841-3

ORIGINAL CONTRIBUTION

Self-reported mental health of children known to child protection services: an Australian population-based record linkage study

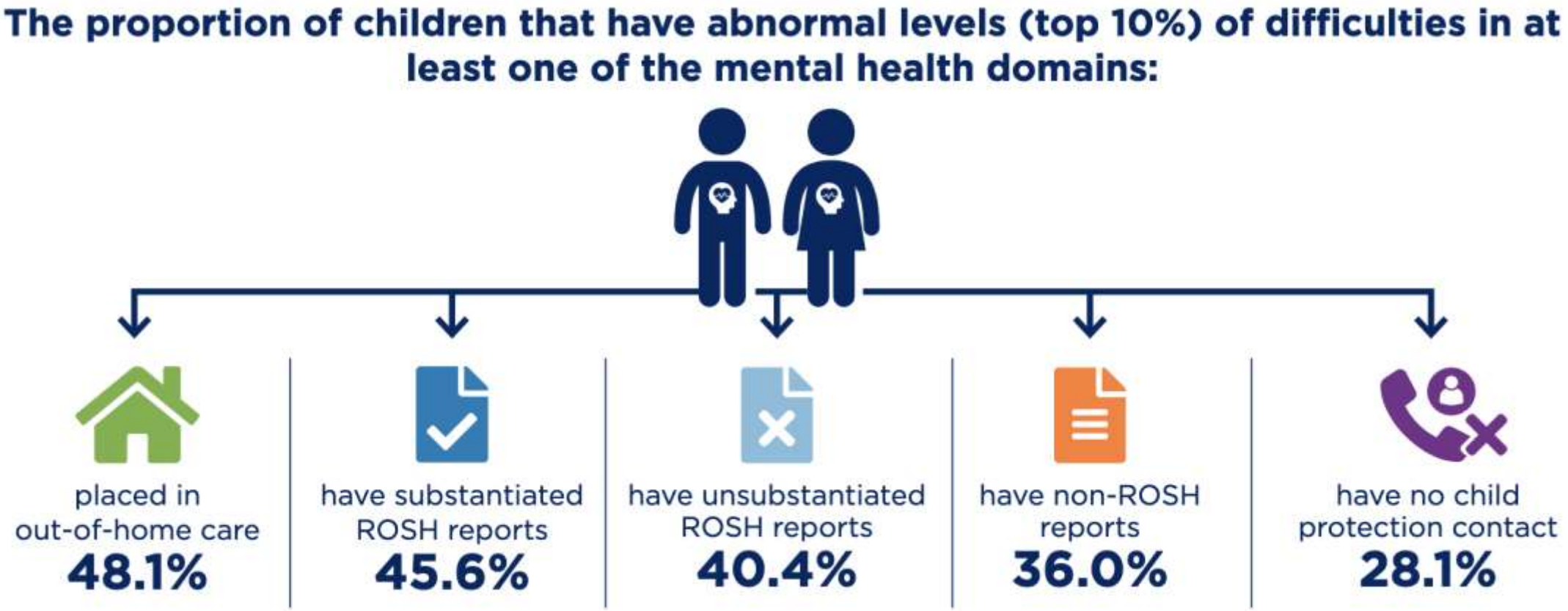
Kirstie O'Hare[1] · Aniqa Hussain[1] · Kristin R. Laurens[1,4] · Gabrielle Hindmarsh[1] · Vaughan J. Carr[1,2,3] · Stacy Tzoumakis[5] · Felicity Harris[1] · Melissa J. Green[1,2]

Received: 1 February 2021 / Accepted: 28 June 2021

A total of 829 schools (approximately 35% of the state total of 2376 eligible schools) agreed to administer the MCS to Year 6 students in 2015. The participating schools included 556 public (67%), 199 Catholic (24%), and 74 Independent schools (9%).

A total of 27,808 children took part in the MCS. This included 14,054 males and 13,754 females. Of these students, 26,854 (96.6%) completed all questions (responded to 116 items), while 954 students did not finish the survey (3.4%). We are very grateful to those children and schools who participated in the MCS in 2015.

This study included 26,960 children who completed the Middle Childhood Survey in 2015 (in Grade 6 primary school, age 11 years)



Educational under-achievement and school absences

See publications:

1. Laurens, K.L., Islam, F., Kariuki, M., Harris, F., Chilvers, M., Butler, M., Schofield, J., Essery, C., Brinkman, S.A., Carr, V.J., Green, M.J. (2020). Reading and numeracy attainment of children reported to child protection services: A population record linkage study controlling for other adversities. *Child Abuse & Neglect, 101,* 104326. doi:10.1016/j.chiabu.2019.104326

2. Laurens, K.R., Dean, K., Whitten, T., Tzoumakis, S., Harris, F., Waddy, N., Prendergast, T., Taiwo, M., Carr, V.J., Green, M.J. (2021) Early childhood predictors of suspensions from primary school: An Australian multi-agency record linkage study. *Journal of Applied Developmental Psychology*, 77, 101343. *doi: 10.1016/j.appdev.2021.101343*

Child Abuse & Neglect 101 (2020) 104326

Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

Reading and numeracy attainment of children reported to child protection services: A population record linkage study controlling for other adversities

Kristin R. Laurens[a,b,*], Fahkrul Islam[b], Maina Kariuki[b], Felicity Harris[b], Marilyn Chilvers[c], Merran Butler[c], Jill Schofield[d], Claire Essery[d], Sally A. Brinkman[e,f], Vaughan J. Carr[b,g,h], Melissa J. Green[b,h]

Child protection contacts among children with Grade 3 and Grade 5 NAPLAN data

Table 1: Number of children in Grades 3 and 5 for each level of child protection response

Child protection response level	Grade 3 N=56,860 (%)	Grade 5 N=56,189 (%)
OOHC placement	616 (1.1)	685 (1.2)
Substantiated ROSH	890 (1.6)	1,176 (2.1)
Non-substantiated ROSH	3,420 (6.0)	4,731 (8.4)
Non-ROSH	427 (0.8)	2,117 (3.8)

Factors associated with below average 5th-grade reading and numeracy

Relative to children without a child protection report,

Children with an OOHC placement were

3-4x as likely

to achieve **below average** literacy and numeracy attainment

Children with a substantiated ROSH report were over

3x as likely

to achieve **below average** literacy and numeracy attainment

Children with an unsubstantiated ROSH report were over

2x as likely

to achieve **below average** literacy and numeracy attainment

Children with non-ROSH reports were around

2x as likely

to achieve **below average** literacy and numeracy attainment

Other child, family, and neighbourhood vulnerability factors associated with reading and numeracy attainment

There are many other complex vulnerability factors that may impact a child's educational outcomes. The following vulnerability factors have been included in the additional analysis:

- Sociodemographic factors (age at NAPLAN assessment, sex, socioeconomic disadvantage, English as second language, Indigenous status).
- Pregnancy and birth factors (maternal age at child's birth, maternal smoking during pregnancy, late or no antenatal care visits, pre-term birth).
- Parental factors (parental history of any mental illness, parental history of any criminal offending).
- Early (kindergarten) developmental vulnerabilities (recorded developmental vulnerability on the AEDC language and cognitive skills [school-based] domain, a measure of early literacy and numeracy).
- One or more other developmental vulnerabilities identified at kindergarten level on other AEDC domains: physical health and wellbeing, social competence, emotional maturity, and/or communication skills and general knowledge.

Journal of Applied Developmental Psychology
Volume 77, November–December 2021, 101343

Early childhood predictors of elementary school suspension: An Australian record linkage study

Kristin R. Laurens [a, b], Kimberlie Dean [b, c], Tyson Whitten [b, d], Stacy Tzoumakis [b, e], Felicity Harris [b], Neale Waddy [f], Traci Prendergast [f], Mary Taiwo [f], Vaughan J. Carr [b, g, h], Melissa J. Green [b, h]

This study analysed data from 34,855 children from the NSW Child Development Study.

We examined the associations between early childhood risk factors before the end of 2nd grade (approximately 8 years of age) and suspension from primary school during the 3rd-6th grades.

Compared to children without any child protection contact:

children with **non-ROSH reports** are

2x more likely to be suspended from school

children with **Unsubstantiated ROSH reports** are

3x more likely to be suspended from school

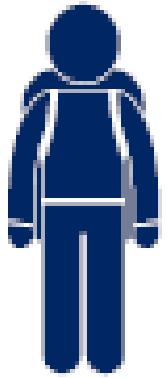
children with **Substantiated ROSH reports** are

4x more likely to be suspended from school

children in **OOHC** are over

4x more likely to be suspended from school

Other factors associated with suspension from school



Boys are more than

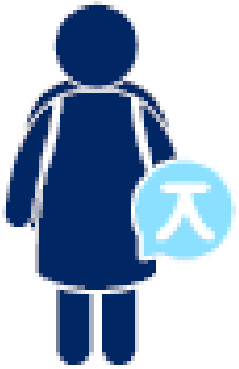
5x more likely

to be suspended from school

Aboriginal children are

2x as likely

to be suspended from school



Children from non-English speaking background are

1/2 as likely

to be suspended from school

Children with aggressive behaviour at school entry are more than

2.5x more likely

to be suspended from school

Children from disadvantaged families are almost

2x as likely

to be suspended from school

Resilience among children known to child protection services

See publication:

Green, M.J., et al. (2021). Profiles of Resilience from Early to Middle Childhood among Children Known to Child Protection Services, Journal of Clinical Child & Adolescent Psychology, doi: 10.1080/15374416.2021.1969652

Profiles of Resilience from Early to Middle Childhood among Children Known to Child Protection Services

Melissa J. Green, Patrycja J. Piotroswka, Stacy Tzoumakis, Tyson Whitten, Kristin R. Laurens, Merran Butler, Ilan Katz, Felicity Harris & Vaughan J. Carr

Routledge
Taylor & Francis Group

This study used data for a subset of 4,716 children known to child protection services to examine profiles of resilience across early and middle childhood.

Social-emotional and cognitive resilience was measured at age 5 years using the AEDC and age 10-11 years using the Grade 5 NAPLAN (Literacy and Numeracy) and selected items from the Middle Childhood Survey

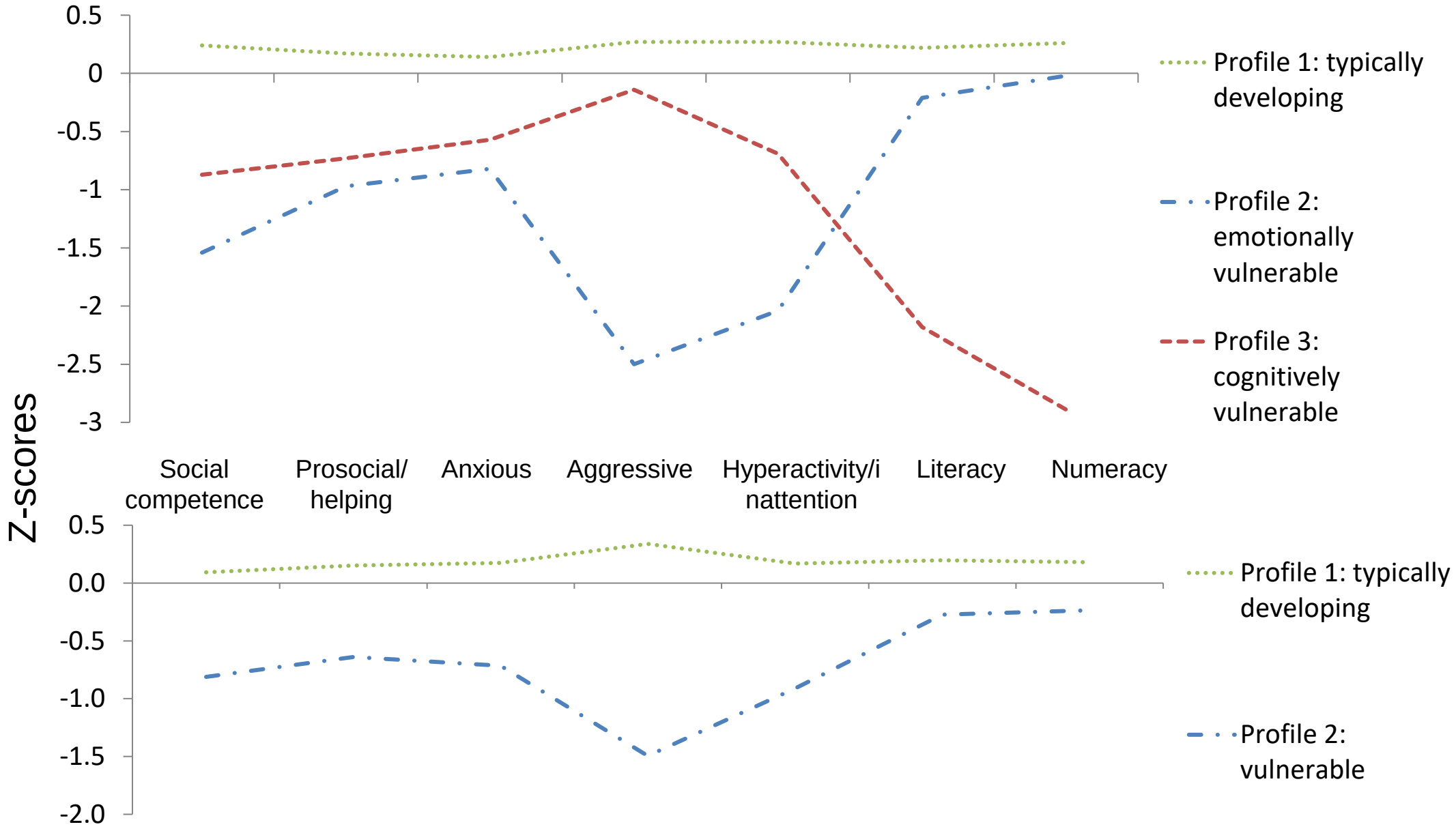
We used Latent Profile Transition Analyses to determine patterns of scores on these domains across early and middle childhood, revealing groups of children showing ‘emergent resilience’ or ‘stress-resistance’

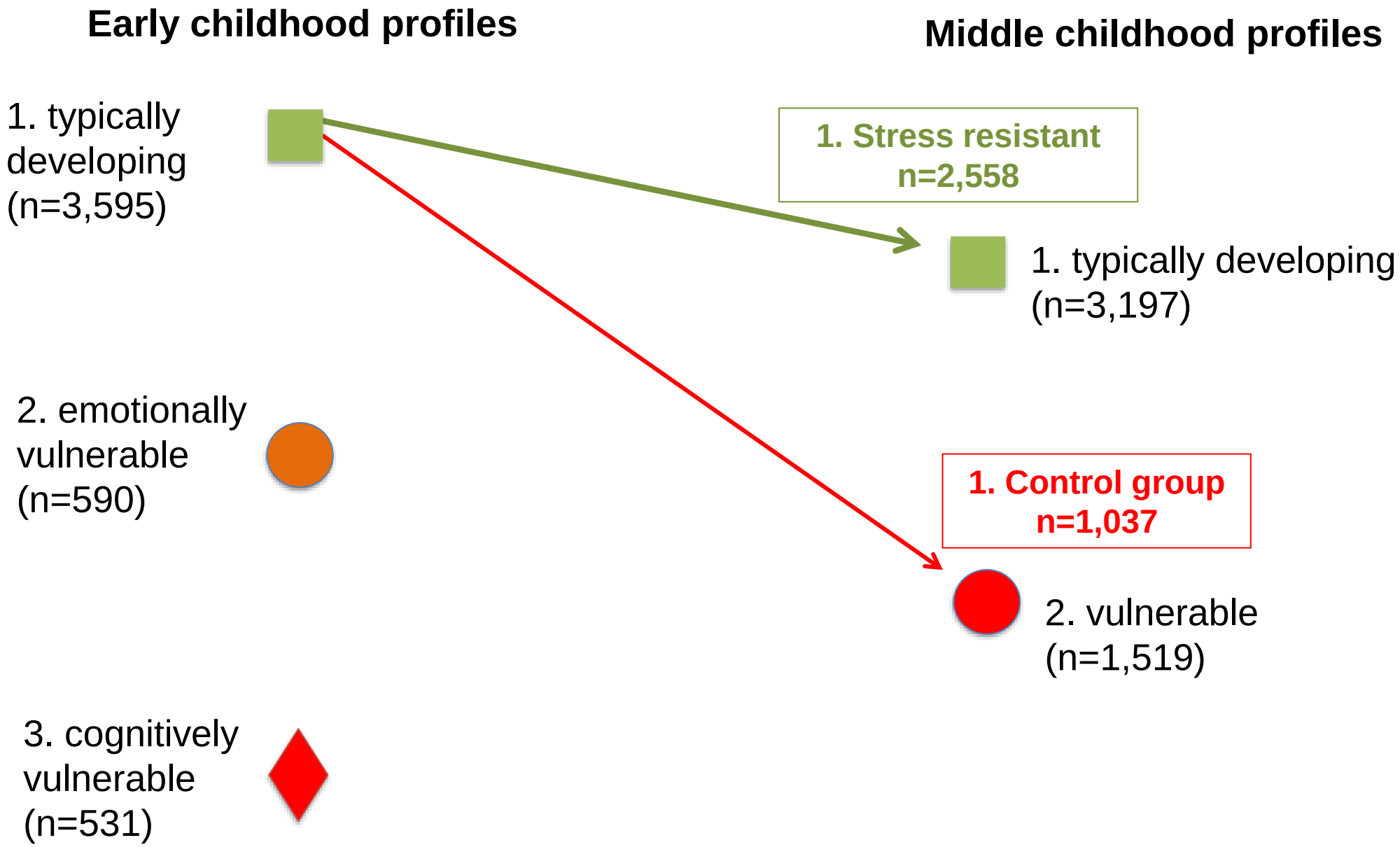
How was resilience determined?

The study analysed data from a subset of 4,716 children known to child protection services to examine profiles of resilience across early and middle childhood. Resilience was measured using five domains of *socio-emotional* health (social competence; prosocial and helping behaviour; anxious and fearful behaviour; aggressive behaviour; and hyperactivity and inattention) and two domains of *cognitive skills* (literacy and numeracy). Socio-emotional functioning was assessed using the Australian Early Development Census (AEDC) at age 5-6 years and the Middle Childhood Survey (MCS) at age 10-11 years. Cognitive functioning (Literacy and Numeracy) was assessed with the AEDC at age 5-6 years and NAPLAN at age 10-11 years.

'Vulnerability' and 'resilience' were determined by children's patterns of scores on these domains across early and middle childhood. Two profiles of resilience were the focus of this study:

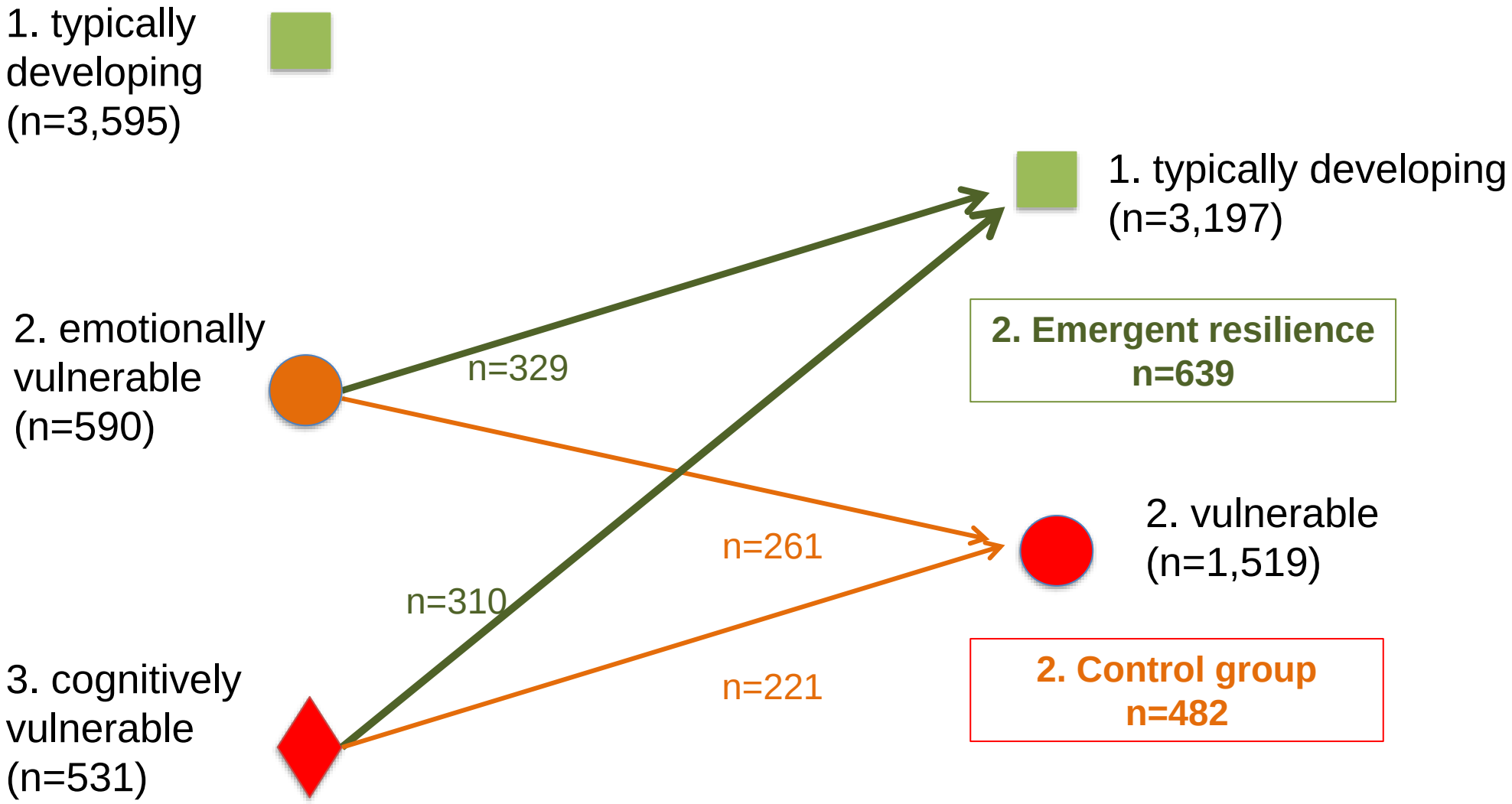
- *'stress-resistant'* - children who were 'typically developing' at both time points
- *'emergent resilient'* - children who transitioned from being 'vulnerable' in early childhood to 'typically developing' in middle childhood.


Z-scores
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
Social competence
Prosocial/ helping
Anxious
Aggressive
Hyperactivity/inattention
Literacy
Numeracy
Profile 1: typically developing
Profile 2: emotionally vulnerable
Profile 3: cognitively vulnerable
0.5
0.0
-0.5
-1.0
-1.5
-2.0
Profile 1: typically developing
Profile 2: vulnerable


Early childhood profiles
Middle childhood profiles
1. typically developing (n=3,595)
2. emotionally vulnerable (n=590)
3. cognitively vulnerable (n=531)
1. Stress resistant n=2,558
1. typically developing (n=3,197)
1. Control group n=1,037
2. vulnerable (n=1,519)

Early childhood profiles

Middle childhood profiles



Both profiles of resilience (stress-resistant and emergent-resilient) were associated with:

being female

personality characteristics of openness and extraversion

Children who were categorised as emergent-resilient more likely to:

have no substantiated ROSH report in middle childhood

have community supports

Children who were categorised as stress-resistant were more likely to have:

a higher socio-economic class

greater school and home support

a non-Aboriginal background

a child protection report that did not meet threshold for ROSH

parents with no criminal history

Key Findings from the NSW-CDS

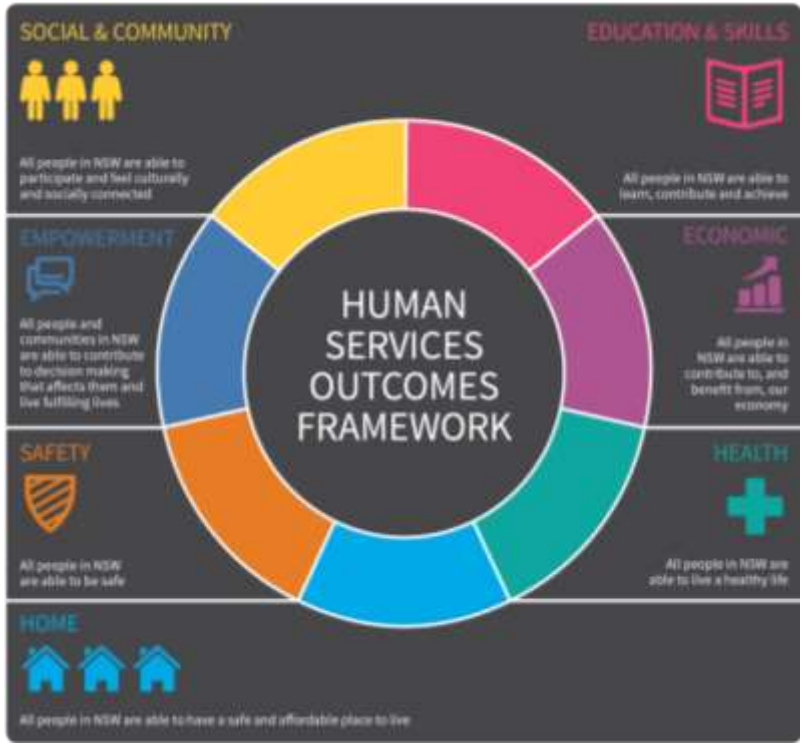
- Children showing high-risk patterns of early childhood vulnerability are more likely to have been in contact with child protection services before age 5 years

- Child protection contact is a marker of risk for later childhood
  - mental illness,
  - educational under-achievement; and,
  - interruptions to school attendance (suspensions/expulsions)

- The increased mental health costs associated with child maltreatment are evident at an early age of development

- 65% of children known to child protection services (by age 13 years) demonstrate resilience across early to middle childhood

Policy Implications



Our findings can inform the delivery of cross-agency service provision to vulnerable families from the earliest stages of development.

Mental Health Services for children experiencing early life trauma must span the early childhood period

School-based mental health programs could aim to promote various childhood competencies associated with resilience

Understanding where children with early childhood risk profiles are located across the state could assist with state-wide program planning

Strengths & Limitations

- Retrospective analyses of prospectively convened population data avoids sampling bias, and recall bias for risk factors of interest
- Follow-up of this cohort into adulthood will allow us to determine long-term outcomes
- Parental data linkage for this cohort is limited to those with birth records registered in NSW
- Many other potential contributors to health, education, and social adversity cannot be gleaned from linked administrative data – e.g., quality of peer relationships, home environment, carer relationships, etc.

http://nsw-cds.com.au/

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