Child protection status and developmental outcomes in early and middle childhood.

A data summary from the NSW Child Development Study.

Prepared for the

NSW Department of Communities and Justice

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Purpose

The NSW Department of Communities and Justice (DCJ) is committed to improving the lives of vulnerable children and their families with better laws, policies, systems, and practices. DCJ strives to determine and address the needs of children and families early to give them a strong foundation for a better life. Continued revision of policy and practice ensures that decisions about child wellbeing, and the ongoing health and developmental needs of vulnerable children and their families, are facilitated by comprehensive information and evidence-based practice.

In relation to these activities, DCJ requested data from the NSW Child Development Study regarding early risk factors associated with poor developmental outcomes.

DCJ specifically requested the following information:

1: What types of substantiated records of childhood maltreatment are linked with various developmental outcomes?

2: Does being exposed to single or multiple incidents, or types, of childhood maltreatment differentially influence the developmental outcomes of children and young people?

3: What impact do other risk factors have on children's developmental outcomes (e.g., maternal age at birth, maternal smoking exposure in utero, pre-term birth, parental mental illness, parental criminal history)?

NSW Child Development Study

The NSW Child Development Study (NSW-CDS) is a longitudinal project that combines multi-agency administrative data with unique cross-sectional survey information for a population cohort of 91,635 NSW children (nsw-cds.com.au). The first wave of linkage was conducted for children (N=87,037) who were assessed with the Australian Early Development Census (AEDC) as they entered their first year of full-time formal schooling (Kindergarten) in 2009 in NSW (Carr et al., 2016). In 2015, when the children were in Grade 6 of primary school, the investigators administered the Middle Childhood Survey (MCS; Laurens et al., 2017) to the children, capturing 31.9% of the children with a 2009 AEDC record, and adding 4,598 new children to the cohort for Wave 2 linkage (Green, et al., 2018a). Parental records are available for 75,184 children with births registered in NSW, providing intergenerational data on vital statistics, education, health, child protection, and criminal justice contacts. Data linkage was conducted by the Centre for Health and Record Linkage.

Data Sources

The NSW-CDS uses linked population data owned by the NSW Department of Education; NSW Education Standards Authority; NSW Department of Communities and Justice; NSW Ministry of Health; NSW Registry of Births, Deaths and Marriages; the Australian Coordinating Registry (on behalf of Australian Registries of Births, Deaths and Marriages, Australian Coroners and the National Coronial Information System); the Australian Bureau of Statistics; the NSW Bureau of Crime Statistics and Research; and NSW Police Force. The study also uses data from the AEDC, which is funded by the Australian Government Department of Education, Skills and Employment.

Variable Definitions

Child protection indices. Five distinct indices of child protection notifications were derived from the NSW Department of Communities and Justice Case Management System – Key information Directory System (CMS-KiDS) for data available between 2000 and 2009 (i.e., up to age 5-6 years, as they entered their first year of full-time schooling).

(i) *Highest Level of Child Protection Response* represents 16,455 children (18%) of 91,635 children in the NSW-CDS who were known to child protection services before age 5-6 years (up to and including their first year of formal schooling), according to five mutually exclusive categories:
(1) out-of-home care (OOHC) placement (n=1,454; 1.6%);
(2) substantiated Risk of Significant Harm (ROSH) report (n=2,069; 2.3%);
(3) non-substantiated ROSH report (n=10,890; 11.9%);
(4) child protection report below the ROSH threshold (non-ROSH; n=2,042; 2.2%), and;
(5) no child protection contact (n=75,180; 82%).

(ii) *OOHC/Substantiated Child Protection Reports* represents children who were the subject of substantiated ROSH reports and/or OOHC placements before age 5-6 years (n=3,523; 3.8%).

(iii) *Multiple ROSH Reports* represents subgroups of the 3,523 children with OOHC/substantiated child protection reports before age 5-6 years, with a record of at least one ROSH report (n=3,420; missing n=103). We distinguished children with a 'single ROSH report' (n=288, 8.4%), from those with 'multiple ROSH reports'; the latter included a subgroup with 2-10 ROSH reports (n=1,914, 56%) and a subgroup with 11+ ROSH reports (n=1,218, 35.6%).

(iv) *Multiple Maltreatment Types* represents subgroups of the 3,523 children with OOHC/substantiated child protection reports before age 5-6 years, with valid information recorded as *Actual harm* in secondary assessments (n=3,441; missing n=82). We distinguished children with a 'single type of maltreatment' (n=2,983; 86.7%) recorded, from those with 'two or more types of maltreatment' (n=458; 13.3%) recorded as *Actual harm* in secondary assessments.

(v) *Maltreatment Subtype* represents the type of maltreatment recorded as *Actual harm* in secondary assessments, among children exposed to a single maltreatment type (of those with OOHC/substantiated child protection reports), according to categories of physical abuse, sexual abuse, emotional abuse, or neglect.

Demographics. Three demographic indices were derived using all available records, as follows (Table 1):

Sex was defined from the most frequently reported sex in all data sources in Wave 2 of the NSW-CDS.

Indigenous Status (representing peoples of Aboriginal and Torres Strait Islander status) was identified as such in any record of the child's or their parents, from any of the available record sources.

Socioeconomic disadvantage was derived from 2009 AEDC data (child age 5-6 years), and represents children in the lowest quintile on the Socio-Economic Indexes for Areas (SEIFA) Index for Relative Socio-economic Disadvantage (IRSD), as a function of the average income and employment levels associated with school postcode. Indices of socio-economic disadvantage were available for 86,867 (94.8%) children.

Perinatal and familial factors. Two perinatal indices and two indices of parental risk factors were derived where data was available, as follows:

Young mother (≤25 years*) at birth* was derived for 75,096 children with available data from the NSW Ministry of Health's Perinatal Data Collection (PDC).

Maternal smoking exposure in utero was derived for 74,991 children with available data from the NSW Ministry of Health's PDC.

Parental mental illness was derived for 75,184 children with available records for mother and/or father, and represented any parent with a primary or secondary diagnosis of mental disorder (i.e., International Classification of Disease – 10th revision) in the NSW Ministry of Health's Admitted (2001–2016), Emergency Department (2005–2016), or Mental Health Ambulatory (2001–2015) Data Collections.

Parental criminal history was derived for 75,184 children with available parental records and represented any parent who had a criminal offence conviction in NSW, obtained from the NSW Bureau of Crime Statistics and Research Reoffending Database.

Developmental Outcomes in Early and Middle Childhood

We examined **four developmental outcomes** available for the child cohort of the NSW-CDS during early and middle childhood, as follows.

1. Early Childhood Developmental Vulnerability (AEDC; age 5 years)

The 2009 Australian Early Development Census (AEDC) was administered by the Australian Government Department of Education, Skills and Employment to 87,037 children in the NSW-CDS cohort; 82,496 children had valid responses on all AEDC domains required for inclusion in this report.

The AEDC is a 104-item population measure of developmental competencies, from which 96 items are used to calculate indices of developmental functioning in five broad domains: *Physical Health and Well-being; Social Competence; Emotional Maturity; Language and Cognitive Skills (school-based); and, Communication Skills and General Knowledge* (Brinkman, Gregory, Goldfeld, Lynch, & Hardy, 2014).

We derived three indices from the AEDC for 82,496 children with valid scores on all domains:

- ***Developmentally 'Vulnerable'***: representing children scoring below the 10th percentile of an AEDC domain according to national standards;
- ***Developmentally 'At-risk'***: representing children scoring between the 10th and 25th percentile of an AEDC domain according to national standards;
- ***Single or Multiple Domain Vulnerability***: representing children who were developmentally vulnerable on one, two, or three or more domains.

2. Educational outcomes (middle childhood): NAPLAN performance in Grade 5 (age 10 years)

The National Assessment Program – Literacy and Numeracy (NAPLAN) Grade 5 assessment was administered to a total of 77,679 children in the NSW-CDS cohort in 2012, of whom 76,465 had valid data on all NAPLAN domains. The NAPLAN includes five tests assessing achievement for Reading, Writing, Spelling, Grammar and Punctuation, and Numeracy. Student achievement in each domain is reported against performance bands representing increased complexity of skills. A national minimum standard is set for each domain and year level, with performance described as below, at, and above national minimum standard. Children achieving below national minimum standard will have difficulty progressing satisfactorily at school. For Grade 5 2012, about 5% of results across all domains were below national minimum standard and a further 11% of results were at national minimum standard.

We derived three indices of NAPLAN performance for 76,465 ***children with valid scores on all domains:***

- ***Children who have not achieved the national minimum standard***.
- ***Children scoring at or below the national minimum standard***.
- ***Children performing at or above the national minimum standard.***

3. Internalising and Externalising Psychopathology (middle childhood): SDQ (age 11 years)

The 2015 Middle Childhood Survey (MCS) was a 116-item self-report computerised assessment of children's mental health and well-being conducted for a subsample of 27,792 children (age 11 years), of whom 27,456 had valid data on all subscales of the Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 2001.; Laurens et al., 2017),

The SDQ is used to assess internalising and externalising psychopathology across four subscales:

(i) ***Emotional Symptoms*** (*internalising*);
(ii) ***Peer Relationship Problems*** (*internalising*);
(iii) ***Conduct Problems*** (*externalising*);
(iv) ***Hyperactivity-Inattention*** (*externalising*).

The fifth subscale of the SDQ is not a measure of psychopathology but represents prosocial behaviour (***Prosocial Behaviour***). A ***Total Difficulties Score*** can be calculated by summing all four of the psychopathology subscales (Goodman, 2001). Each subscale of the SDQ is scored according to three categories: 'abnormal' symptomology (1-10th percentiles of the general population); 'borderline' symptomology (representing 11-20th percentiles); and, 'normal' symptomology (21-100th percentile). ***We report only on the 'abnormal' response category*** for 27,456 children with complete SDQ data.

4. Interactions with the criminal justice system: Police contacts (up to age ~14 years)

Child ***contacts with Police*** as a '***victim***', '***witness***' or '***person of interest***' were derived from the NSW Police Force Computerised Operational Policing System (COPS; 2002-2018) from birth to 14 years, for 91,631 children included in the COPS linkage. This record system records three types of contact with the police:

(i) A ***victim*** refers to someone who suffers harm as a direct result of an act committed by another person in the course of a criminal offence.
(ii) A ***witness*** refers to someone who is someone who has observed an incident or event that has required Police action.
(iii) A ***person of interest*** refers to someone who has not necessarily been arrested or formally accused of a crime but is of interest to the police during their investigation of an incident.

Among 91,631 children represented in the COPS linkage, 14,324 children (15.6%) had at least one police contact of any type; 11,204 (12.2%) children had police contact as a victim, 2,630 children (2.9%) had police contact as a witness, and 3,834 children (4.2%) had police contact as a person of interest. Groups of children with police contact as a victim, witness or person of interest were not mutually exclusive.

Data Analysis

We firstly present the prevalence of child protection contacts, demographics, perinatal and familial factors according to the separate populations derived for analyses of these four developmental outcomes (Table 1). We then present figures showing the percentage of children with each outcome according to child protection status and in further subgroups of children exposed to each individual demographic, perinatal and familial factor.

Table 1: Prevalence data for all covariates according to four developmental outcomes of interest.

	Developmental Outcome			
	AEDC domains	**NAPLAN**	**SDQ**	**Police Contacts**
Sample size according to outcome data availability	82,496	76,465	27,456	91,631
Highest child protection response				
OOHC	1,159 (1.4%)	1,112 (1.5%)	380 (1.4%)	1,454 (1.6%)
Substantiated ROSH report	1,786 (2.2%)	1,545 (2.0%)	561 (2.0%)	2,069 (2.3%)
non-Substantiated ROSH report	9,669 (11.7%)	8,670 (11.3%)	2,971 (10.8%)	10,890 (11.9%)
non-ROSH report	1,855 (2.2%)	1,689 (2.2%)	587 (2.1%)	2,042 (2.2%)
No Child Protection record	68,027 (82.4%)	63,449 (83.0%)	22,957 (83.6%)	75,176 (82.0%)
OOHC/Substantiated child protection reports[a]				
OOHC/Substantiated reports	2,945 (3.6%)	2,657 (3.5%)	941 (3.4%)	3,523 (3.9%)
Multiple ROSH reports[b]				
Single report	247 (8.6%)	223 (8.7%)	84 (9.2%)	288 (8.2%)
Multiple reports (2-10 reports)	1,614 (56.3%)	1,464 (56.9%)	537 (58.8%)	1,214 (56.0%)
Multiple reports (11+ reports)	1,004 (35.0%)	888 (34.5%)	292 (32.0%)	1,218 (35.6%)
Multiple maltreatment type[b]				
Single	2,519 (87.5%)	2,258 (87.1%)	816 (88.7%)	2,983 (86.7%)
Multiple	360 (12.5%)	333 (12.9%)	104 (11.3%)	458 (13.3%)
Type of maltreatment[c]				
Physical Abuse	287 (11.4%)	272 (12.0%)	155 (16.5%)	355 (11.9%)
Sexual Abuse	170 (6.7%)	141 (6.2%)	72 (7.7%)	193 (6.5%)
Emotional Abuse	814 (32.3%)	735 (32.5%)	335 (25.6%)	937 (31.4%)
Neglect	544 (21.6%)	472 (20.9%)	234 (24.9%)	648 (21.7%)
Covariates				
Male sex	41,912 (50.8%)	38,952 (50.9%)	13,842 (50.4%)	47,422 (51.8%)
Indigenous	6,096 (7.4%)	5,328 (7.0%)	1,930 (7.0%)	6,899 (7.5%)
Socioeconomic disadvantage	20,185 (24.5%)	17,710 (23.2%)	5,942 (21.6%)	21,486 (23.4%)
Young mother at birth	12,579 (15.2%)	11,559 (15.1%)	4,106 (14.9%)	13,900 (15.1%)
Pre-term birth	4,295 (5.2%)	4,083 (5.3%)	1,455 (5.2%)	4,855 (5.3%)
Prenatal smoking exposure	10,059 (12.2%)	9,127 (11.9%)	3,244 (11.8%)	11,239 (12.26%)
Parental mental illness	16,475 (20.0%)	15,351 (20.1%)	5,317 (19.4%)	18,305 (20.0%)
Parental criminal history	22,203 (26.9%)	20,651 (27.0%)	7,168 (26.1%)	24,437 (26.6%)

[a]Includes children with Substantiated ROSH or OOHC placement; [b]Restricted to children with Substantiated ROSH or OOHC placement; [c]Restricted to children with a single type of maltreatment and Substantiated ROSH or OOHC placement.

Notes: AEDC=Australian Early Development Census; NAPLAN=National Assessment Program – Literacy and Numeracy (NAPLAN); SDQ=Strength and Difficulties Questionnaire; OOHC=out-of-home care; ROSH=Risk of Significant Harm

Findings According to Developmental Outcome

A. Developmental Vulnerability and At-Risk status on single and multiple AEDC domains (Age 5 years)

Box A: Summary of findings related to AEDC Developmental Vulnerability as presented in this report:

- **Between 9%-25% of children known to child protection services before school entry showed 'developmental vulnerability' on AEDC domains (Figure A1), and between 13%-23% of these children were developmentally 'at-risk' on AEDC domains (Figure A2).**
- **Between 55%-70% of children known to child protection services by age 5 years performed 'on-track' (i.e., showing no developmental vulnerability) on all domains of the AEDC; 55% of children placed in OOHC before age 5 years showed no developmental vulnerability (Figure A3).**
- **A higher proportion of children with multiple ROSH reports were developmentally vulnerable, relative to the proportion of children with single ROSH reports, for all AEDC domains (Figure A5).**
- **Between 21%-30% of children exposed to multiple maltreatment types, and between 18-21% of those exposed to single maltreatment type, showed developmental vulnerability on the AEDC (Figure A6).**
- **The highest rates of developmental vulnerability were evidenced among children exposed to neglect (Figure A7; note: this is only among children exposed to a single type of substantiated maltreatment, and the rates of developmental vulnerability among children exposed to other types of maltreatment were only slightly lower).**
- **The percentage of children with substantiated child protection reports (i.e., substantiated ROSH or OOHC placement) who were showing developmental vulnerability on the AEDC domains was largely consistent among various subgroups exposed to other risk factors known to have small but significant effects on early developmental functioning, and which are also associated with being maltreated (e.g., being of male sex or Indigenous status; those born pre-term or to younger mothers, exposed to socioeconomic disadvantage, maternal smoking in utero, parental mental disorder, or parental criminal offending: see Figures A8-A23).**

AEDC: Highest Level of Child Protection Status

Figure A1: Percent of children within each level of child protection response (before age 5-6 years), who are showing AEDC Developmental 'Vulnerability' status per domain (N=82,496).

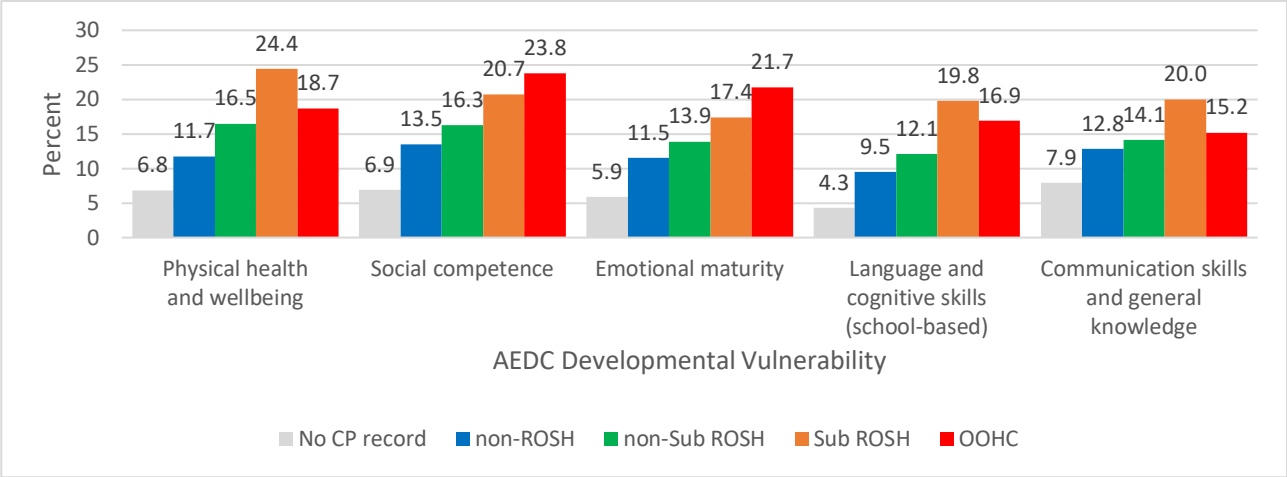


Figure A2: Percent of children within each level of child protection response (before age 5-6 years), who are showing AEDC Developmental 'At-risk' status per domain (N=82,496).

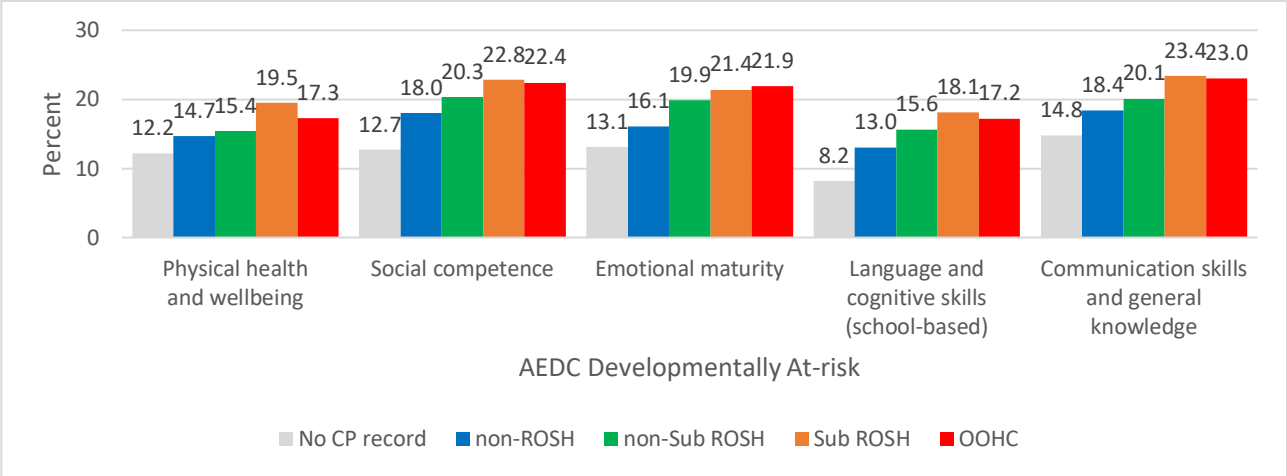
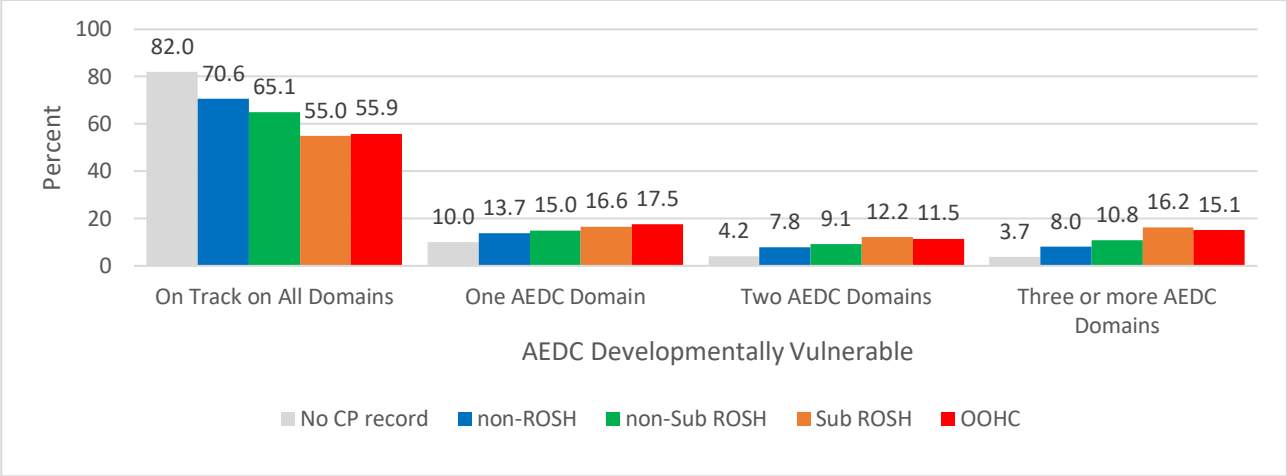


Figure A3: Percent of children within each level of child protection response (before age 5-6 years), who show vulnerability on multiple AEDC domains, or who are 'On-track' on all domains (N=82,496).



AEDC: OOHC/Substantiated Child Protection reports and Subgroup Comparisons

Figure A4: Percent of children within each child protection (CP) subgroup who are developmentally 'Vulnerable' or 'At-risk' on each AEDC domain (N=70,972).

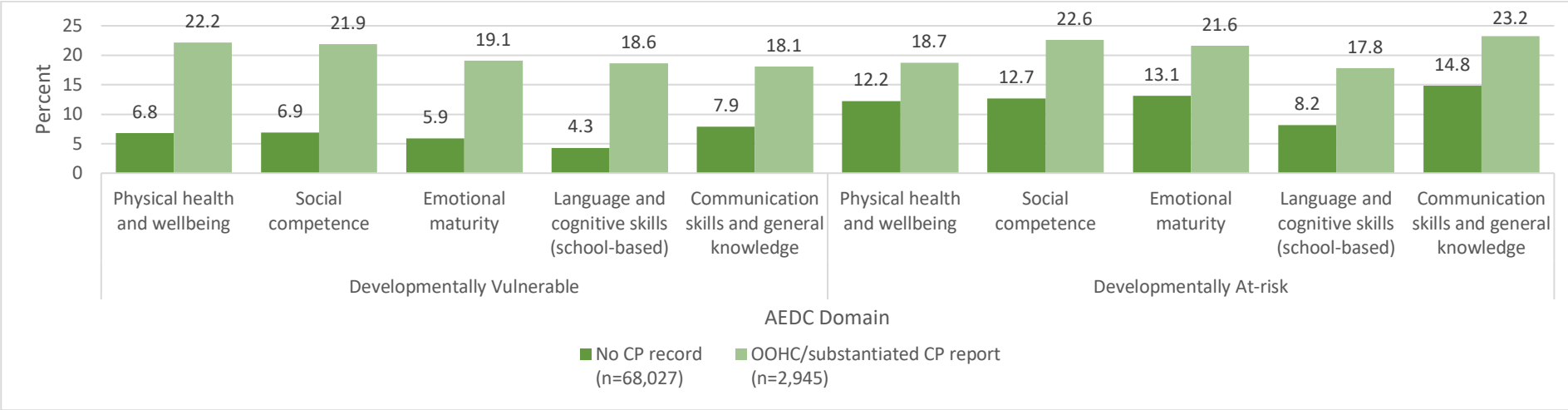


Figure A5: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) showing AEDC Developmental 'Vulnerability', according to the number of ROSH reports (N=2,886).

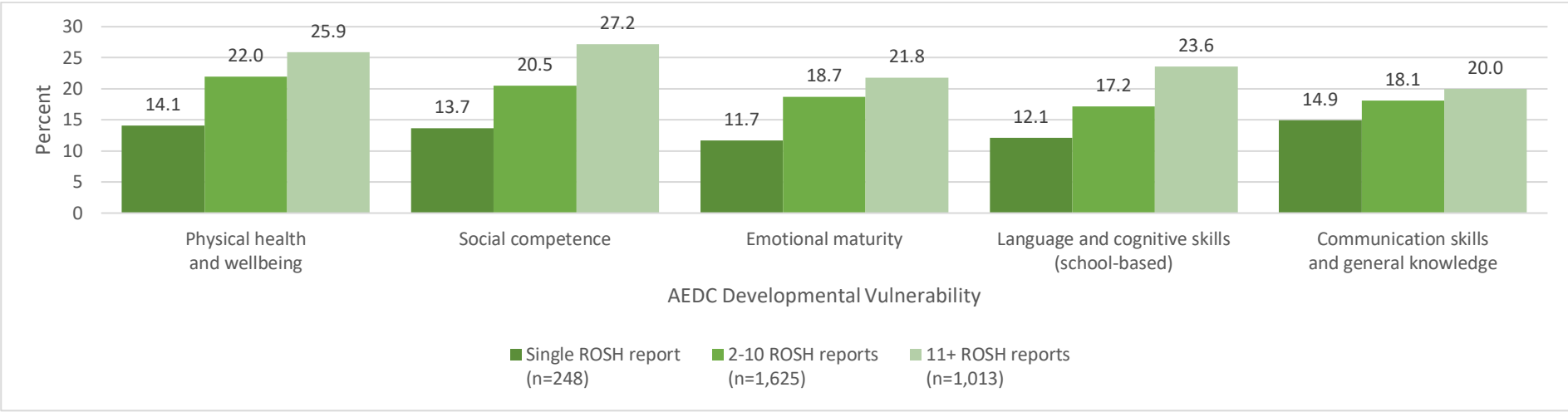


Figure A6: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) showing AEDC Developmental 'Vulnerability' according to single and multiple maltreatment types (N=2,879).

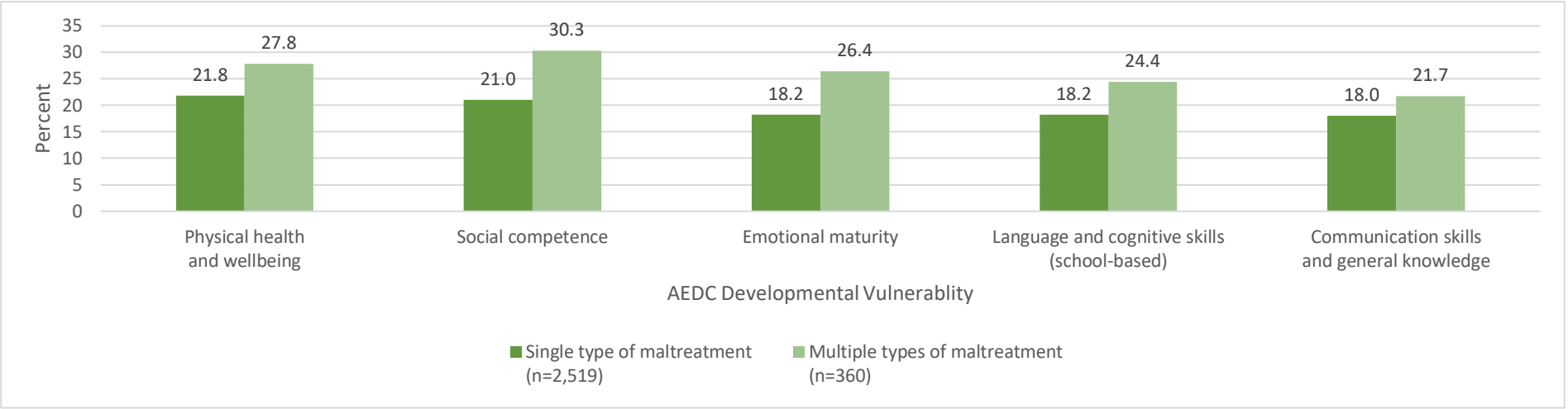


Figure A7: Percent of children with a single type of substantiated maltreatment showing AEDC Developmental 'Vulnerability', by maltreatment type (N=1,815).

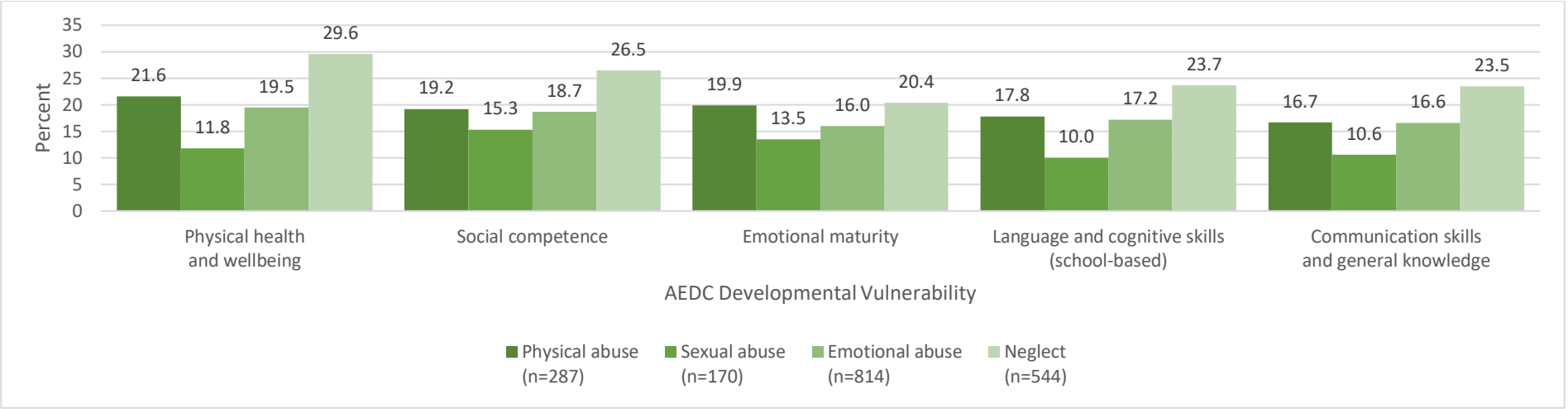


Figure A8: Percent of children within each child protection (CP) subgroup identified as boys and girls, who show AEDC Developmental 'Vulnerability' status per domain (N=70,972).

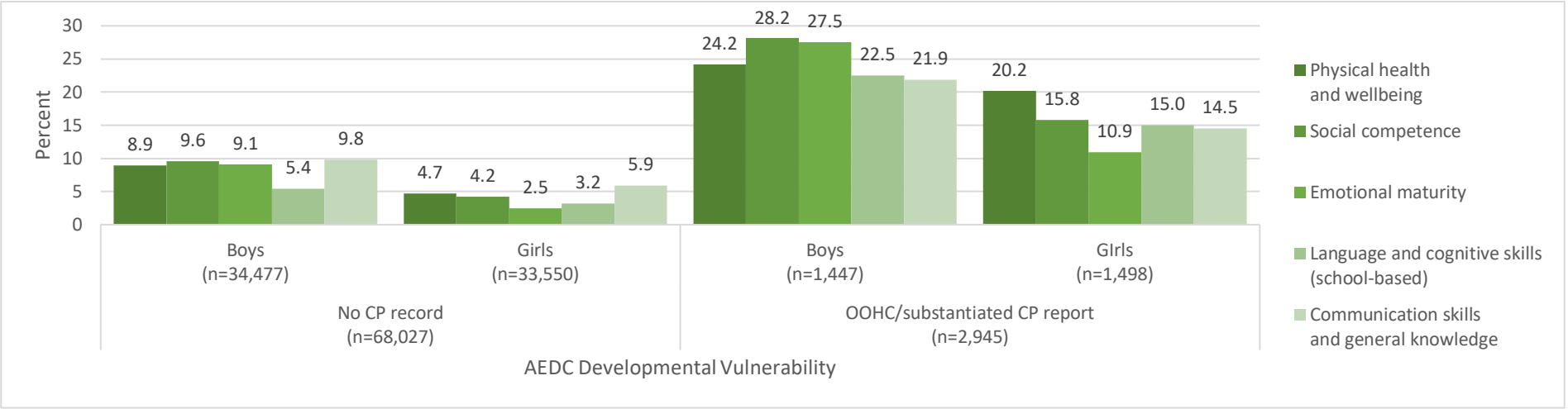


Figure A9: Distribution of boys and girls as a percent of the group of Developmentally 'Vulnerable' children per AEDC domain, by OOHC/substantiated child protection (CP) reports.

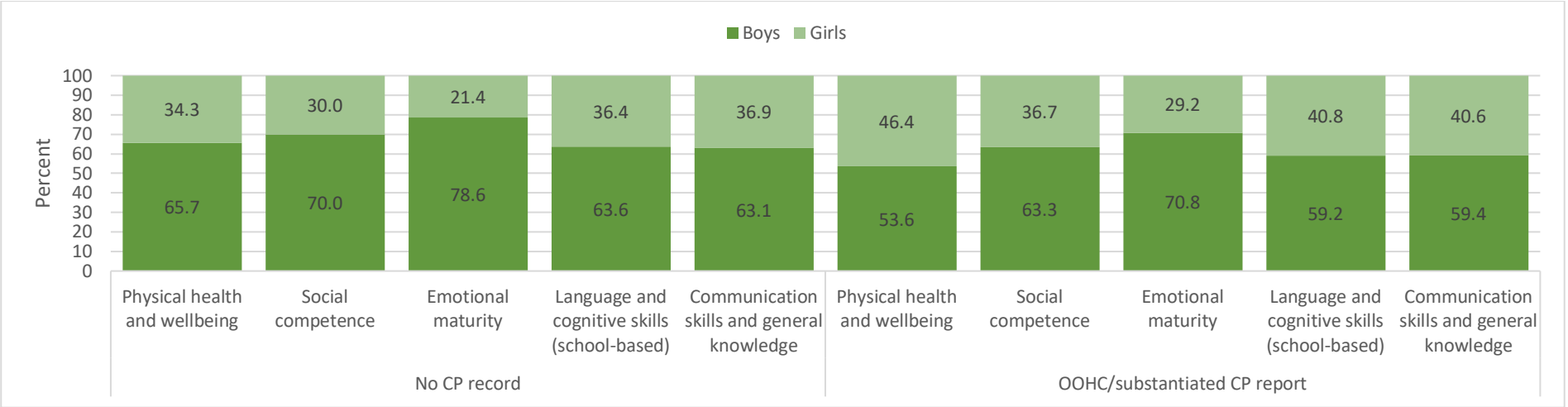


Figure A10: Percent of children within each child protection (CP) subgroup who were identified as Indigenous and non-Indigenous, who show AEDC Developmental 'Vulnerability' status per domain (N=70,972).

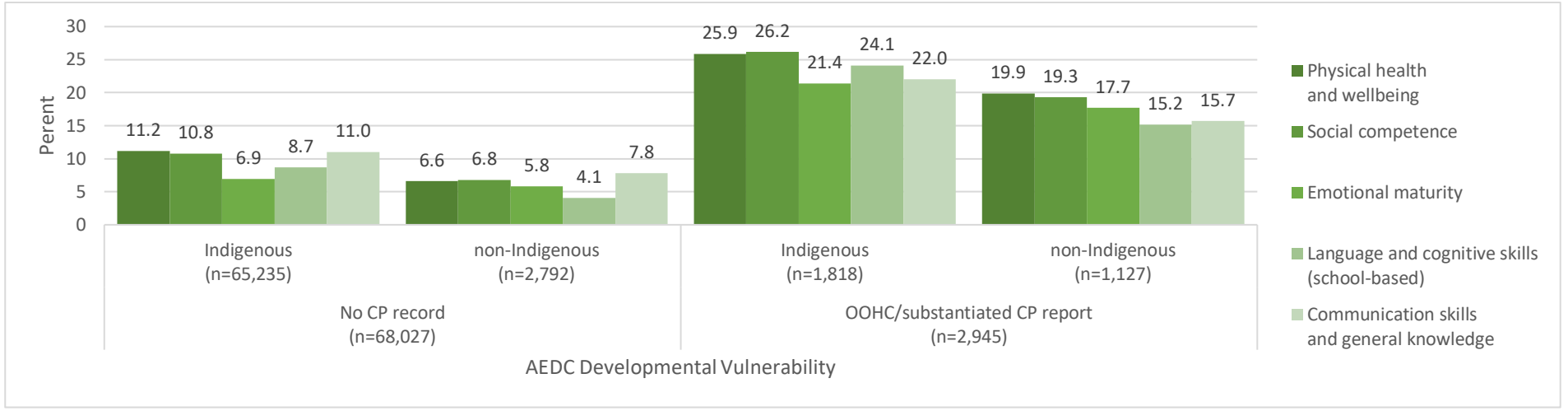


Figure A11. Distribution of Indigenous and non-Indigenous children as a percent of the group of Developmentally 'Vulnerable' children per AEDC domain, by OOHC/substantiated child protection (CP) reports.

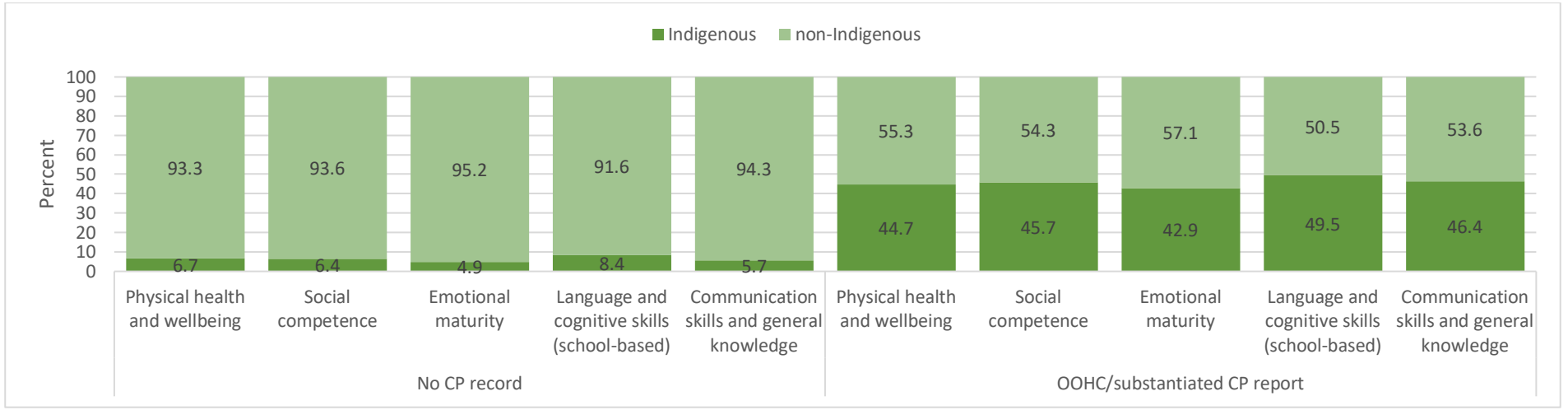


Figure A12: Percent of children within each child protection (CP) subgroup who were identified in the most disadvantaged (SEIFA Quintile 1) and least disadvantaged (SEIFA Quintiles 2-5) areas, who show AEDC Developmental 'Vulnerability' status per domain (N=70,840).

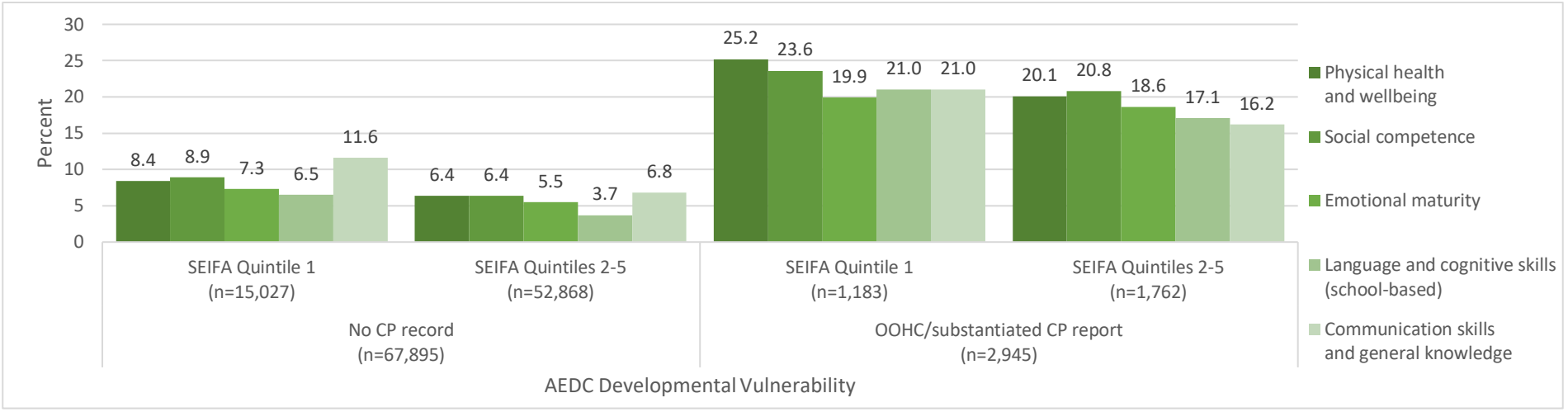


Figure A13: Distribution of children socioeconomic disadvantage as a percent of the group of Developmentally 'Vulnerable children per AEDC domain, by OOHC/substantiated child protection (CP) reports.

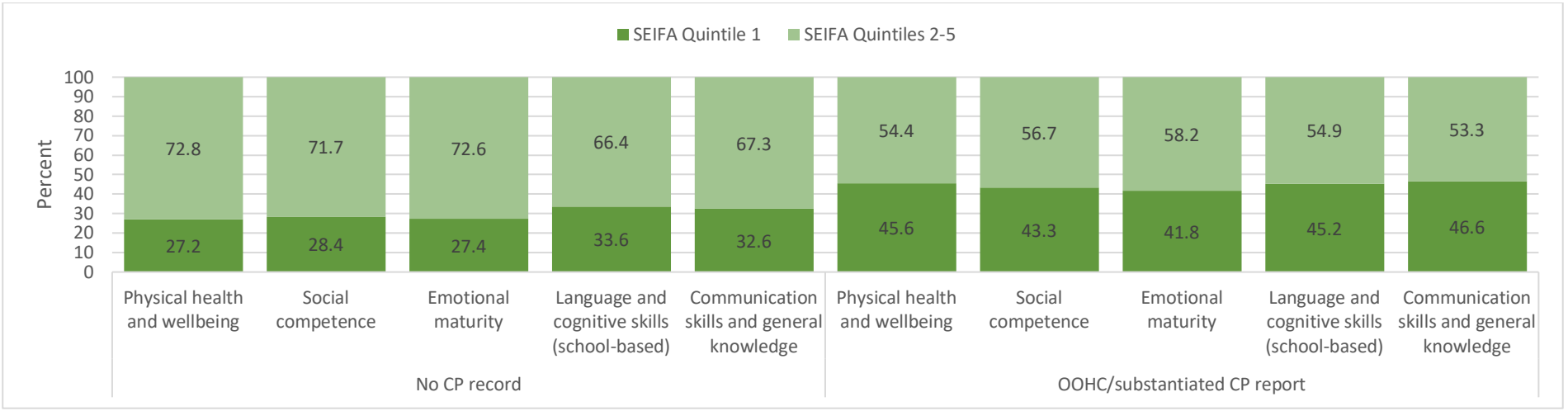


Figure A14: Percent of children within each child protection (CP) subgroup who had younger or older mothers at the time of birth, who show Developmental 'Vulnerability' status per domain (N=59,261).

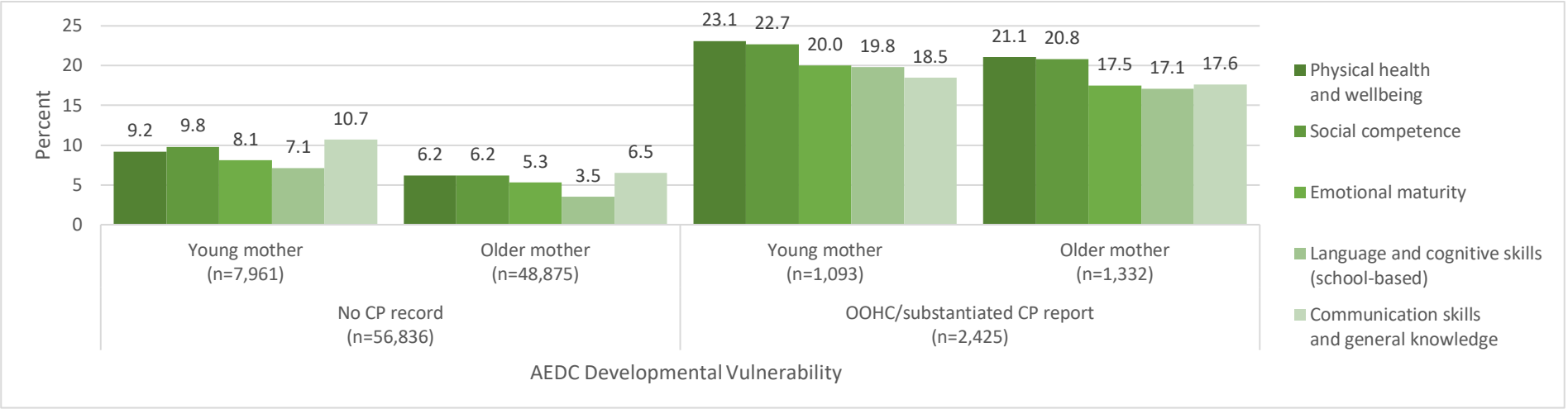


Figure A15: Distribution of children with younger or older mothers at the time of birth as a percent of the group of Developmentally 'Vulnerable children per AEDC domain, by OOHC/substantiated child protection (CP) reports.

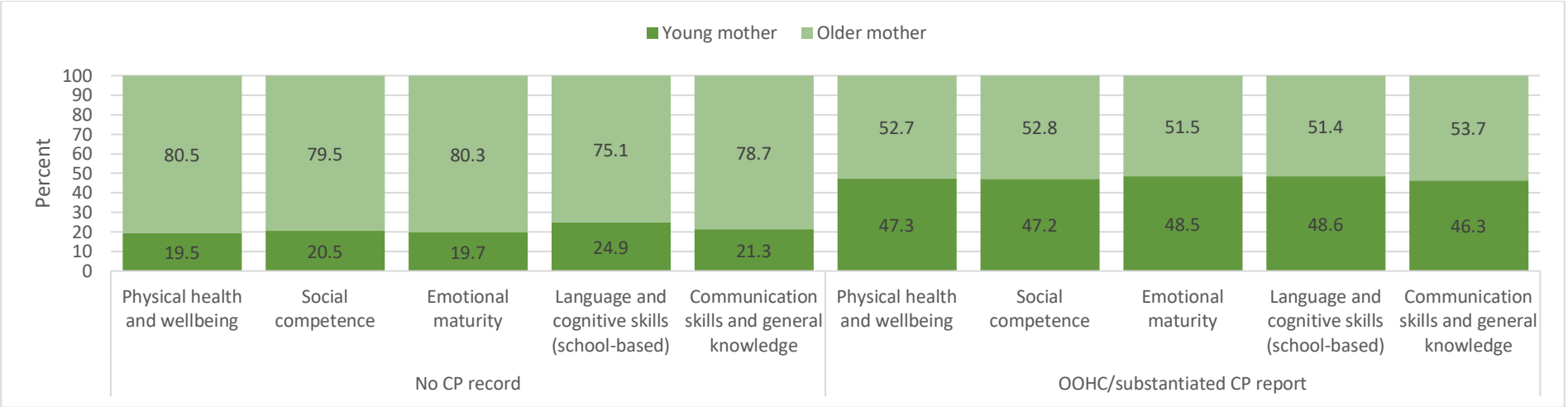


Figure A16: Percent of children within each child protection (CP) subgroup exposed to maternal smoking in utero who show AEDC Developmental 'Vulnerability' status per domain (N=59,037).

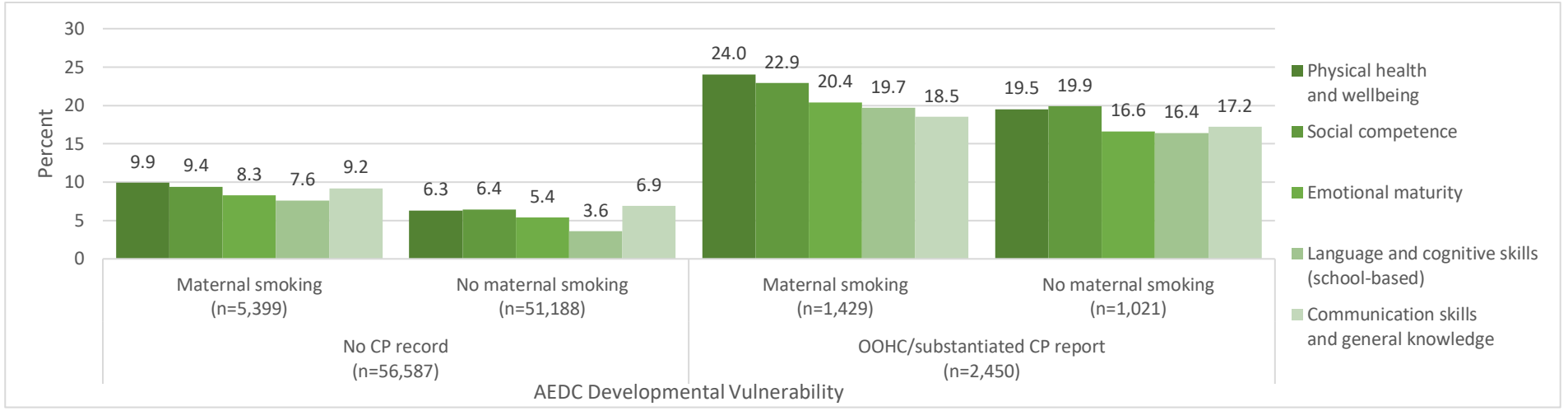


Figure A17: Distribution of children exposed to maternal smoking in utero as a percent of the group of Developmentally 'Vulnerable' children per AEDC domain, by substantiated child protection (CP) reports.

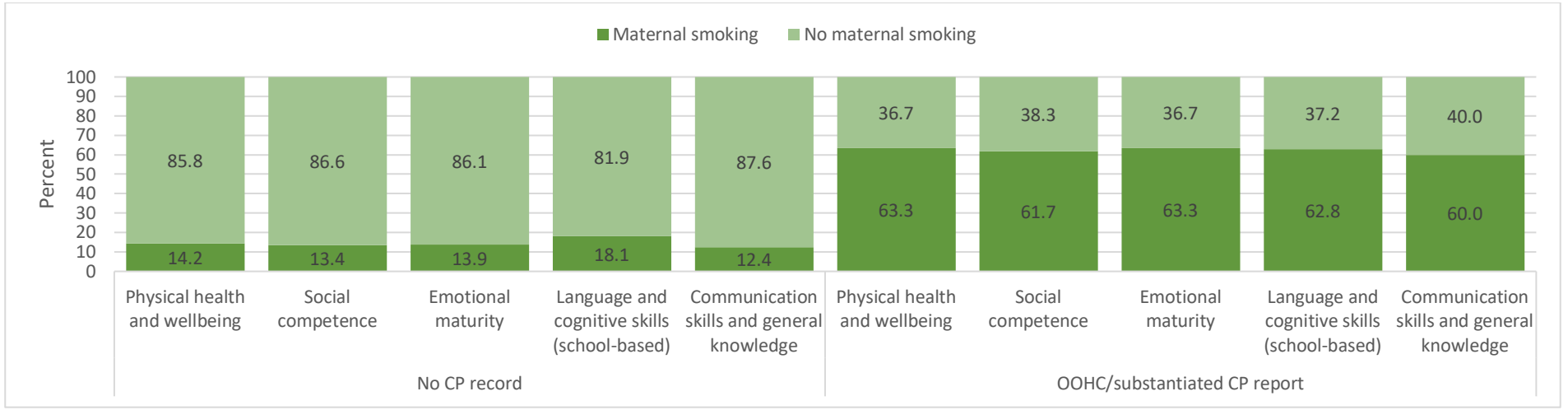


Figure A18: Percent of children within each child protection (CP) subgroup who were born pre-term or full-term, who show AEDC Developmental 'Vulnerability' status per domain (N=59,032).

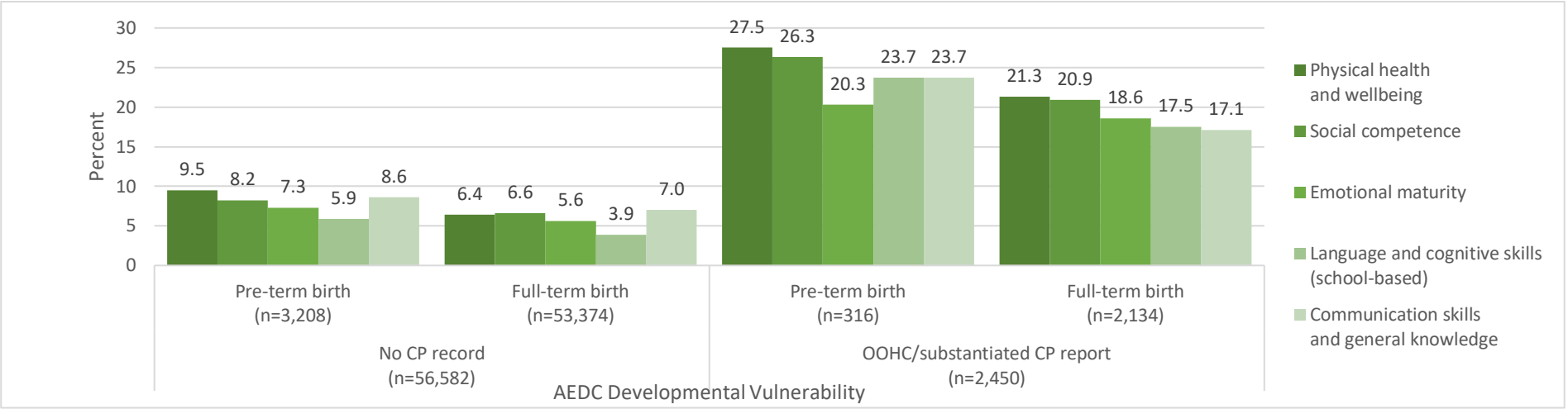


Figure A19: Distribution of children born pre-term or full-term as a percent of the group of Developmentally 'Vulnerable' children per AEDC domain, by OOHC/substantiated child protection (CP) reports.

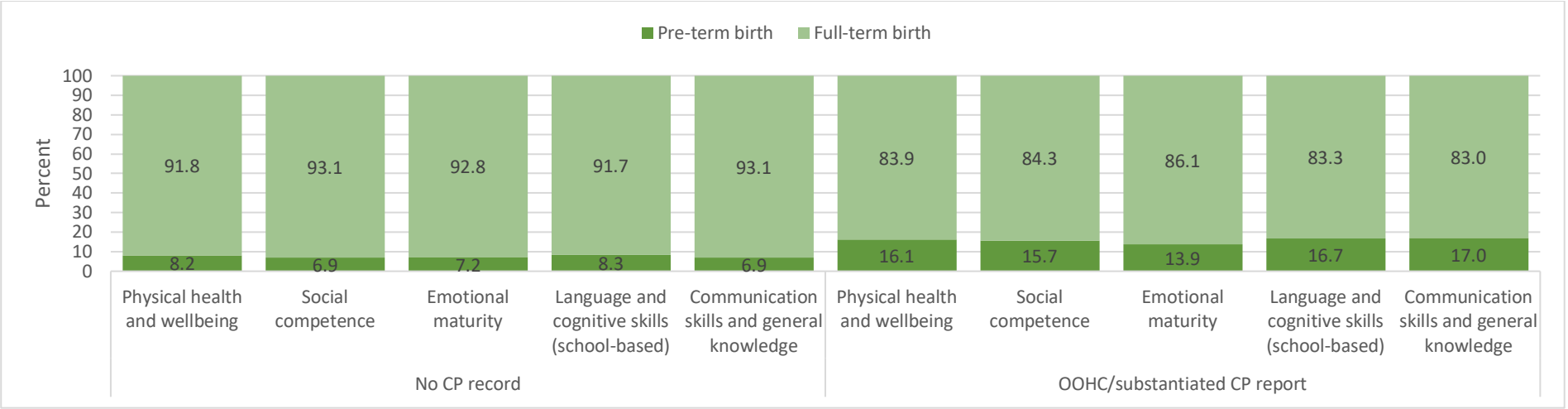


Figure A20: Percent of children within each child protection (CP) subgroup who have a parent with mental illness who show AEDC Developmental 'Vulnerability' status per domain (N=59,328).

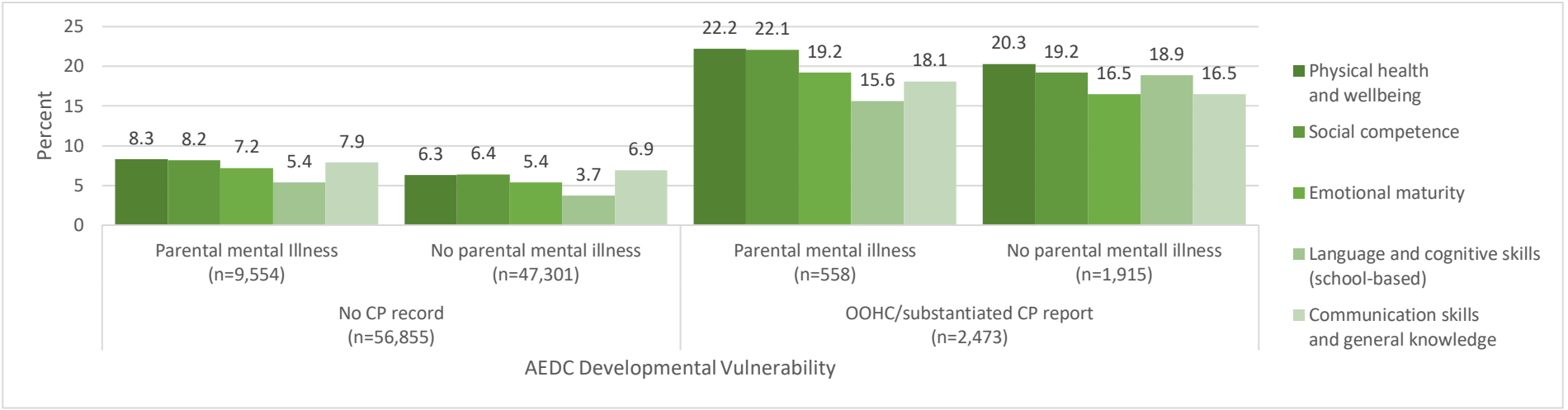


Figure A21: Distribution of children exposed to parental mental illness as a percent of the group of Developmentally 'Vulnerable' children per AEDC domain, by OOHC/substantiated child protection (CP) reports.

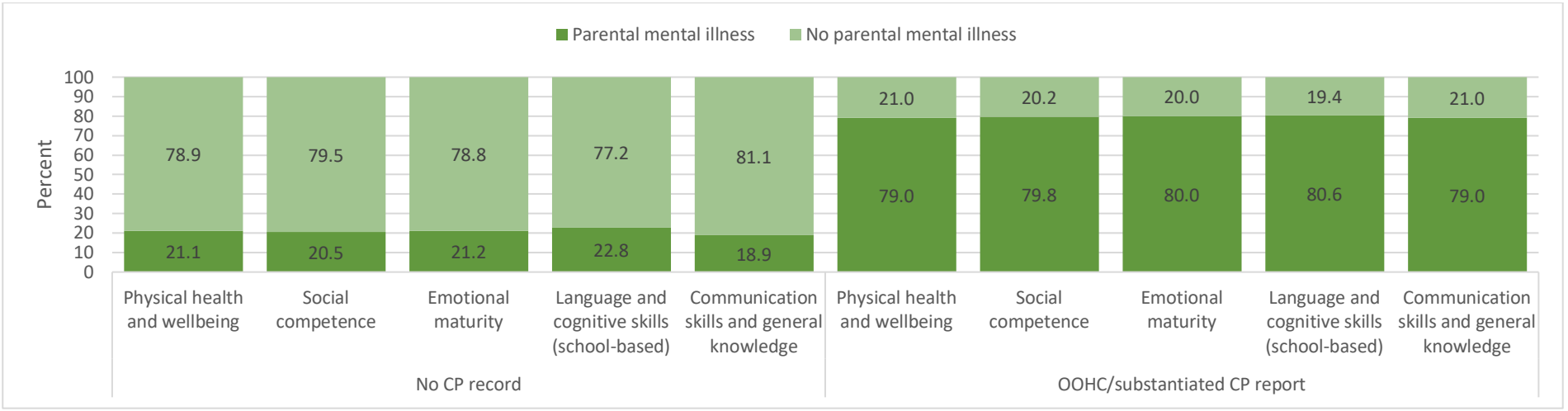


Figure A22: Percent of children within each child protection (CP) subgroup identified exposed to parental criminal history who show AEDC Developmental 'Vulnerability' status per domain (N=59,328).

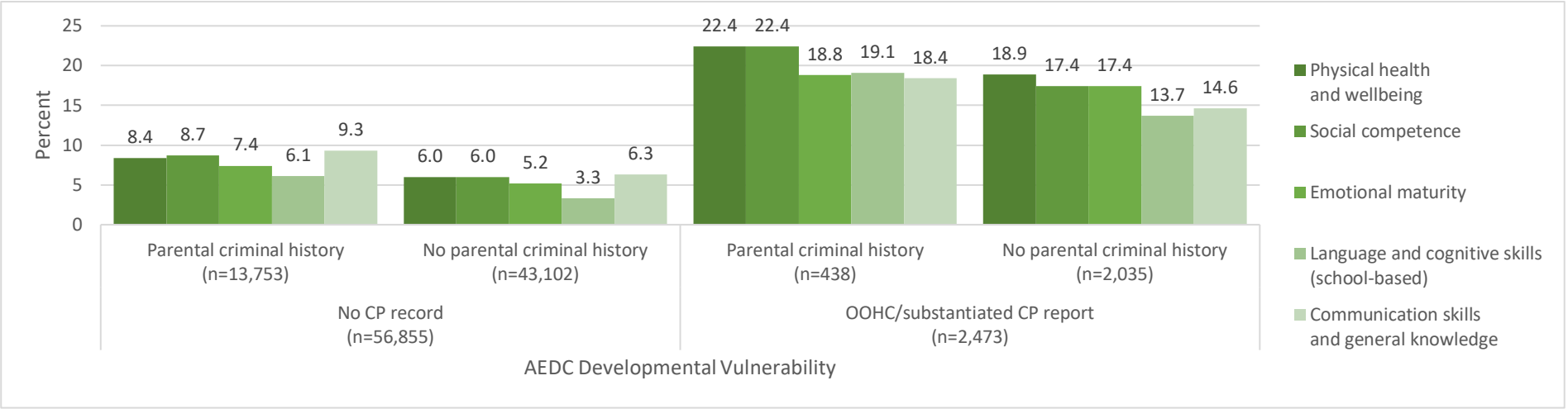
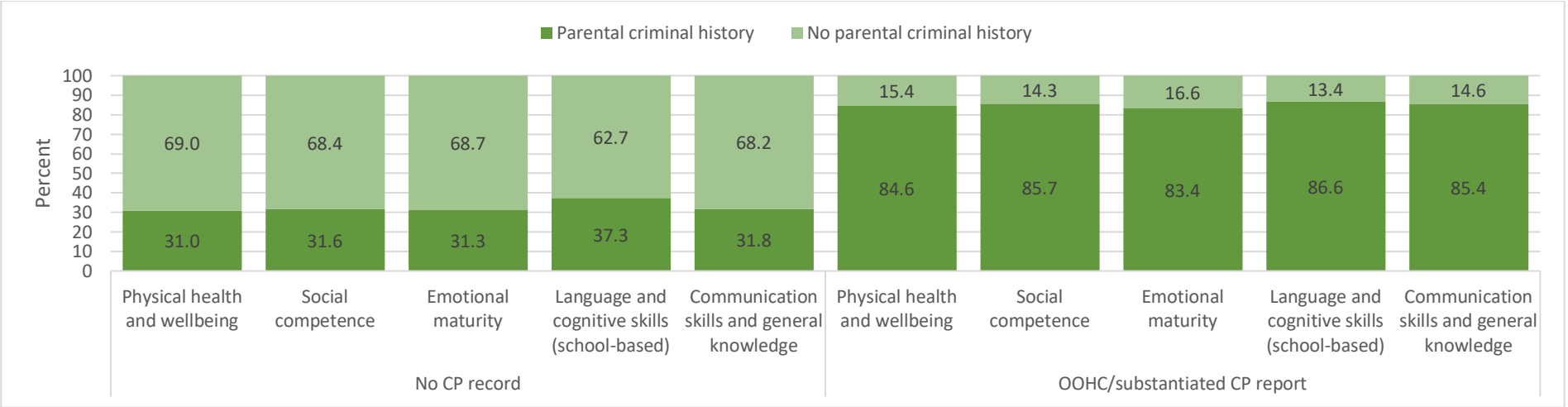


Figure A23: Distribution of children exposed to parental criminal history as a percent of the group of Developmentally 'Vulnerable' children per AEDC domain, by OOHC/substantiated child protection (CP) reports.



B. Academic Achievement (Grade 5 NAPLAN; Age 10 years)

Box B: Summary of findings related to NAPLAN educational attainment as presented in this report:

- **Between 7%-25% of children known to child protection services before school entry did not attain national minimum standards on their Grade 5 NAPLAN tests (Figure B1), and between 16%-48% were performing at or below national minimum standard (Figure B2), across all domains assessed.**
- **Between 58%-79% of children known to child protection services by age 5 years were performing at or above national minimum standard on their Grade 5 NAPLAN tests (Figure B3).**
- **A higher proportion of children with multiple ROSH reports did not attain national minimum standards on their Grade 5 NAPLAN tests, across all domains assessed, relative to the proportion of children with single ROSH reports (Figure B5).**
- **Between 19%-30% of children exposed to multiple maltreatment types, and 14%-24% of children exposed to single maltreatment types, did not attain national minimum standards on their Grade 5 NAPLAN tests (Figure B6).**
- **There were minor differences in the proportion of children who did not attain national minimum standards on their Grade 5 NAPLAN tests, according to the type of maltreatment (Figure B7), with the exception that rates were lower among children exposed to sexual abuse; this may reflect the small number of children in this subgroup of children exposed to a single type of maltreatment.**
- **The percentage of children with substantiated child protection reports (i.e., substantiated ROSH or OOHC placement) who did not achieve national minimum standard on their Grade 5 NAPLAN tests was largely consistent among various subgroups exposed to other risk factors known to have small effects on child development (e.g., being of male sex or Indigenous status; those born pre-term or to younger mothers, or exposed to socioeconomic disadvantage, maternal smoking in utero, or parental mental disorder:see Figures B8-B21).**
- **A high proportion of children with substantiated reports had a parent with a history of criminal offending, and these children were more highly represented in the group that did not achieve national minimum standards on their Grade 5 NAPLAN tests than the group with substantiated reports but no parental history of criminal offending (Figure B22).**

NAPLAN: Highest Level of Child Protection Status

*Figure B1: Percent of children within each level of child protection response (before age 5-6 years), who are achieving **below national minimum standard** on NAPLAN domains (N=76,465).*

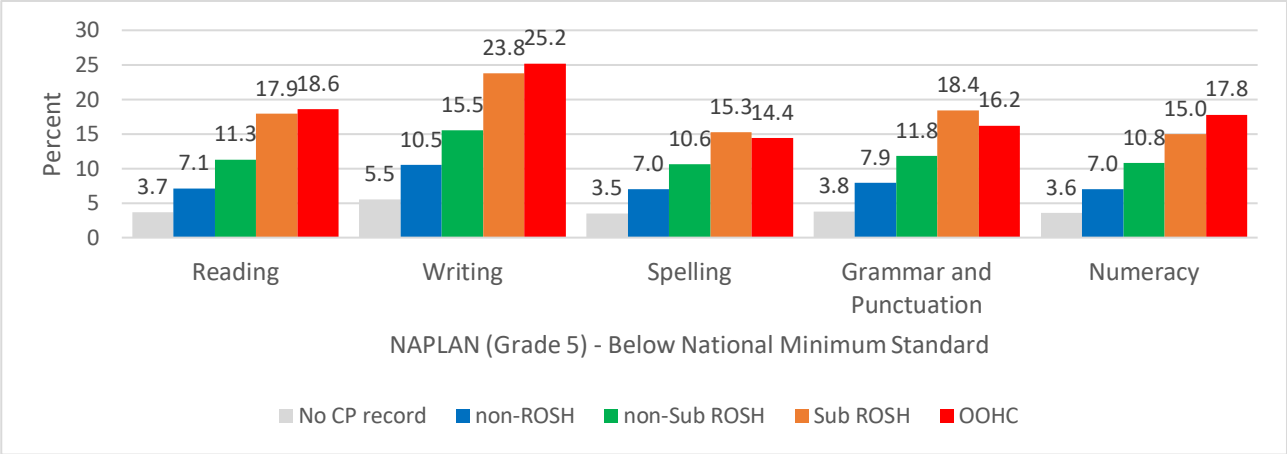


*Figure B2: Percent of children within each level of child protection response (before age 5-6 years), who are achieving **at or below national minimum standard** on NAPLAN domains (N=76,465).*

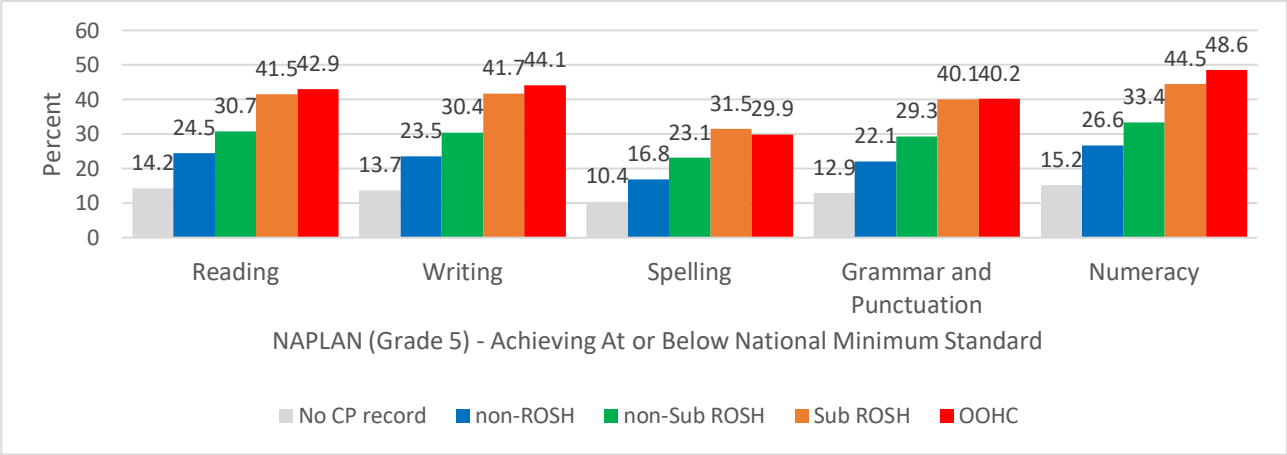
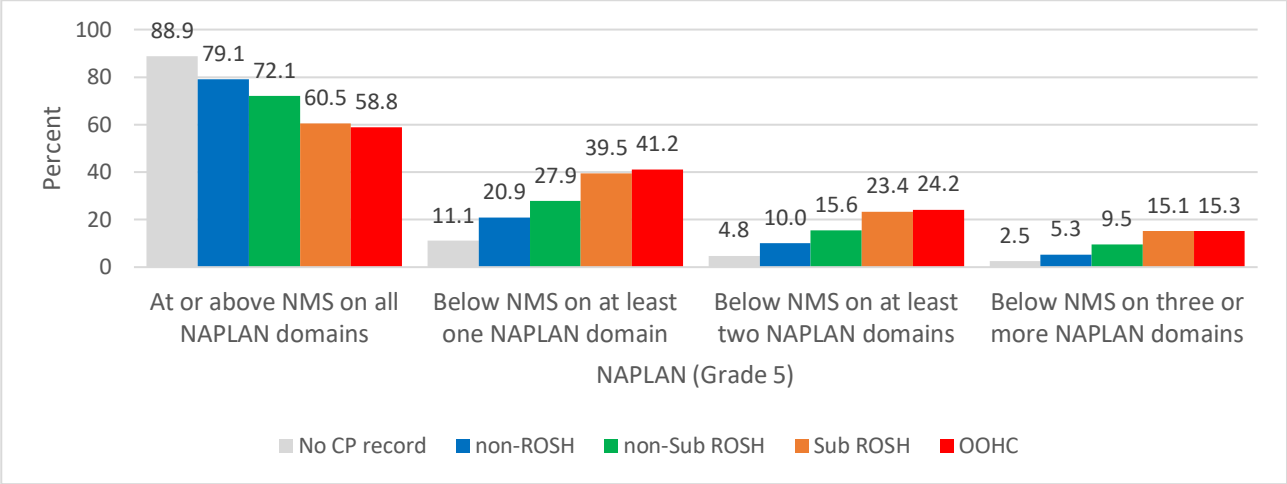


Figure B3: Percent of children within each level of children protection (CP) response (before age 5-6 years) who are achieving below national minimum standard on multiple NAPLAN domains, or who are at or above national minimum standard on all domains (N=76,465).



Note: NMS=national minimum standard

NAPLAN: OOHC/Substantiated Child Protection reports and Subgroup Comparisons

Figure B4: Percent of children with substantiated child protection reports (before age 5-6 years), who are achieving below national minimum standard on NAPLAN domains (N=66,096).

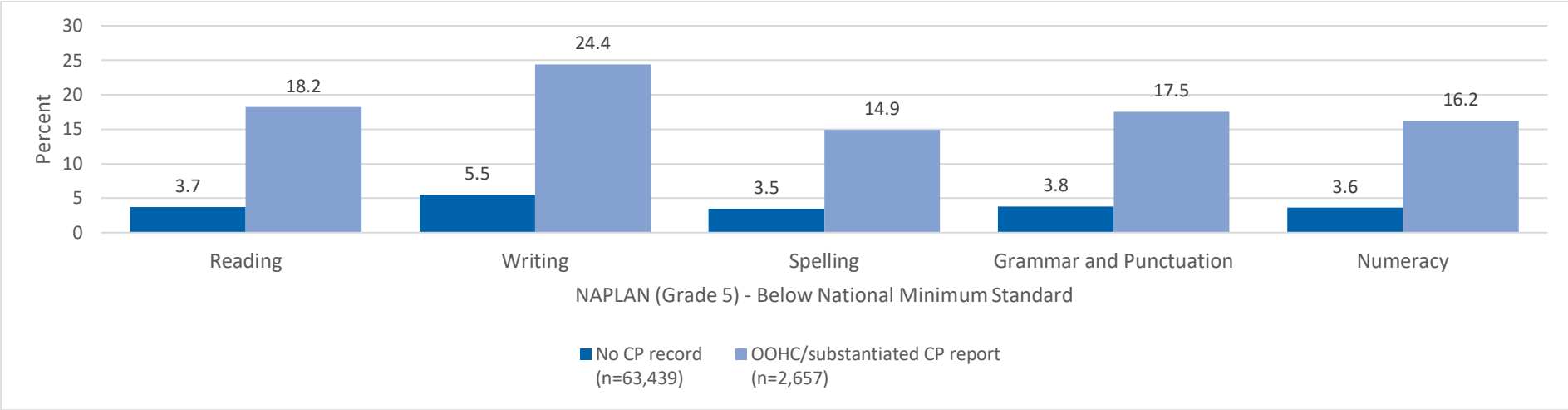


Figure B5: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) who are achieving below national minimum standard on NAPLAN domains, according to the number of ROSH reports (N=2,575).

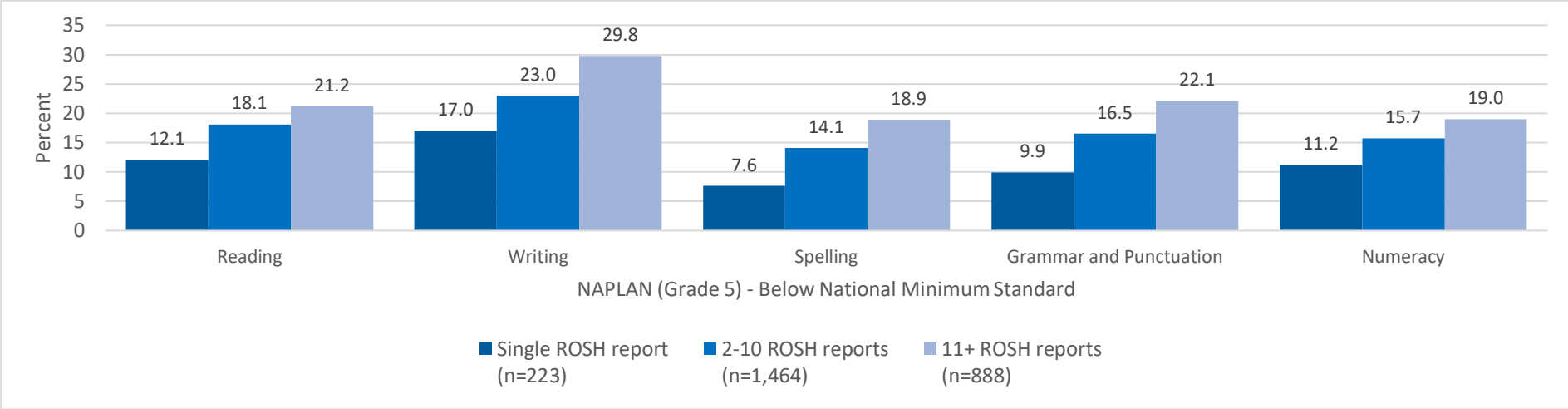


Figure B6: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) who are achieving below national minimum standard on NAPLAN domains, according to single and multiple maltreatment types (N=2,591).

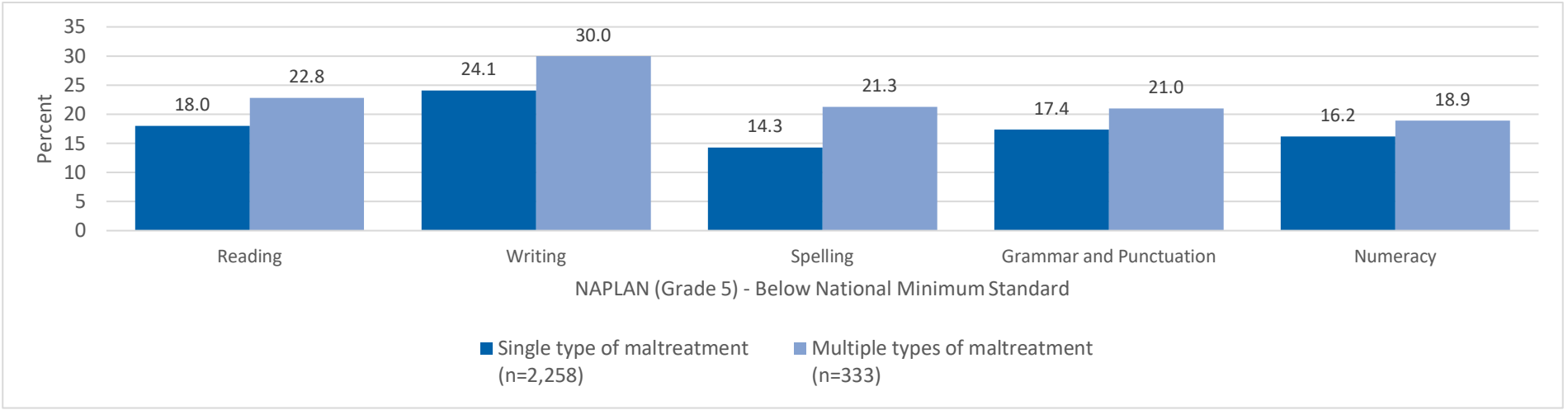


Figure B7: Percent of children with a single type of substantiated maltreatment who are achieving below national minimum standard on NAPLAN domains, by maltreatment type (N=1,621).

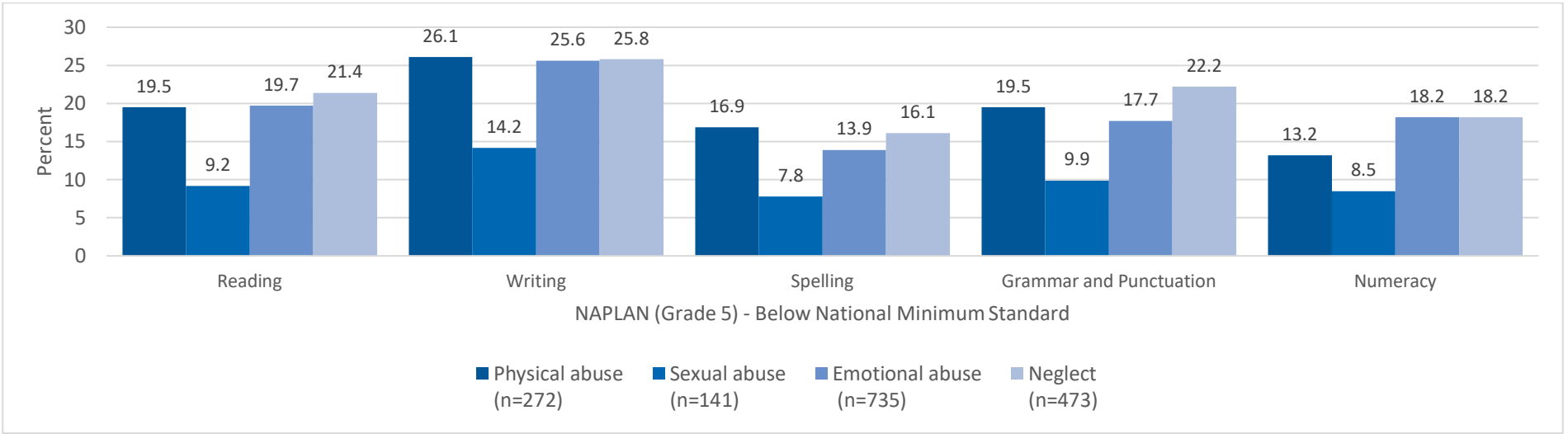


Figure B8: Percent of children within each child protection (CP) subgroup identified as boys and girls, who are achieving below national minimum standard on NAPLAN domains (N=66,106).

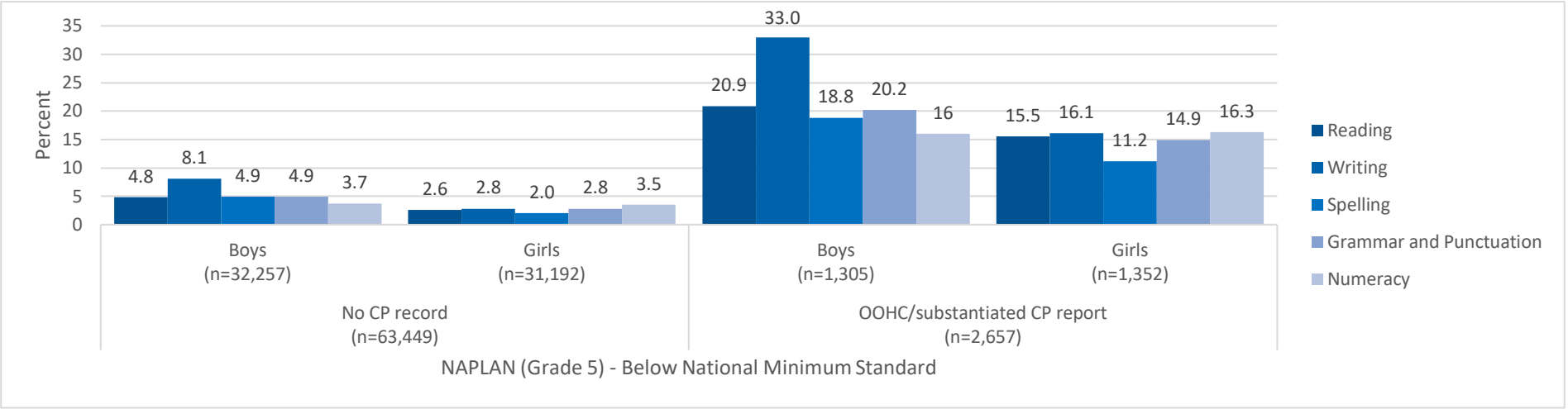


Figure B9: Distribution of boys and girls as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

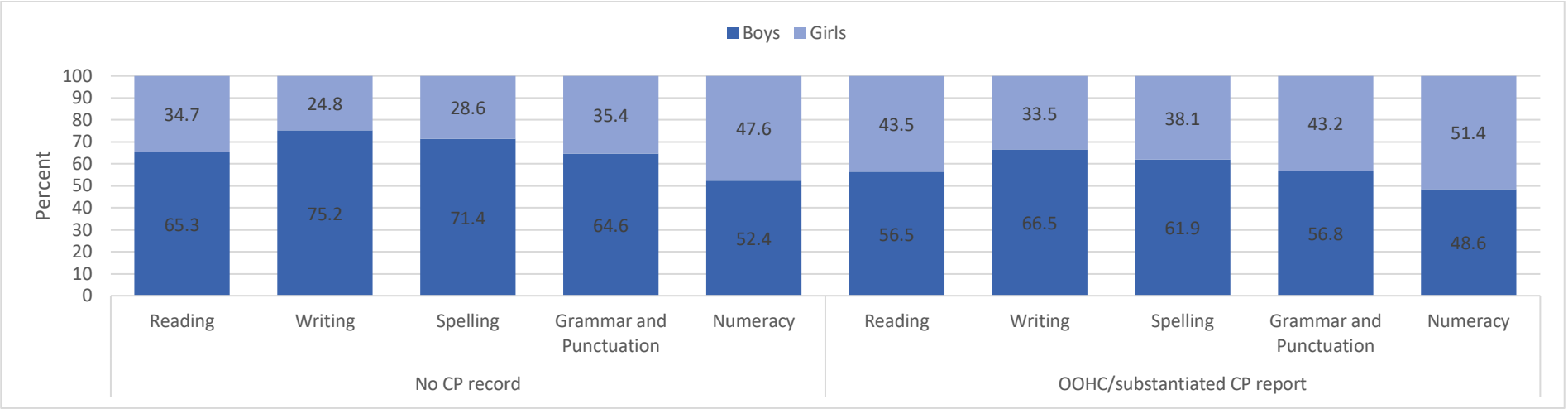


Figure B10: Percent of children within each child protection (CP) subgroup identified as Indigenous or non-Indigenous, who are achieving below national minimum standard on NAPLAN domains (N=66,106).

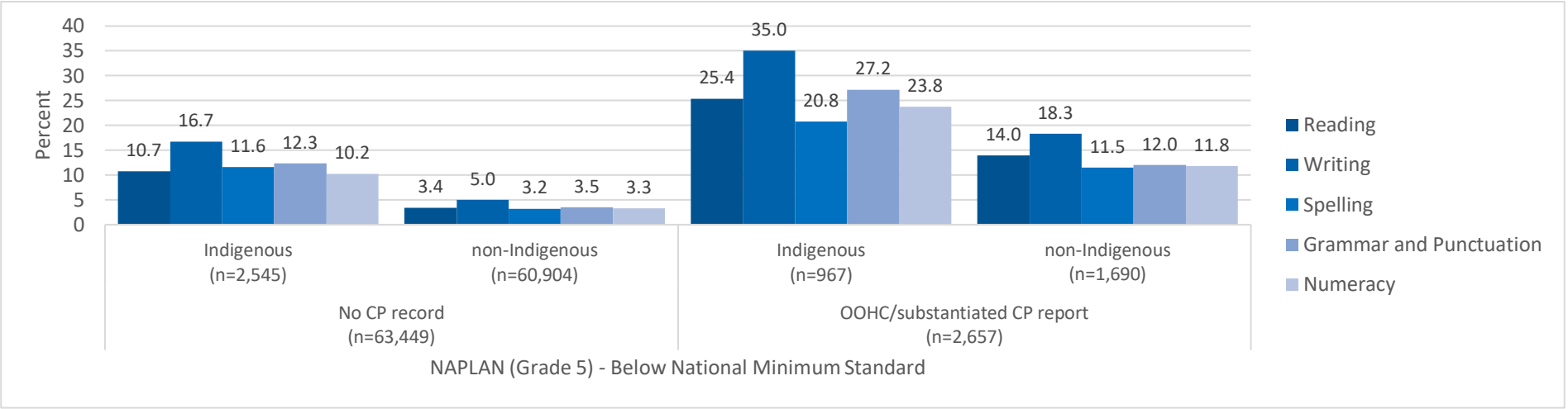


Figure B11: Distribution of Indigenous and non-Indigenous children as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

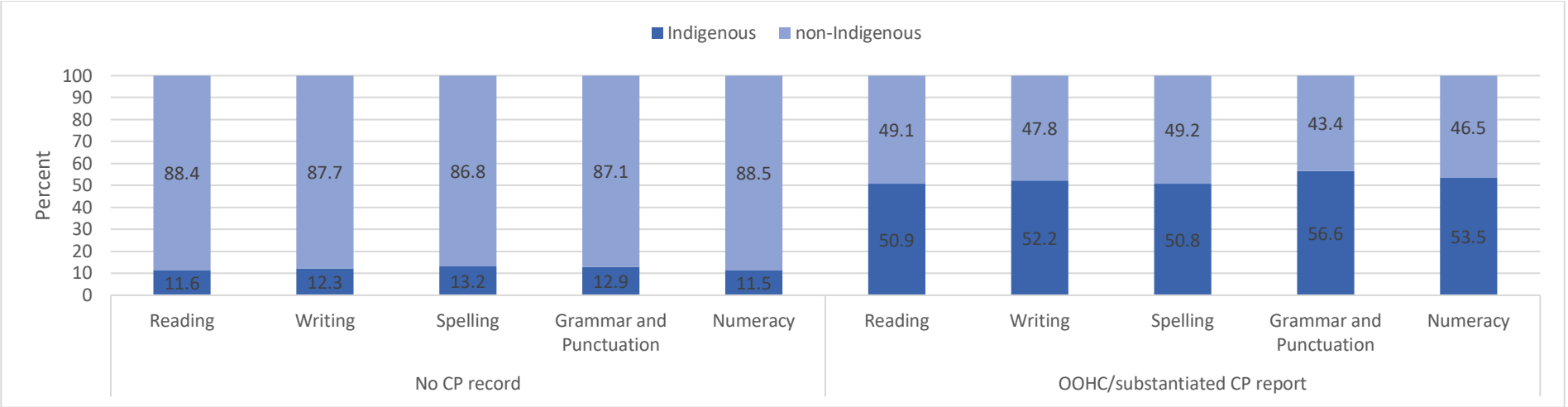


Figure B12: Percent of children within each child protection (CP) subgroup identified in the most disadvantaged (SEIFA Quintile 1) and least disadvantaged (SEIFA Quintiles 2-5) areas, who are achieving below national minimum standard on NAPLAN domains (N=62,566).

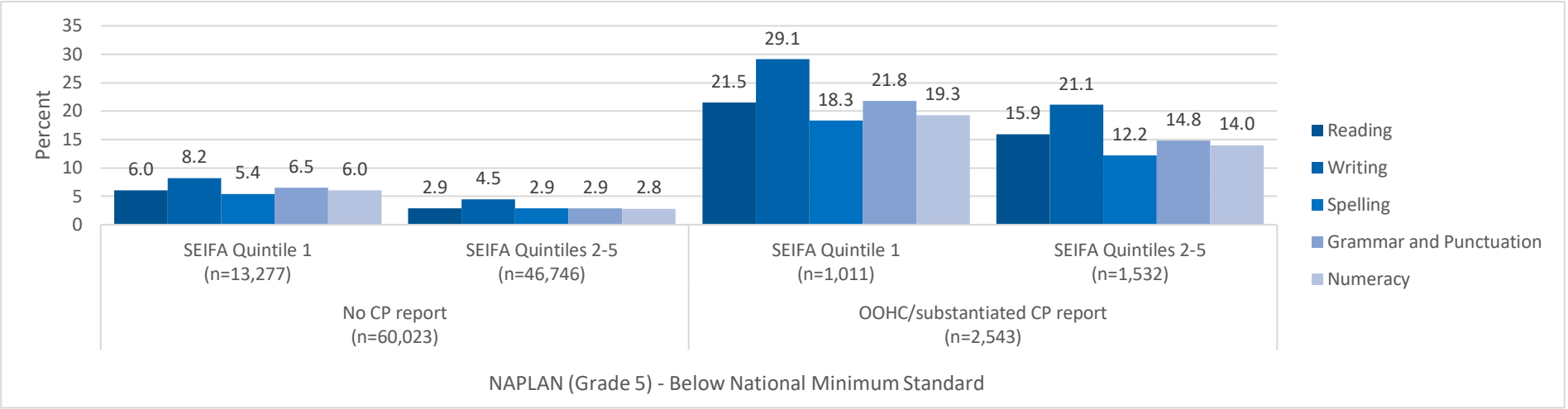


Figure B13: Distribution of socioeconomic disadvantage as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

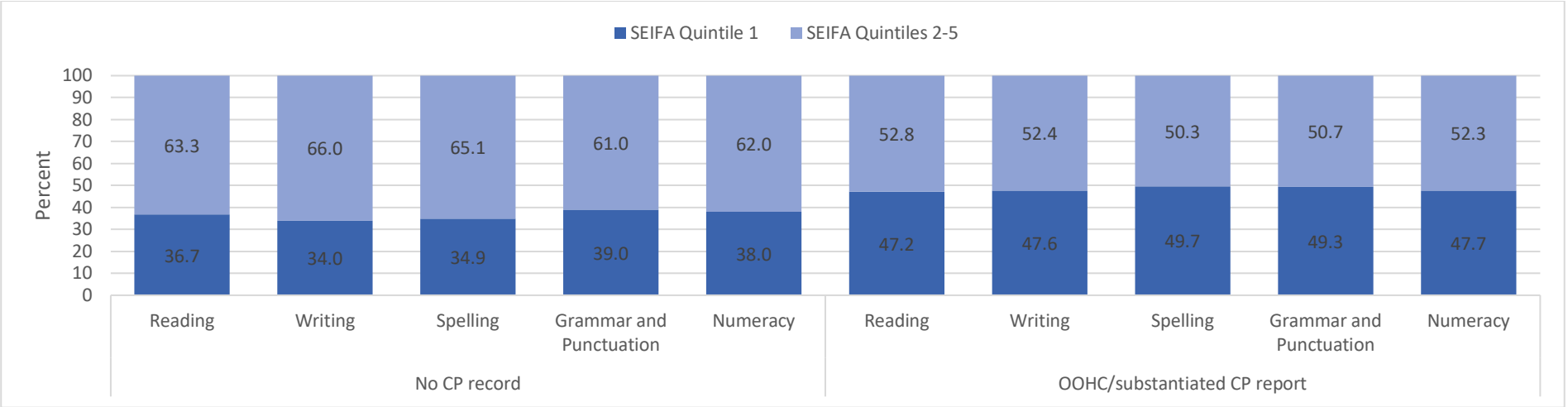


Figure B14: Percent of children within each child protection (CP) subgroup born to younger or older mothers who are achieving below national minimum standard on NAPLAN domains (N=56,630).

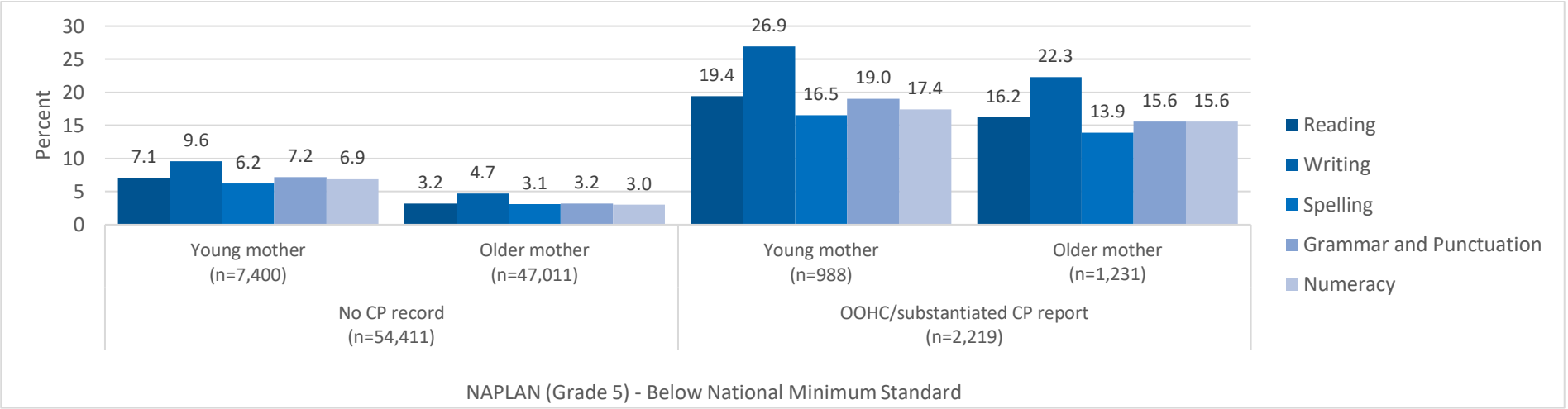


Figure B15: Distribution of children born to younger or older mothers as a percent of the group of children who are achieving belownational minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

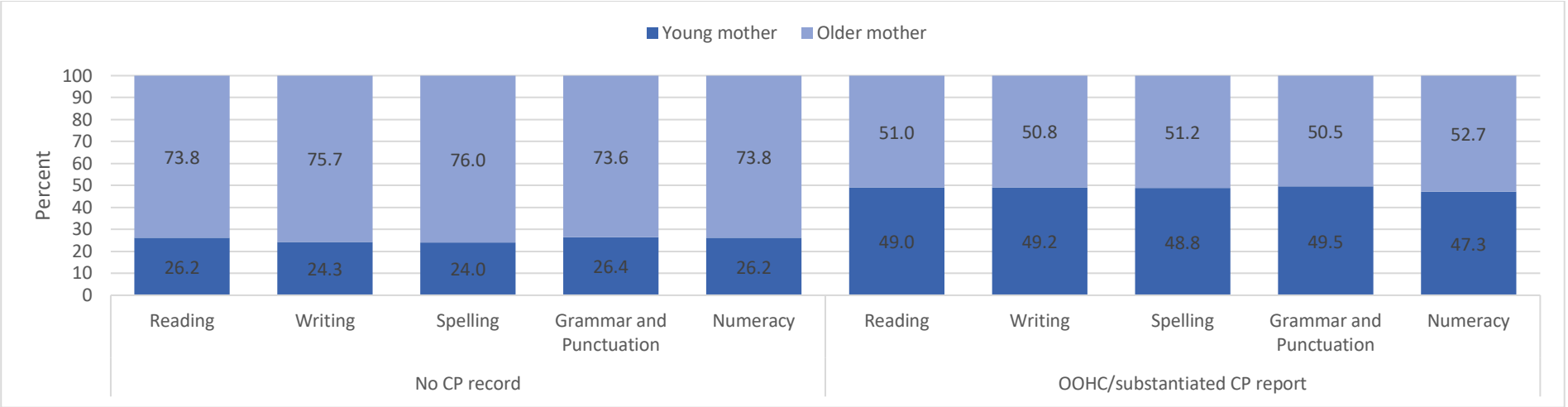


Figure B16: Percent of children within each child protection (CP) subgroup exposed to maternal smoking exposure in utero who are achieving below national minimum standard on NAPLAN domains (N=56,402).

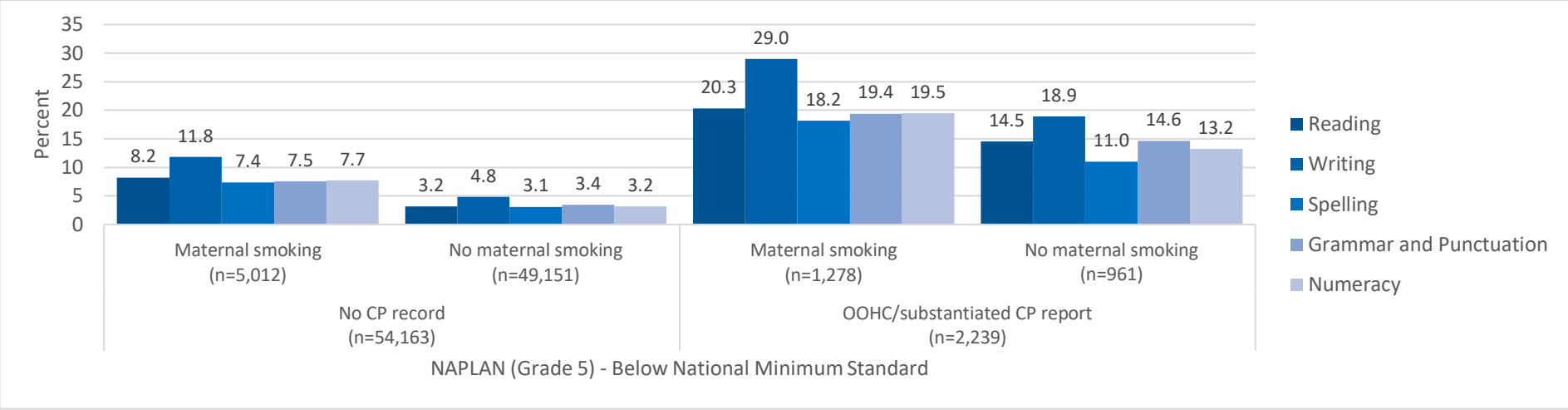


Figure B17: Distribution of children exposed to maternal smoking in utero as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

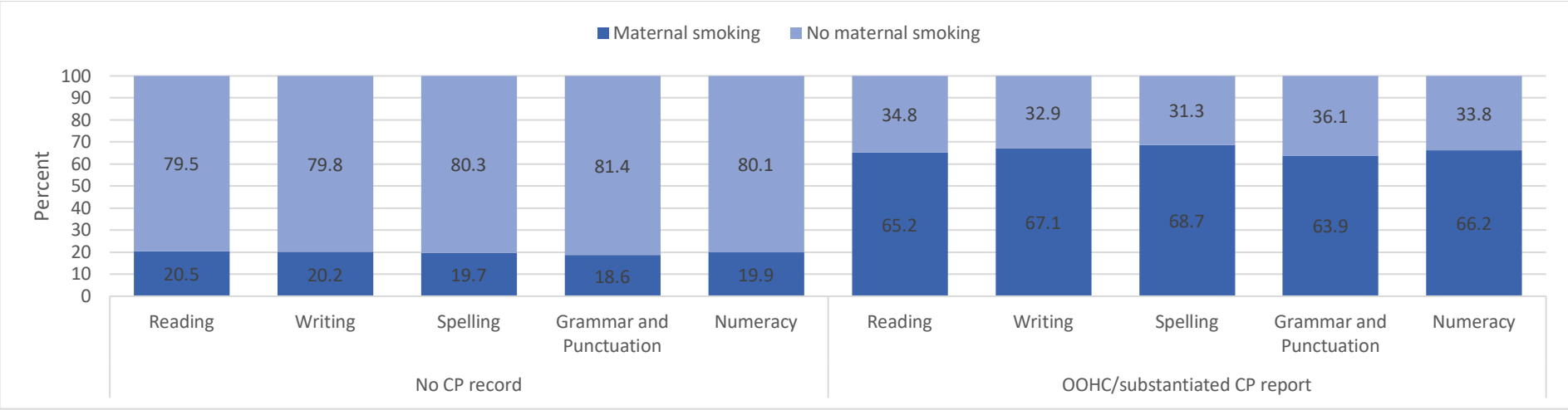


Figure B18: Percent of children within each child protection (CP) subgroup born pre-term or full-term, who are achieving below national minimum standard on NAPLAN domains (N=56,396).

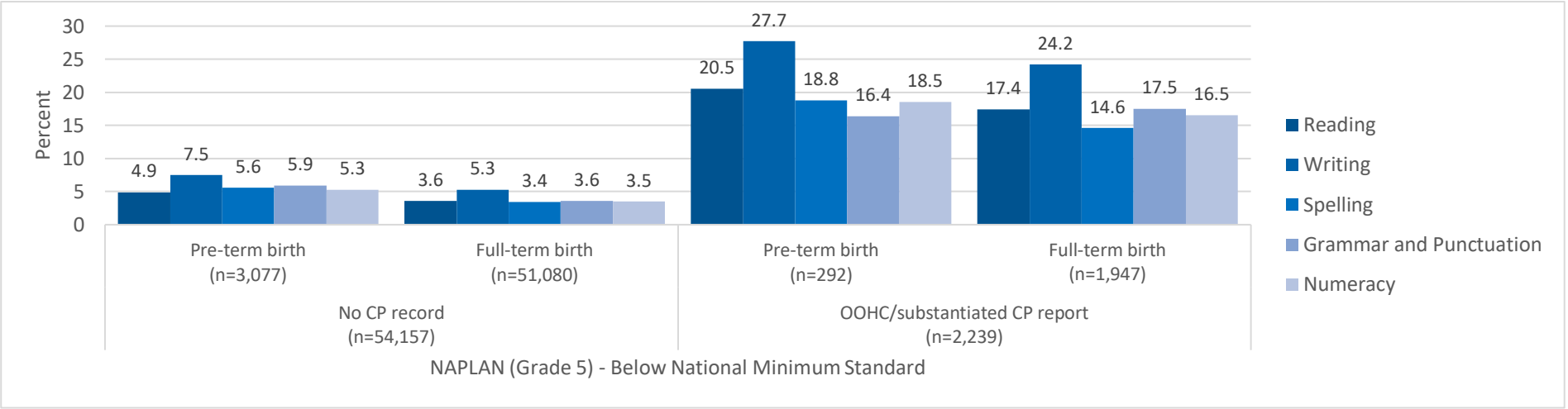


Figure B19: Distribution of children who were born pre-term or full-term as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

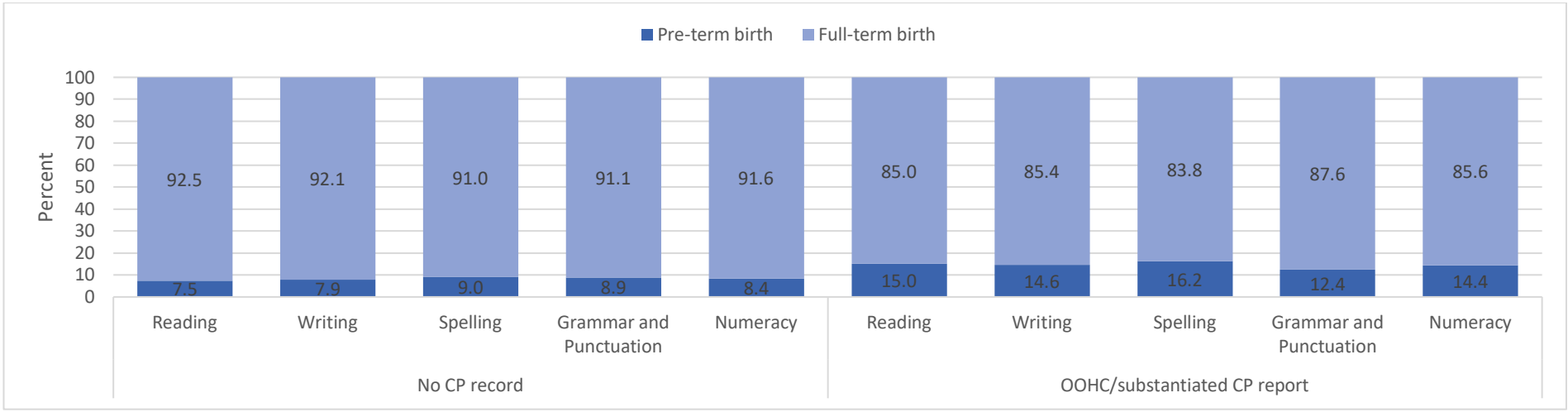


Figure B20: Percent of children within each child protection (CP) subgroup identified exposed to parental mental illness who are achieving below national minimum standard on NAPLAN domains (N=56,701).

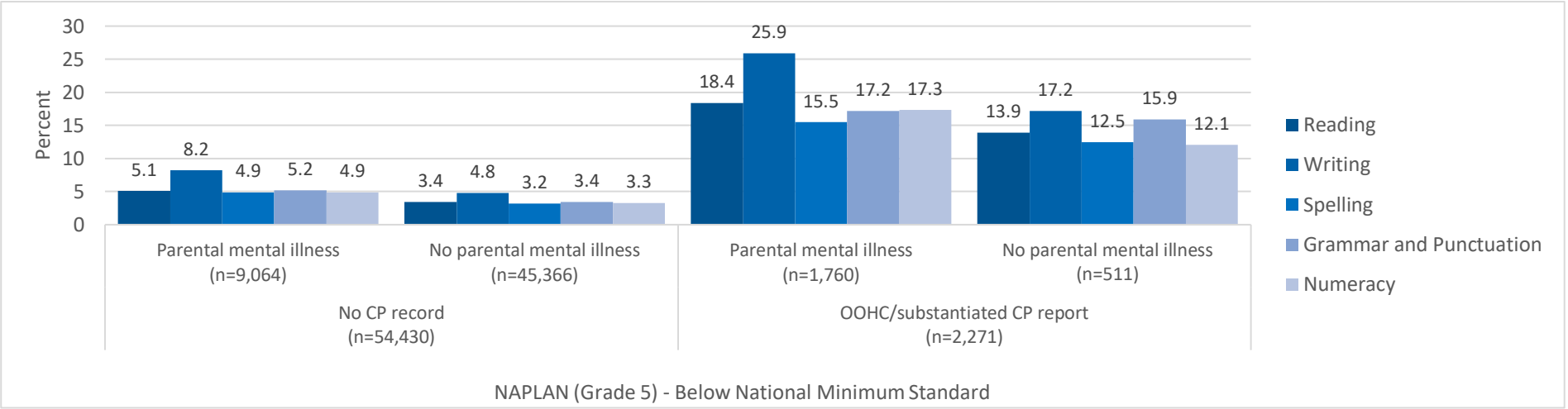


Figure B21: Distribution of children exposed to parental mental illness as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.

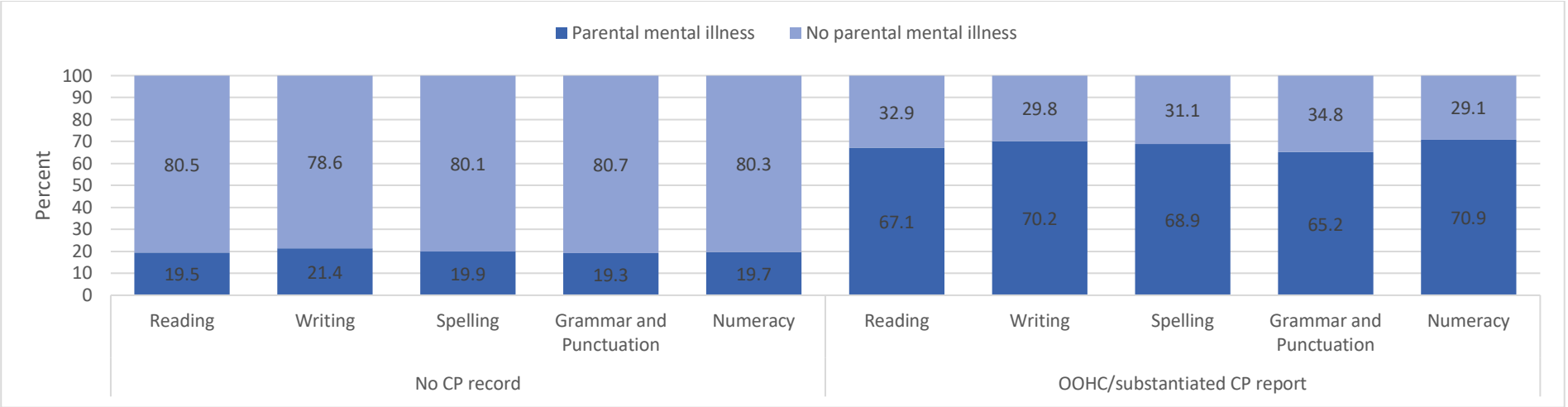


Figure B22: Percent of children within each child protection (CP) subgroup identified exposed to parental criminal history who are achieving below national minimum standard on NAPLAN domains (N=56,701).

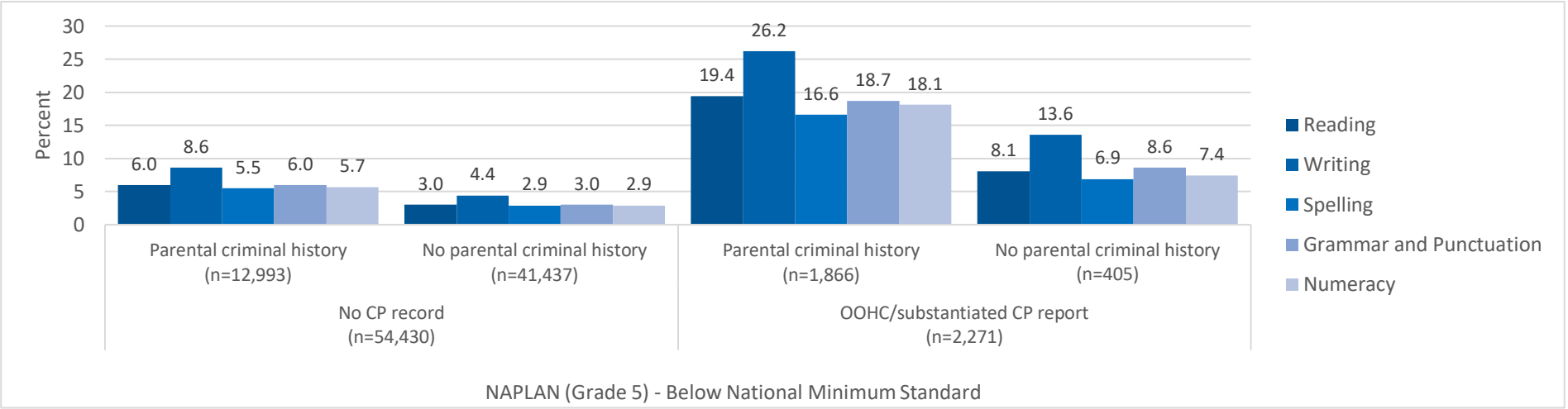
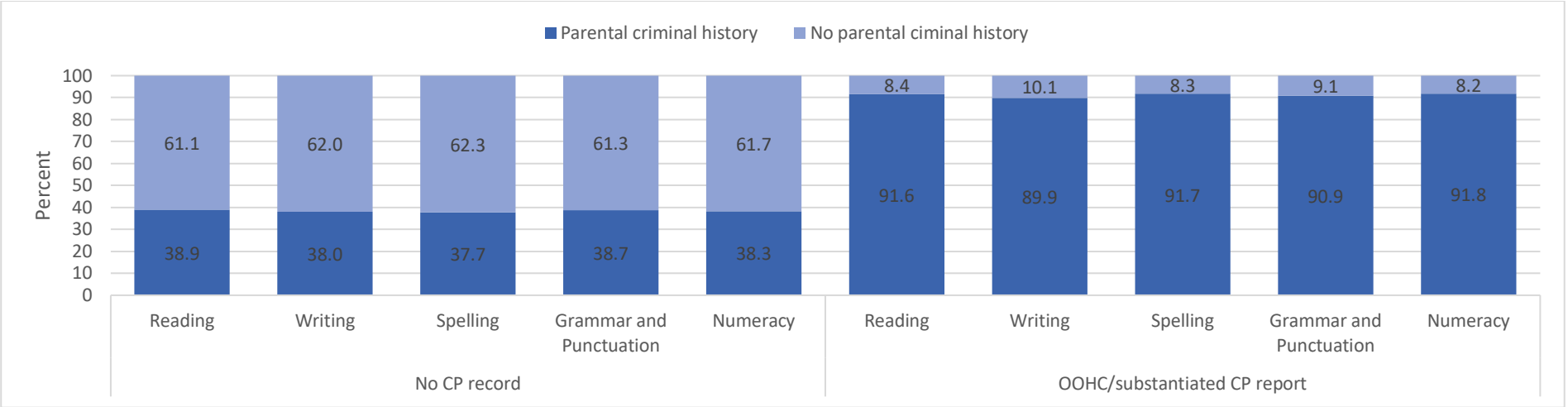


Figure B23: Distribution of children exposed to parental criminal history illness as a percent of the group of children who are achieving below national minimum standard on each NAPLAN domain, by OOHC/substantiated child protection (CP) reports.



C. Internalising and Externalising Psychopathology (Age 11 years)

Box C: Summary of findings related to SDQ internalising and externalising psychopathology as presented in this report:

- **Between 3%-23% of children known to child protection services before school entry self-reported internalising and externalising psychopathology at age 11 years (Figure C1).**
- **Between 32%-51% of children known to child protection services by age 5 years did not report any form of psychopathology at age 11 years (Figure C2).**
- **More than 20% of children exposed to multiple incidents (ROSH reports) self-reported conduct problems at age 11 years (relative to 14% of children with a single ROSH report); there were negligible differences in the rates of other types of psychopathology for children with single or multiple ROSH reports (Figure C4).**
- **Between 5%-17% of children exposed to multiple maltreatment types, and between 7%-21% of children exposed to a single type of maltreatment, reported internalising and externalising psychopathology at age 11 years (Figure C5).**
- **There were minor differences in the proportion of children who reported internalising and externalising psychopathology at age 11 years, according to the type of maltreatment exposure (Figure C6).**
- **The percentage of children who showed internalising and externalising psychopathology at age 11 years, among the group with substantiated child protection reports (i.e., substantiated ROSH or OOHC placement), was largely consistent among various subgroups exposed to other risk factors known to have small effects on childhood psychopathology (e.g., being of male sex or Indigenous status; those born pre-term or to younger mothers, or exposed to socioeconomic disadvantage, maternal smoking in utero, parental mental disorder or parental criminal offending; see Figures C7-C22).**

Strengths and Difficulties Questionnaire: Highest Level of Child Protection Status

Figure C1: Percent of children within each level of child protection response (before age 5-6 years) who are showing abnormal SDQ scale scores at age ~11 years (N=27,456).

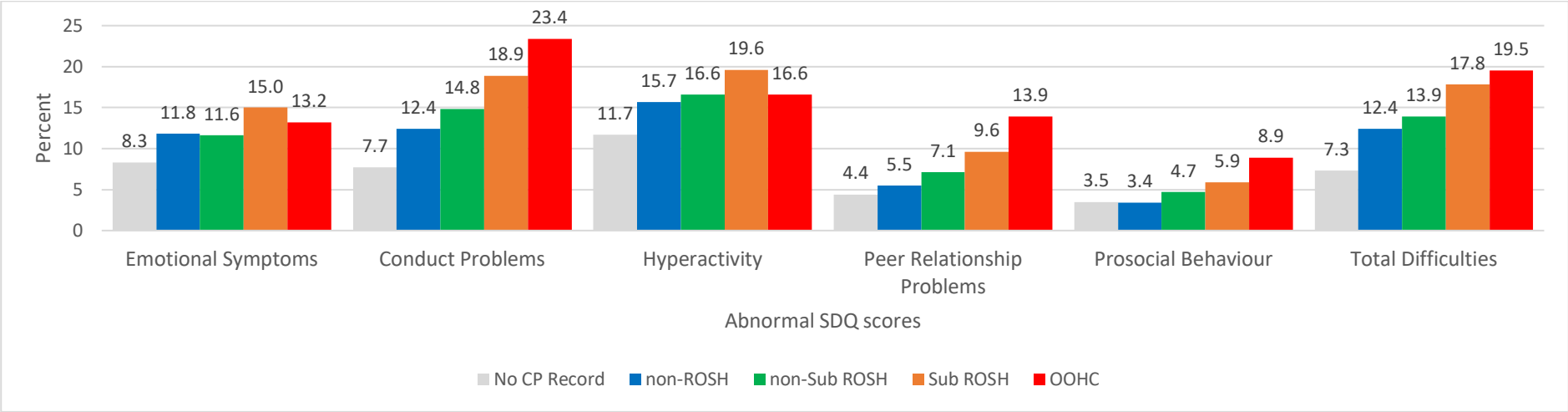
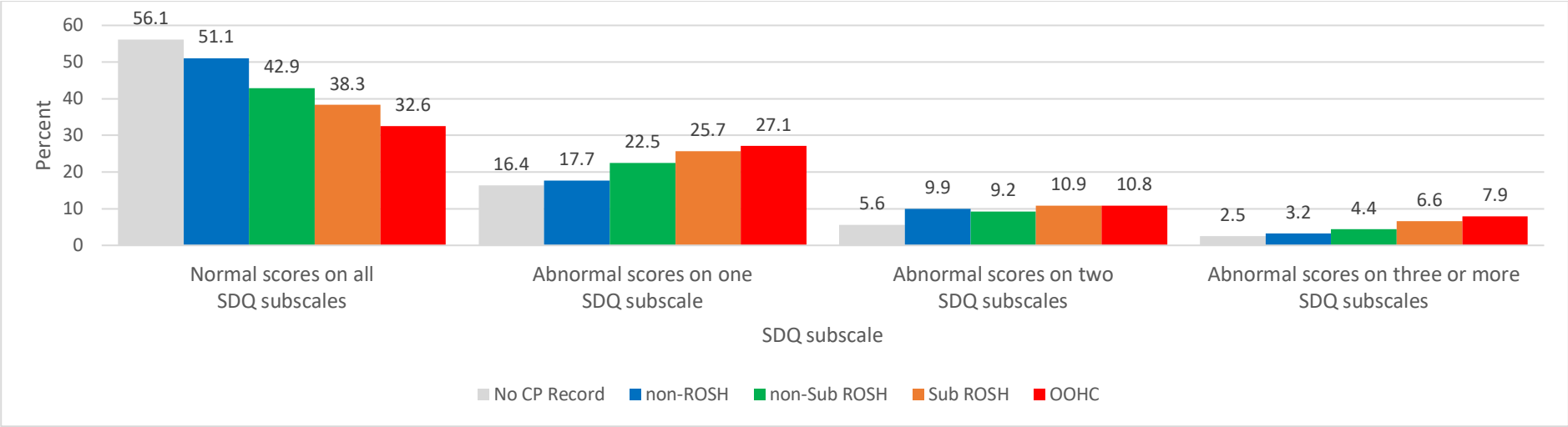


Figure C2: Percent of children within each level of child protection response (before age 5-6 years), who show abnormal range on multiple SDQ subscales, or who are in the normal range on all subscales at age ~11 years (N=27,456).



Strengths and Difficulties Questionnaire: OOHC/Substantiated Child Protection reports and Subgroup Comparisons

Figure C3: Percent of children showing abnormal SDQ scale scores at age ~11 years within each level of child protection (CP) response (before age 5-6 years) (N=23,898).

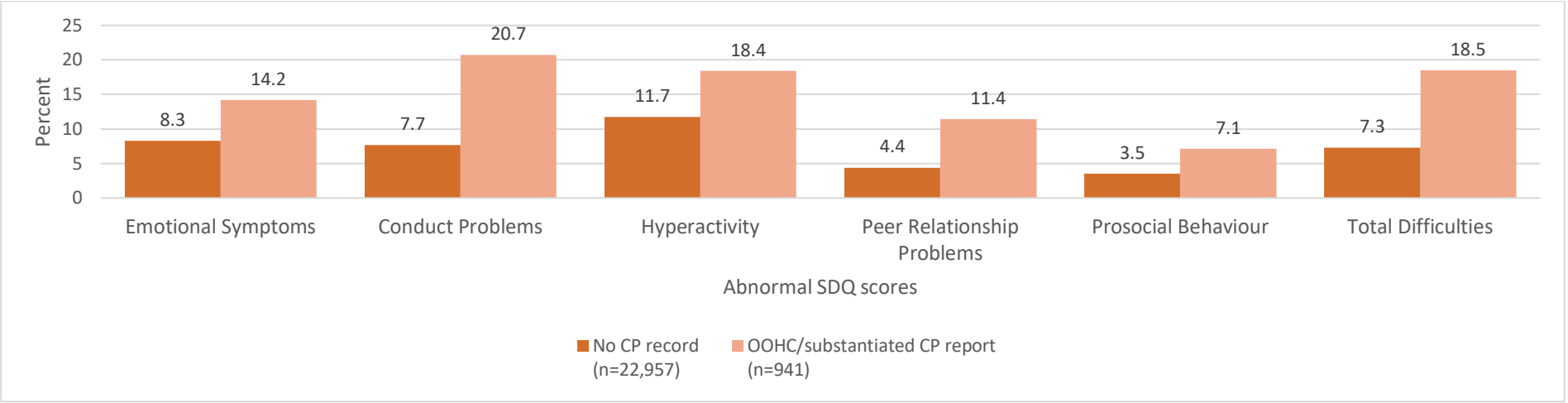


Figure C4: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) who are showing abnormal SDQ subscale scores, according to the number of ROSH reports (N=3913).

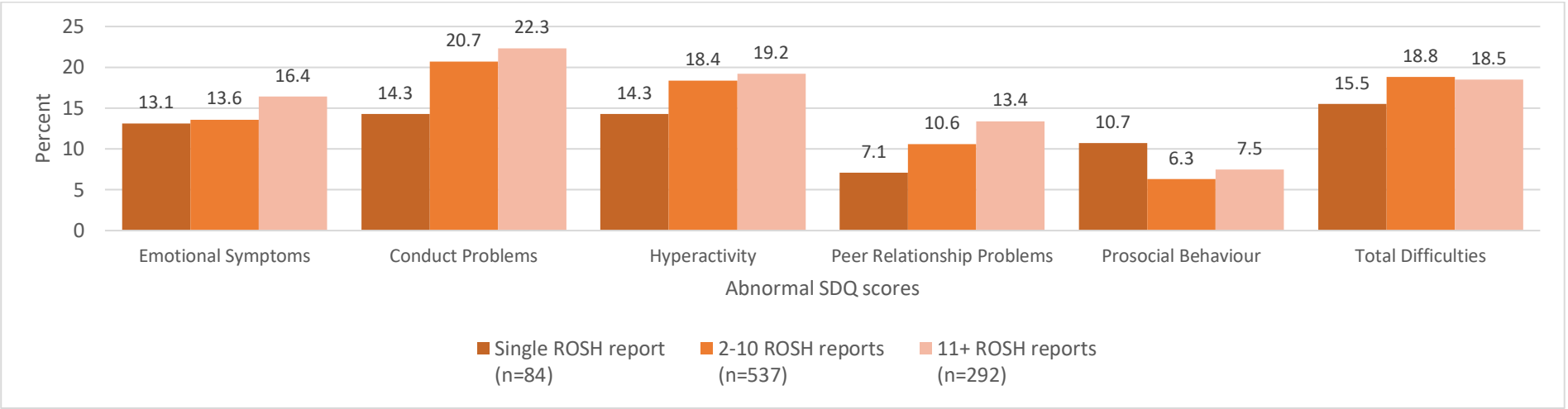


Figure C5: Percent of children with OOHC/substantiated child protection report (before age 5-6 years) who are showing abnormal SDQ subscale scores according to single and multiple maltreatment types (N=920).

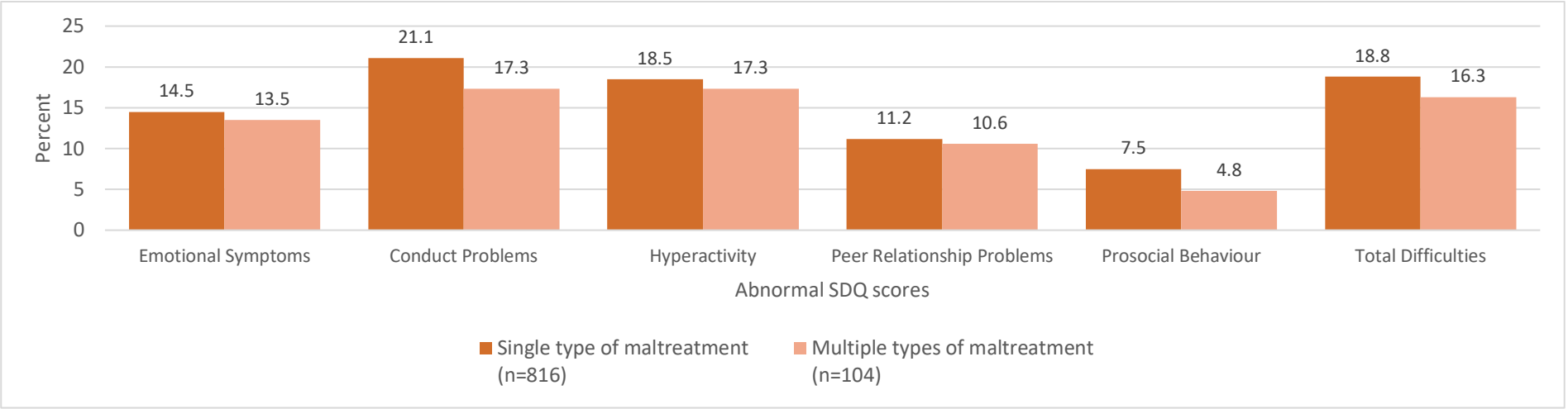


Figure C6: Percent of children with a single type of substantiated maltreatment who are showing abnormal SDQ subscale scores, by maltreatment type (N=576).

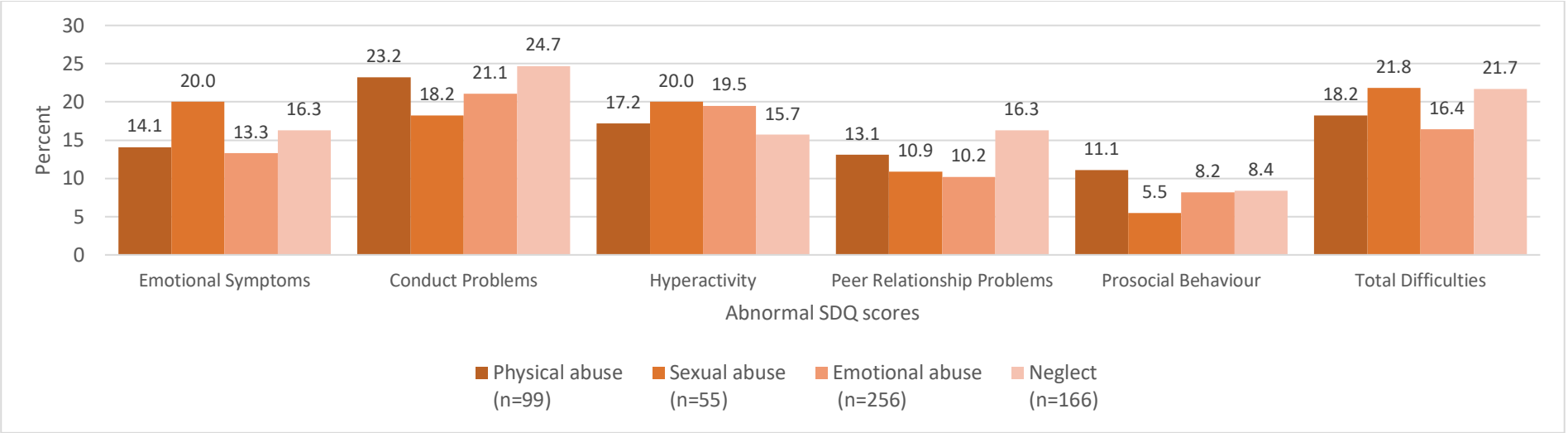


Figure C7: Percent of children within each child protection (CP) subgroup identified as boys and girls, who are showing abnormal SDQ subscale scores (N=23,898).

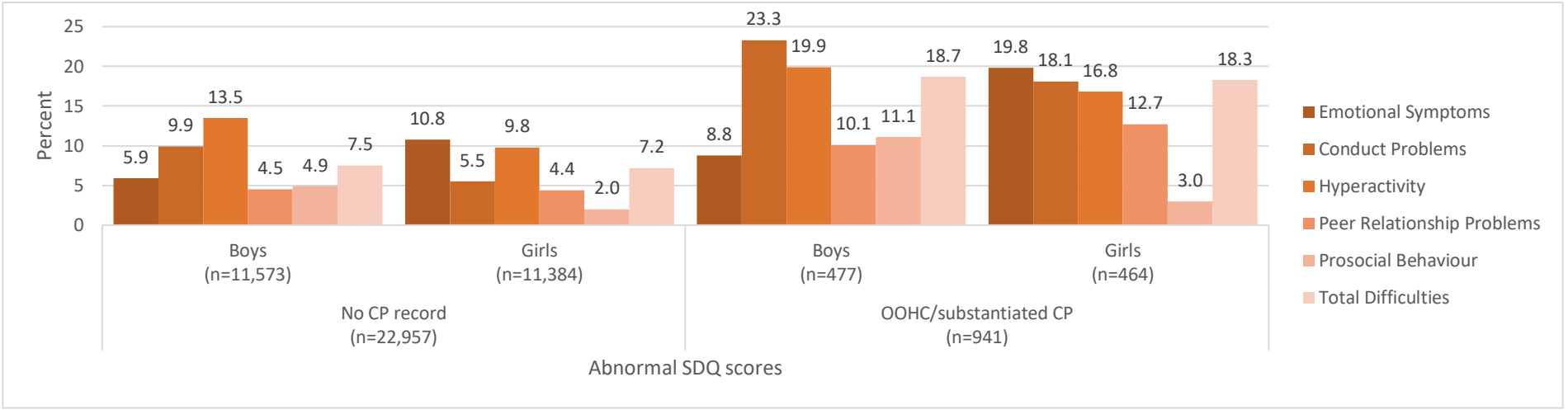


Figure C8: Distribution of children exposed identified as boys or girls as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

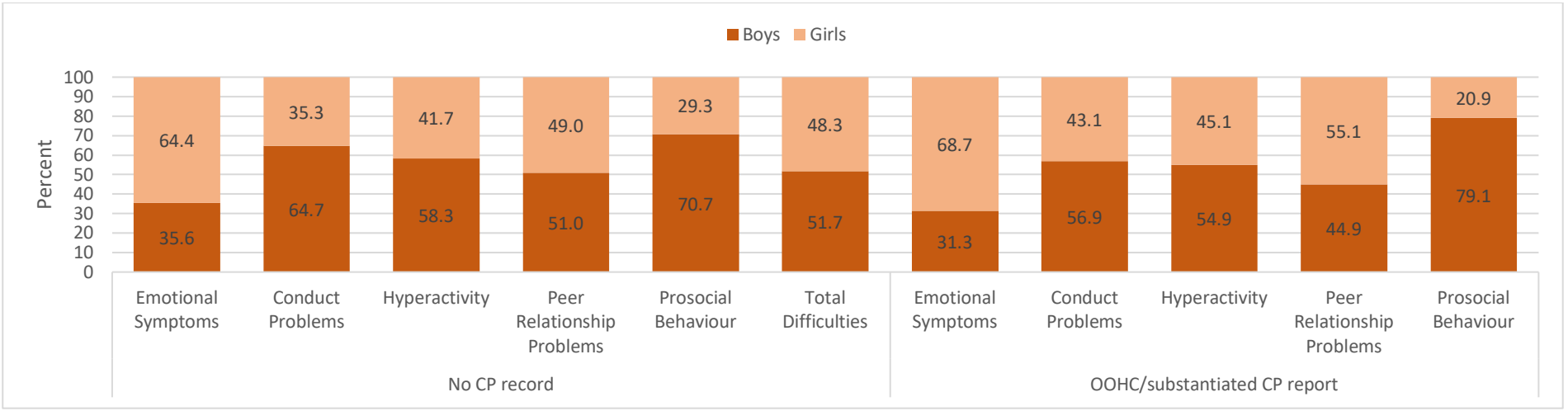


Figure C9: Percent of children within each child protection (CP) subgroup who were identified as Indigenous or non-Indigenous, scoring abnormal on SDQ subscales (N=23,898).

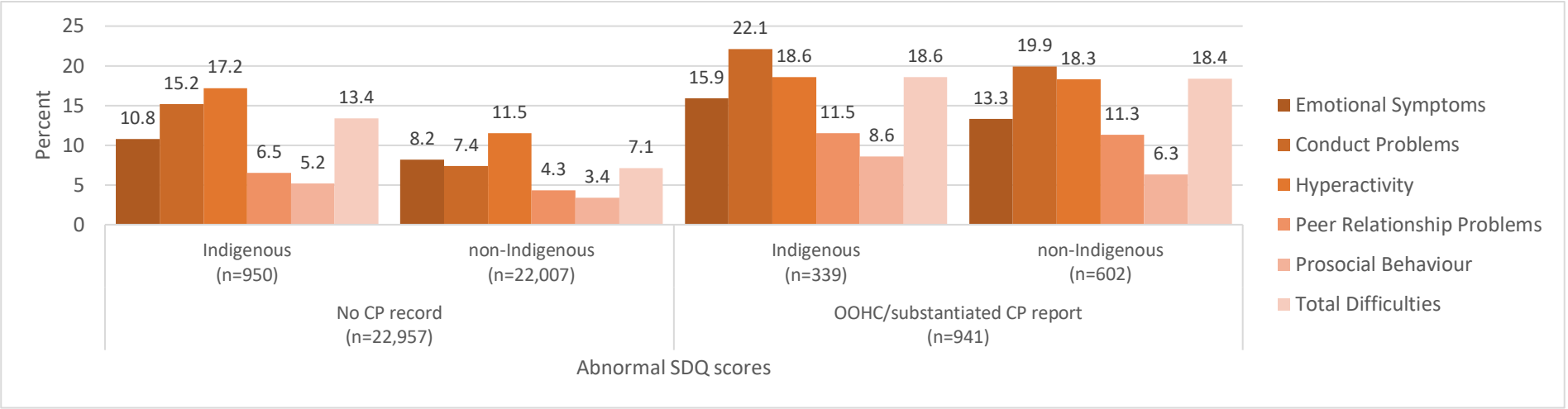


Figure C10: Distribution of children identified Indigenous or non-Indigenous as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

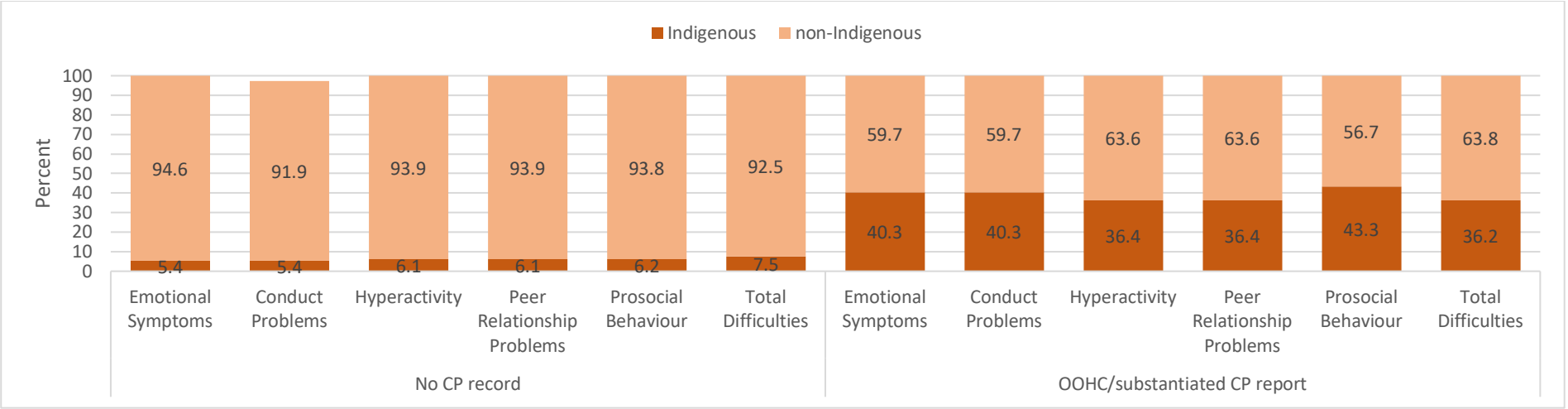


Figure C11: Percent of children within each child protection (CP) subgroup in the most disadvantaged (SEIFA Quintile 1) and least disadvantaged (SEIFA Quintiles 2-5) areas, with abnormal SDQ subscale scores (N=19,776).

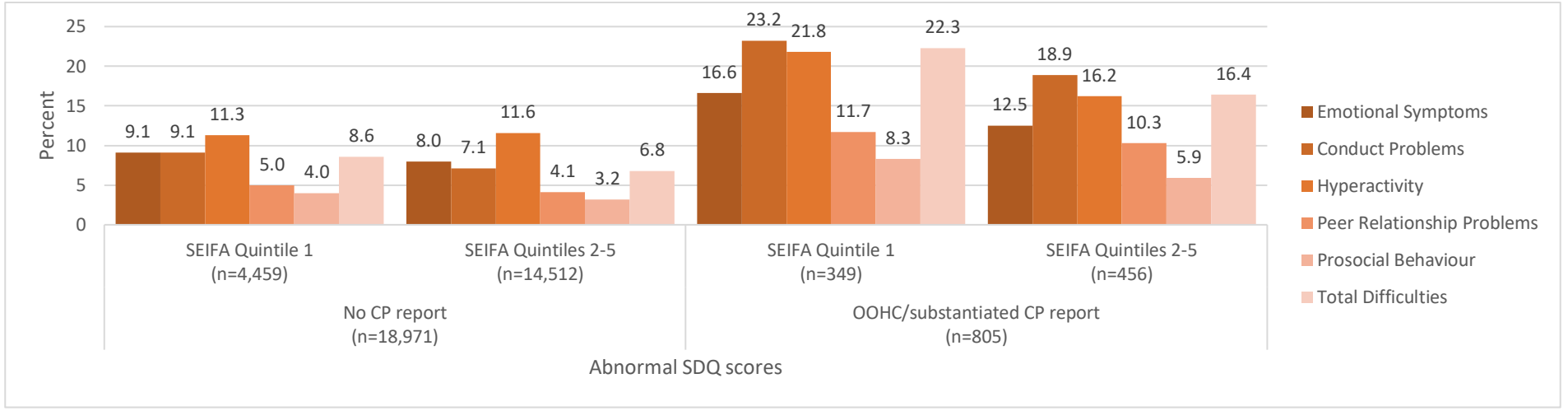


Figure C12: Distribution of socioeconomic disadvantage as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

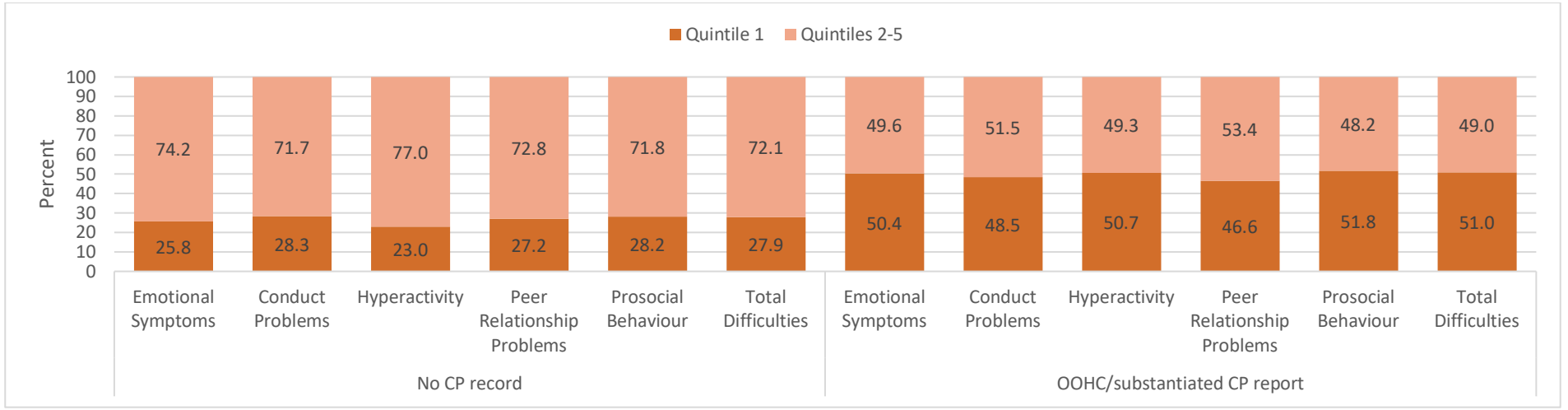


Figure C13: Percent of children within each child protection (CP) subgroup born to younger or older mothers who are showing abnormal SDQ scale scores (N=19,462).

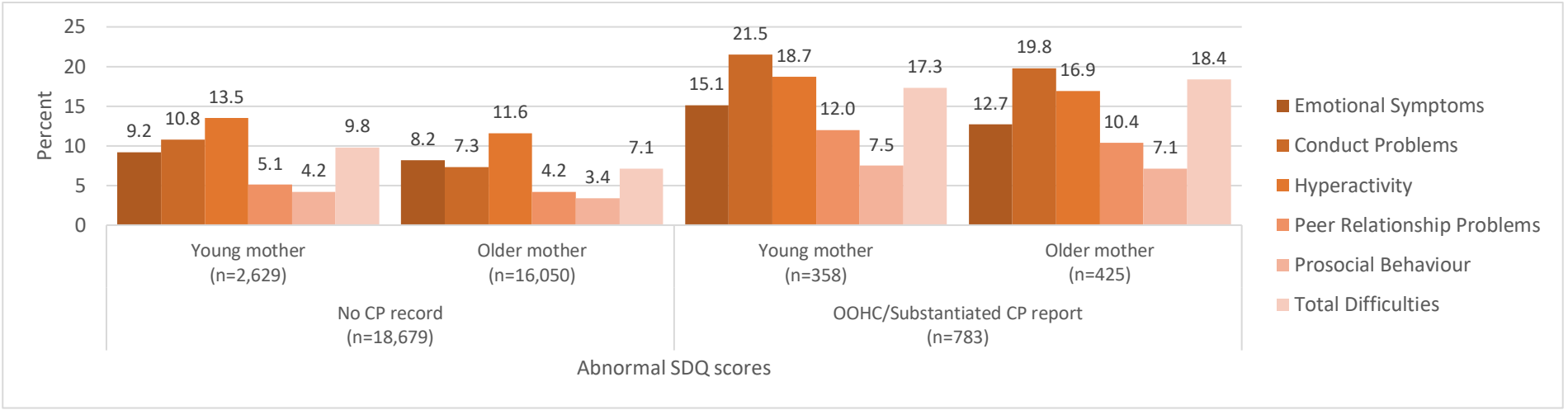


Figure C14: Distribution of children born to younger or older mothers as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

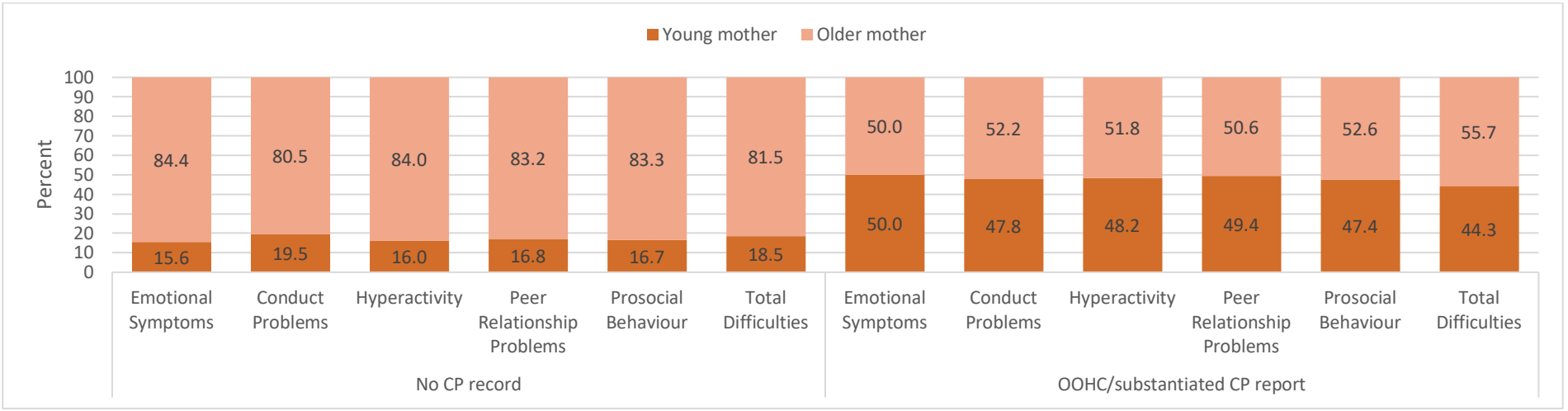


Figure C15: Percent of children within each child protection (CP) subgroup exposed to maternal smoking exposure in utero who are showing abnormal scores on SDQ subscales (N=19,392).

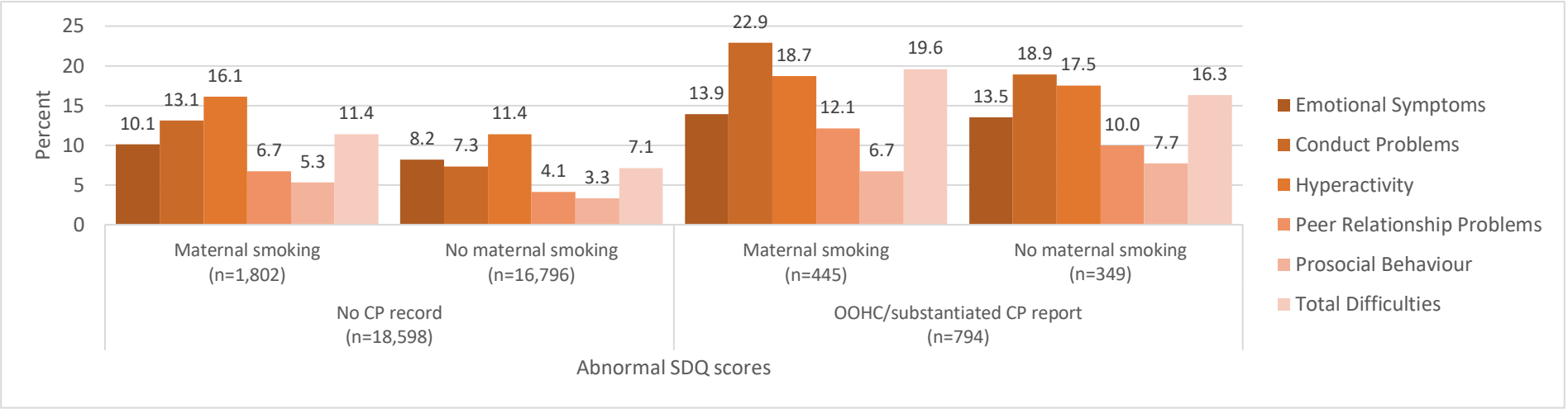


Figure C16: Distribution of children exposed to maternal smoking in utero as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

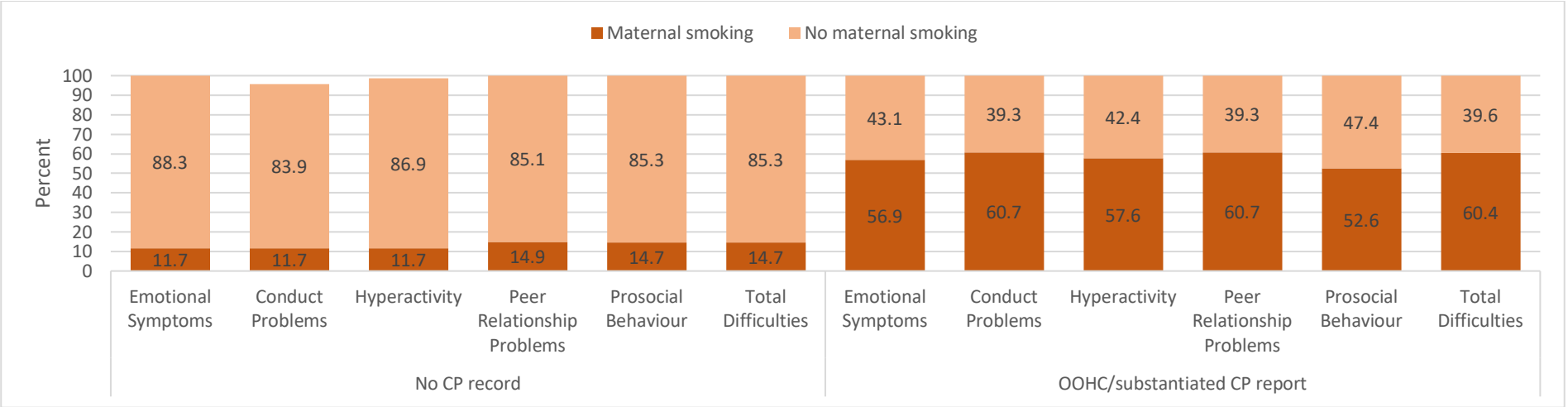


Figure C17: Percent of children within each child protection (CP) subgroup born pre-term or full-term, who are showing abnormal scores on SDQ subscales (N=19,391).

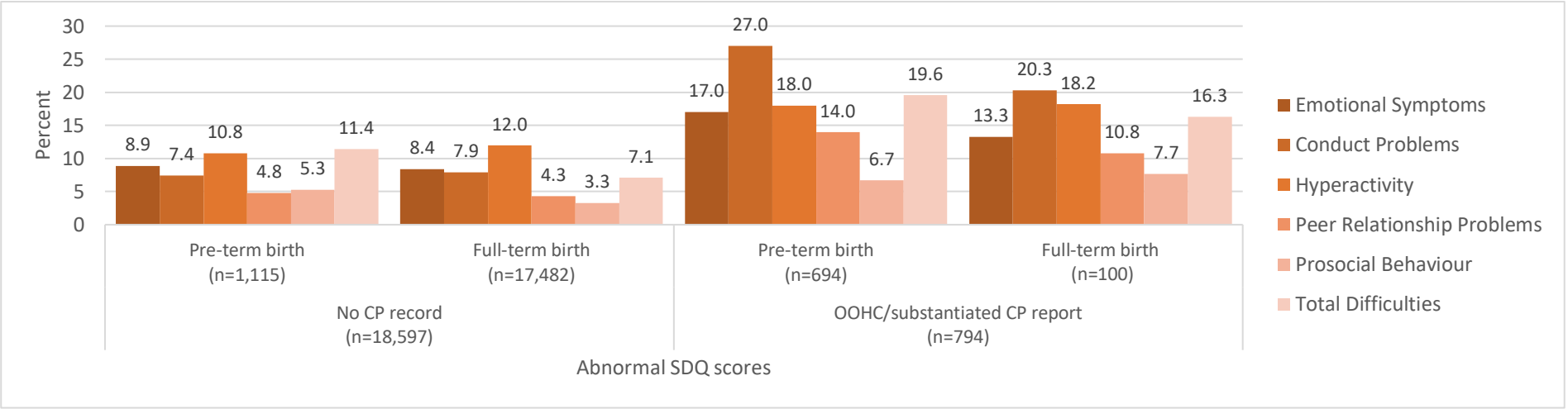


Figure C18: Distribution of children born pre-term or full-term as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

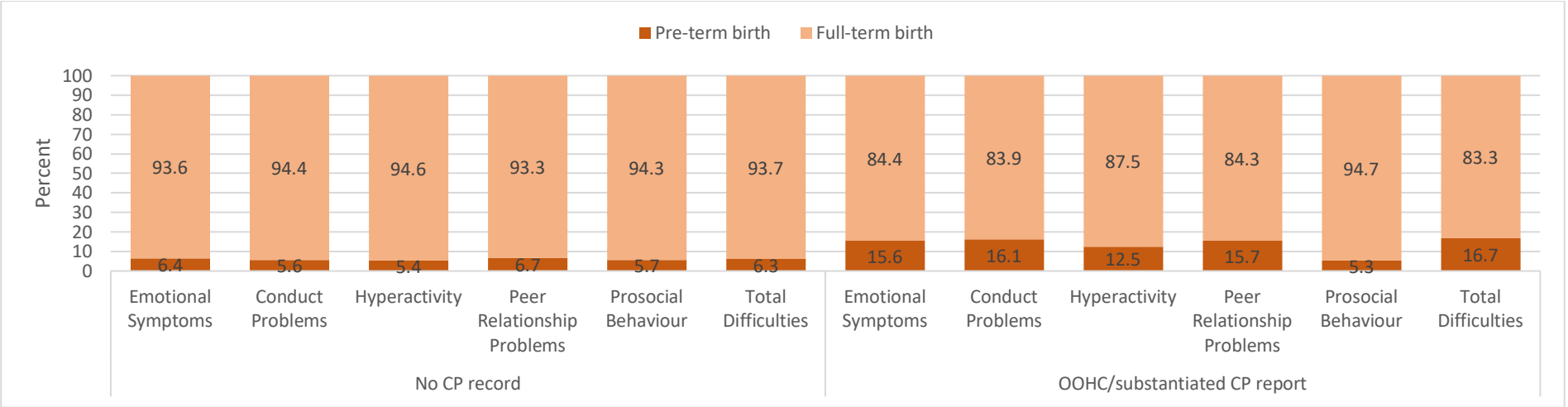


Figure C19: Percent of children within each child protection (CP) subgroup exposed to parental mental illness who are showing abnormal scores of SDQ subscales (N=19,487).

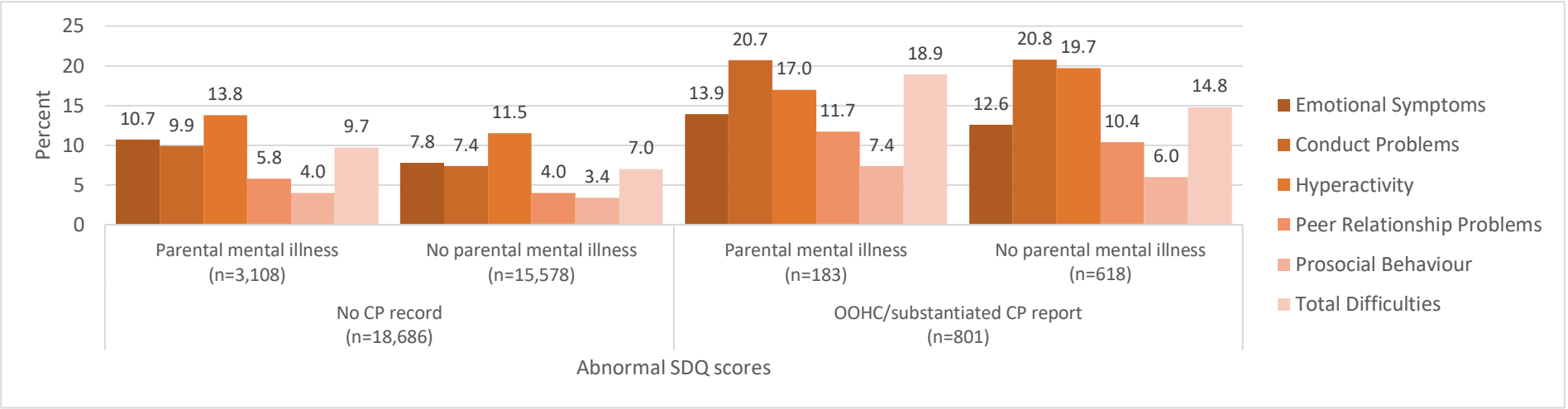


Figure C20: Distribution of children exposed to parental mental illness as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.

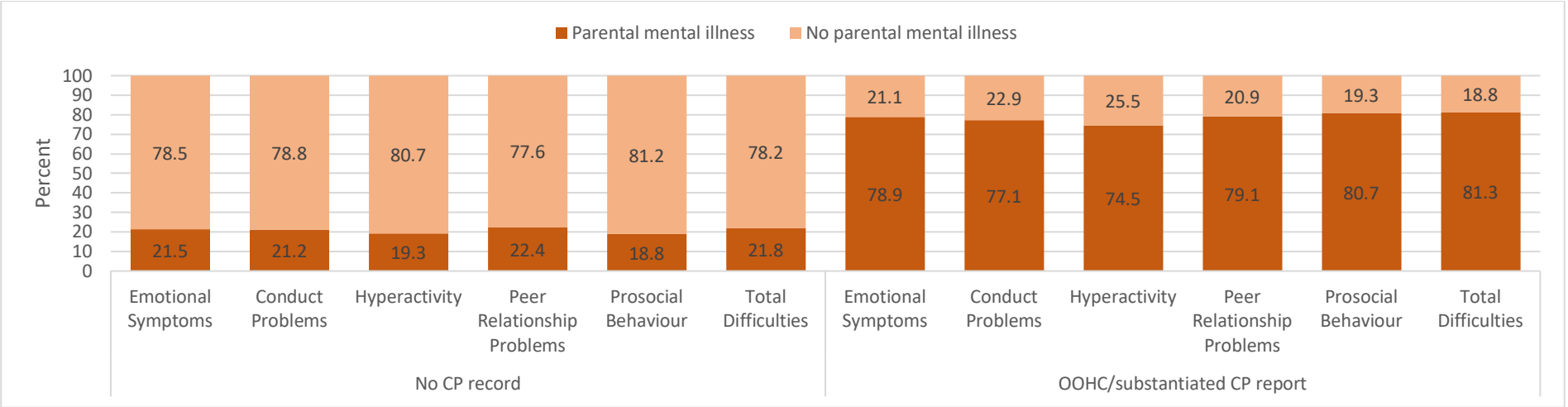


Figure C21: Percent of children within each child protection (CP) subgroup exposed to parental criminal history who are showing abnormal scores of SDQ subscales (N=19,487).

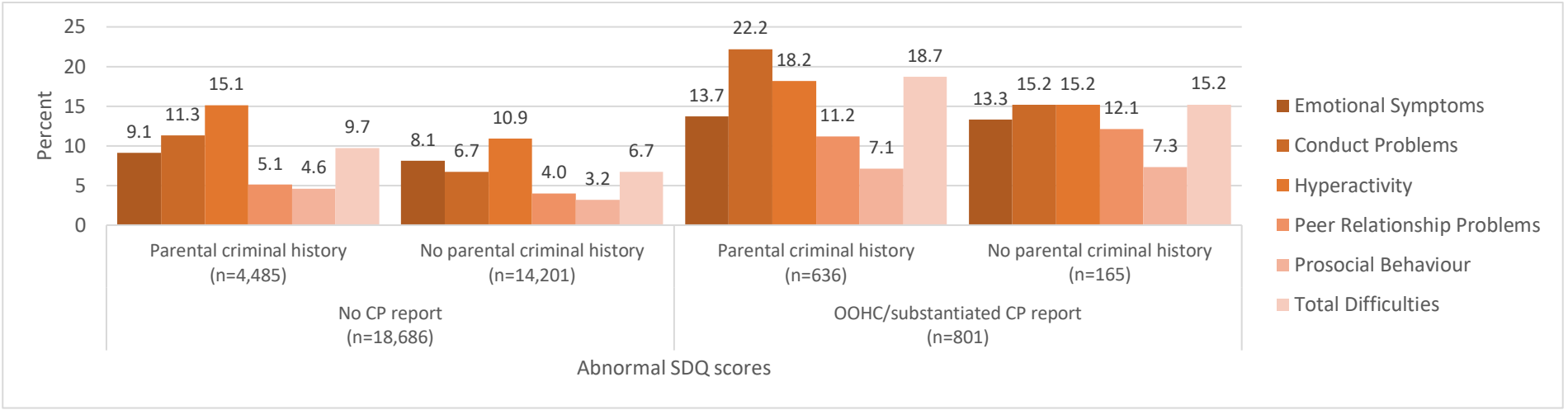
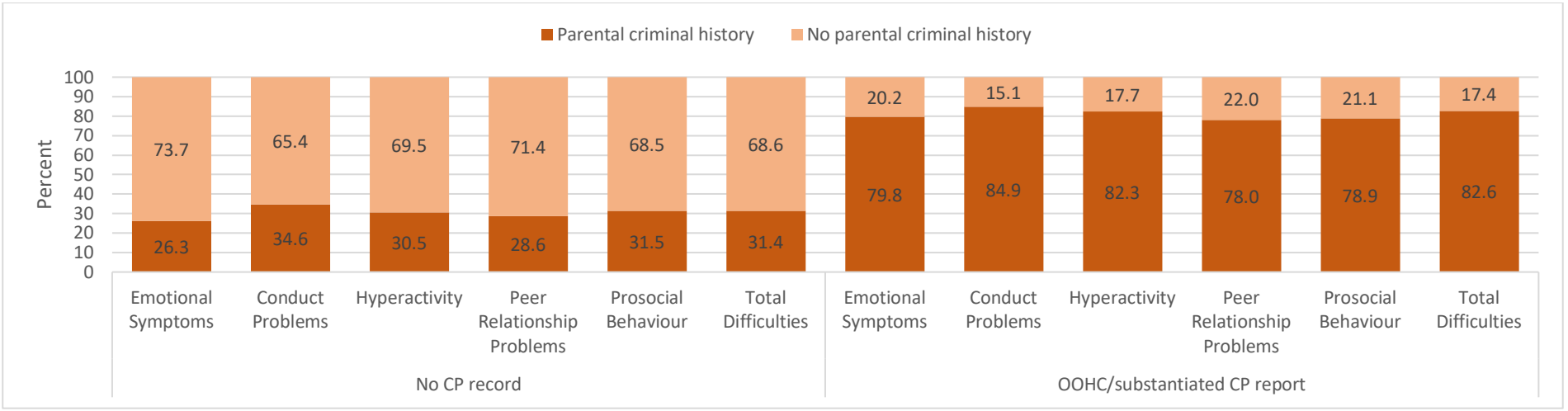


Figure C22: Distribution of children exposed to parental criminal history as a percent of the group of children scoring abnormally on each SDQ subscale, by OOHC/substantiated child protection (CP) reports.



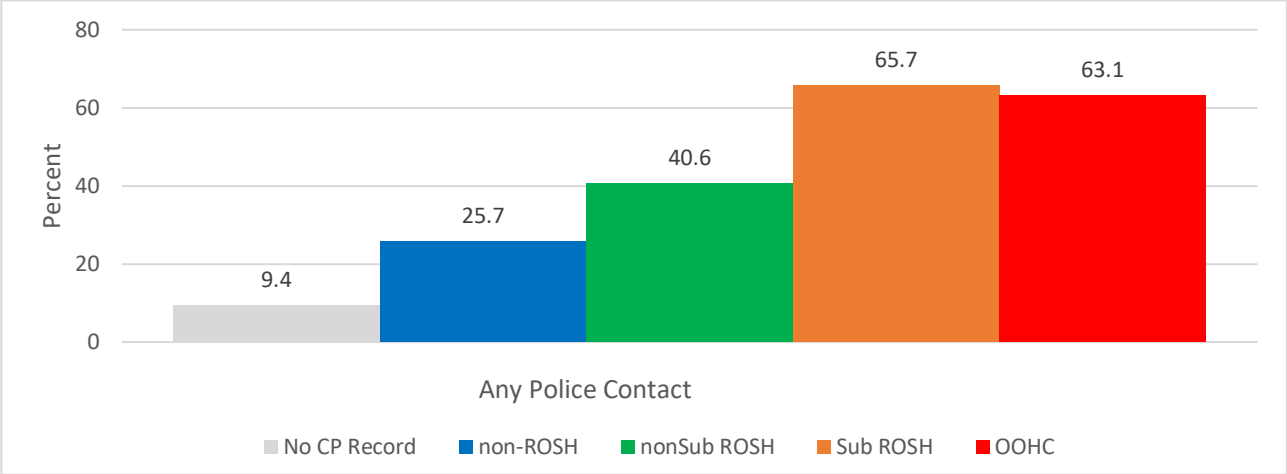
D. Police Contact as a Victim, Witness, or Person of Interest (up to Age 14 years)

Box D: Summary of findings related to contact with the police as presented in this report:

- **Between 25%-65% of children known to child protection services by age 5-6 years had been in contact with the police by age 13-14 years for any reason (Figure D1).**
- **Approximately 35% of children with an OOHC placement or substantiated ROSH report by age 5-6 years had *not* been in contact with the police by age 13-14 years (Figure D2).**
- **Approximately 78% of children with 11+ ROSH reports, and 68% of those with 2-10 ROSH reports, had been in contact with police by age 14 years, relative to 47% of children with a single ROSH report (Figure D3).**
- **The rates of contact with police were slightly higher among children exposed to multiple types of maltreatment, relative to those children exposed to a single type of maltreatment (Figure D4).**
- **Approximately 91% of children exposed to sexual abuse had 'any' contact with the police, and 88% had contact with police as a 'victim'; only 10% of those with a history of sexual abuse were in contact with police 'witness' and 16% were in contact as a 'person of interest'. This pattern of findings likely reflects mandatory reporting requirements between both agencies (Figure D5).**
- **The percentage of children with OOHC/substantiated ROSH reports who had been in contact with police by age 13-14 years was largely consistent among various subgroups exposed to other risk factors known to have small effects on risk for antisocial behaviour (e.g., being of male sex or Indigenous; born pre-term or to younger mothers, or exposed to socioeconomic disadvantage, maternal smoking in utero; see Figures D6-D17).**
- **A high proportion of children with substantiated reports had a parent with a mental disorder or a parent with a history of criminal offending; these children had higher rates of police contact than children with no OOHC/substantiated reports or parental history of mental illness or criminal offending (See Figures D18-D21).**

Police Contacts: Highest Level of Child Protection Status

Figure D1: Percent of children within each level of child protection response before 6 years of age, who have had police contact (for any reason) (N=91,631).



Police Contacts: OOHC/Substantiated Child Protection reports and Subgroup Comparisons

Figure D2: Percent of children within each level of child protection response (before age 5-6 years), who had police contact as a victim (n=11,204), witness (n=2,630) or a person of interest (N=3,843).

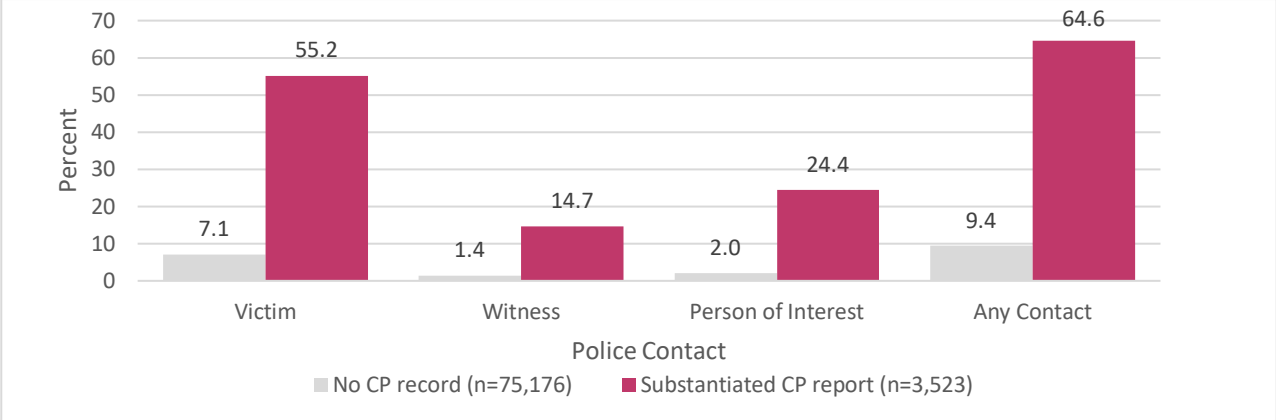


Figure D3: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) who had police contact, according to the number of ROSH reports (N=3,420).

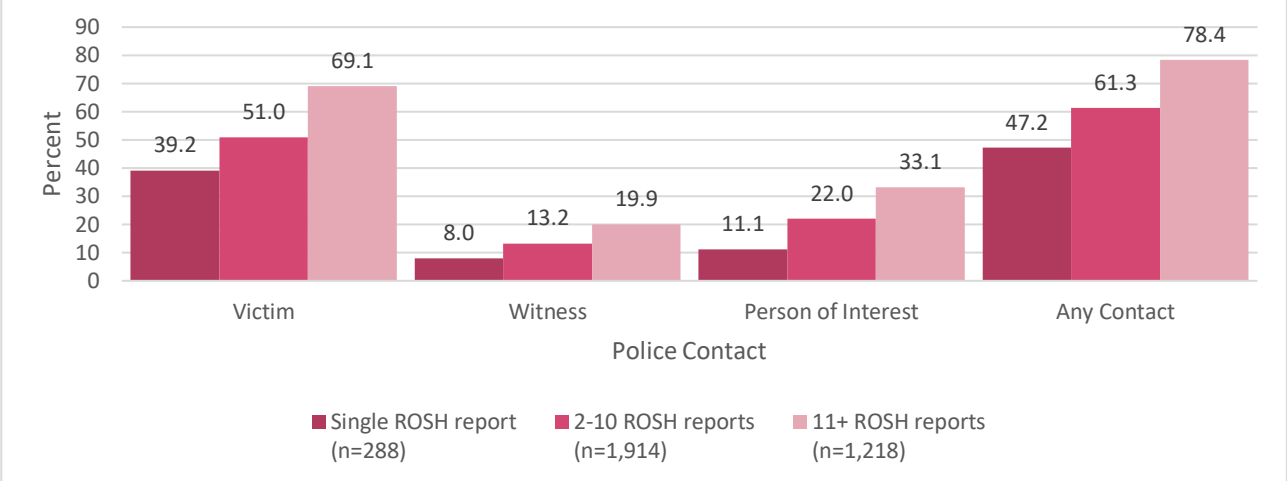


Figure D4: Percent of children with OOHC/substantiated child protection reports (before age 5-6 years) who had police contact, according to single and multiple maltreatment types (N=3,441).

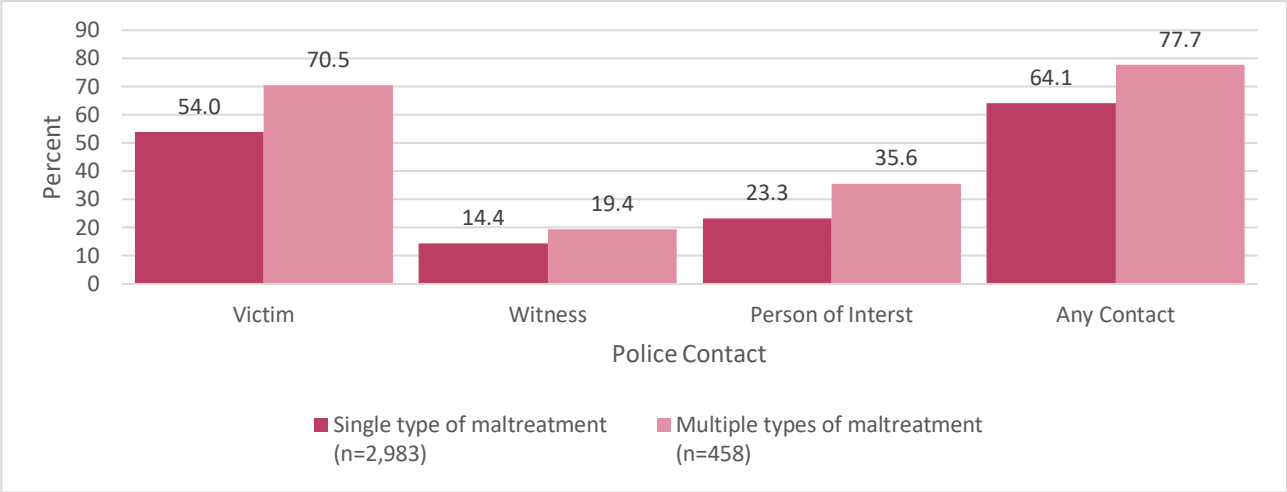


Figure D5: Percent of children with a single type of substantiated maltreatment who had police contact, by maltreatment type (N=2,133).

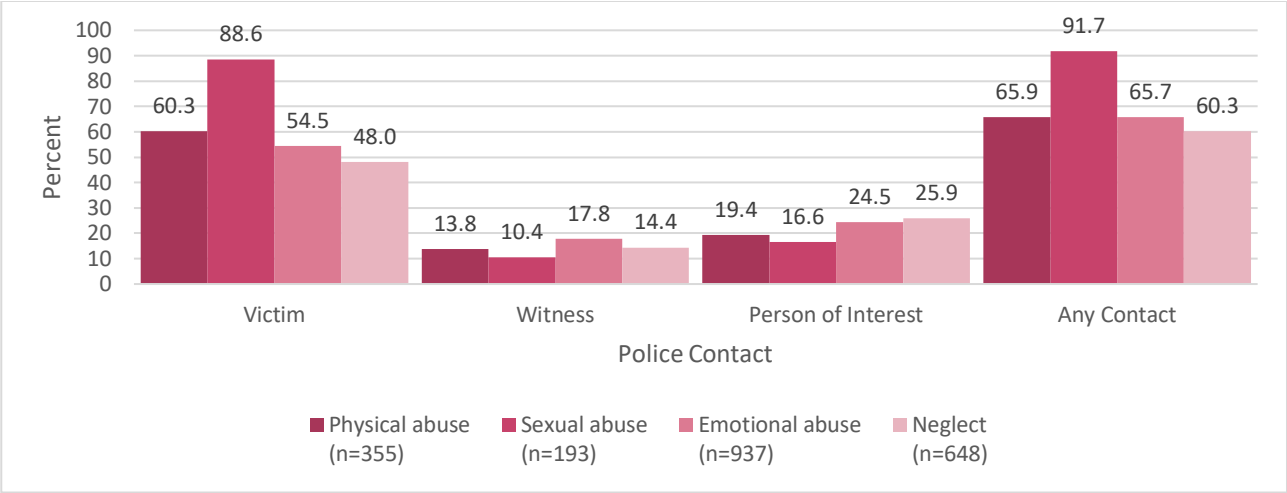


Figure D6: Percent of children within each child protection (CP) subgroup identified as boys and girls, who had contact with police (N=78,699).

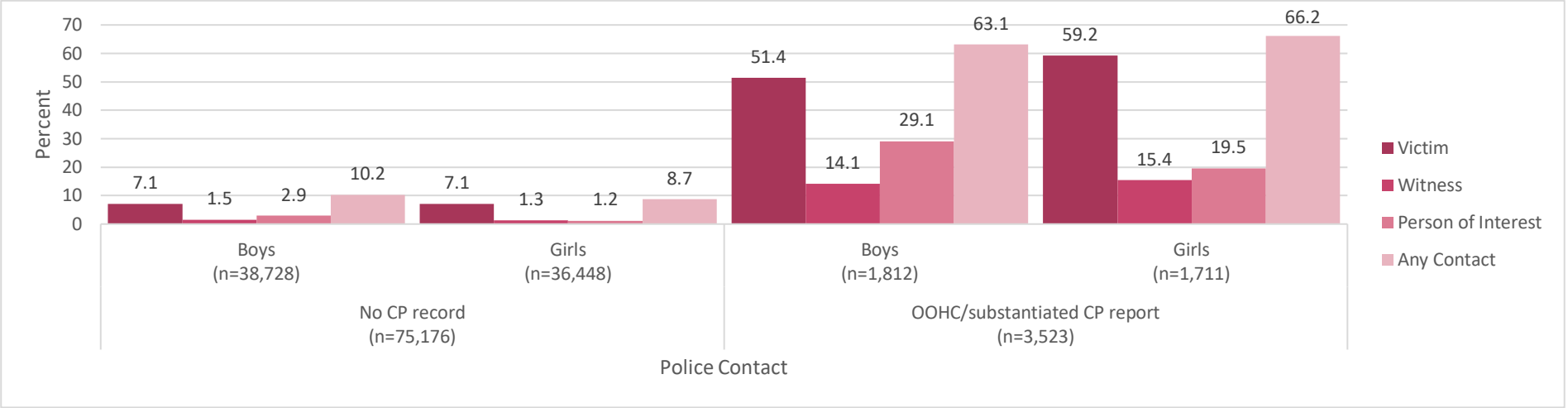


Figure D7: Distribution of boys and girls as a percent of the group with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

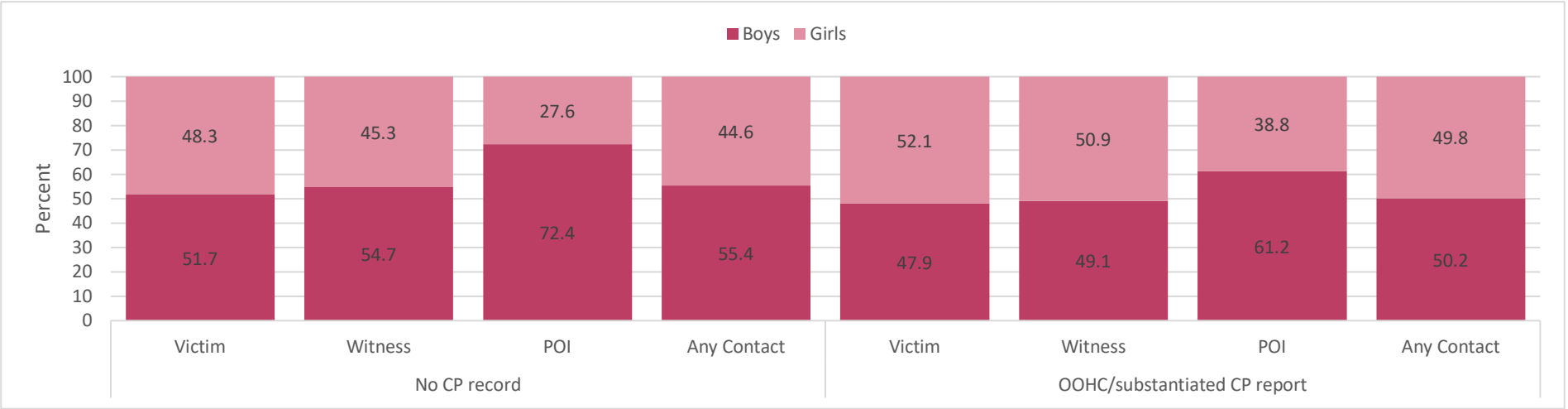


Figure D8: Percent of children within each child protection (CP) subgroup identified as Indigenous or non-Indigenous who had contact with police (N=78,699).

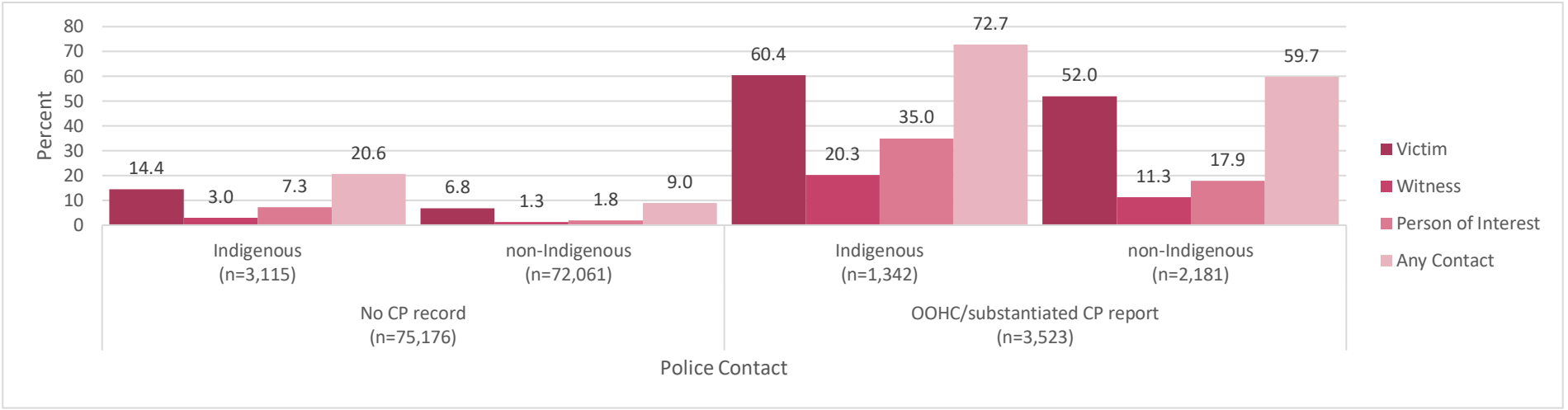


Figure D9: Distribution of Indigenous and non-Indigenous children as a percent of the group with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

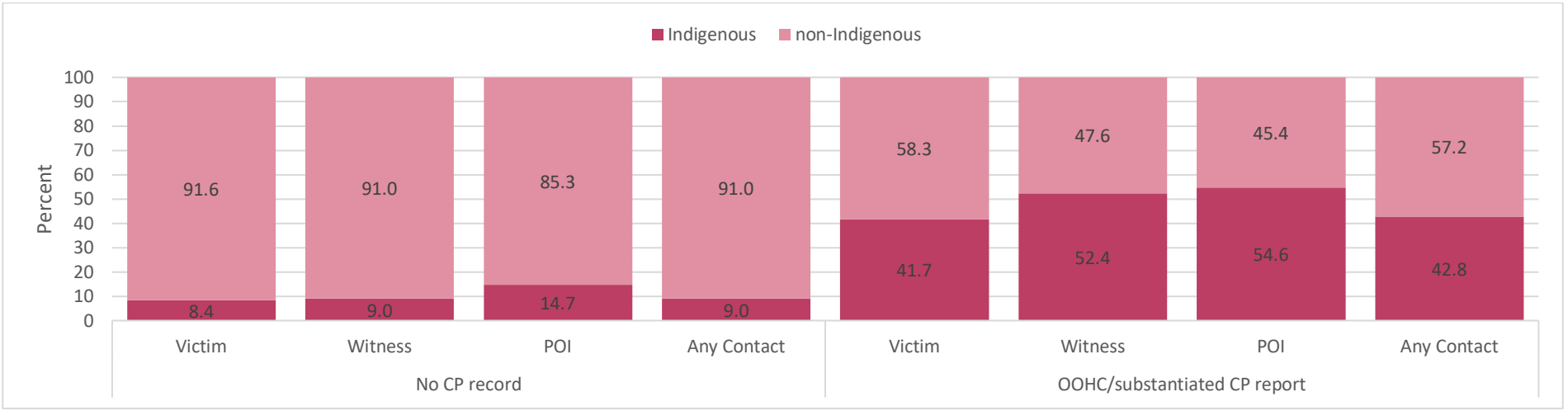


Figure D10: Percent of children within each child protection (CP) subgroup identified in the most disadvantaged (SEIFA Quintile 1) and least disadvantaged (SEIFA Quintiles 2-5) areas, who had contact with police (N=75,765).

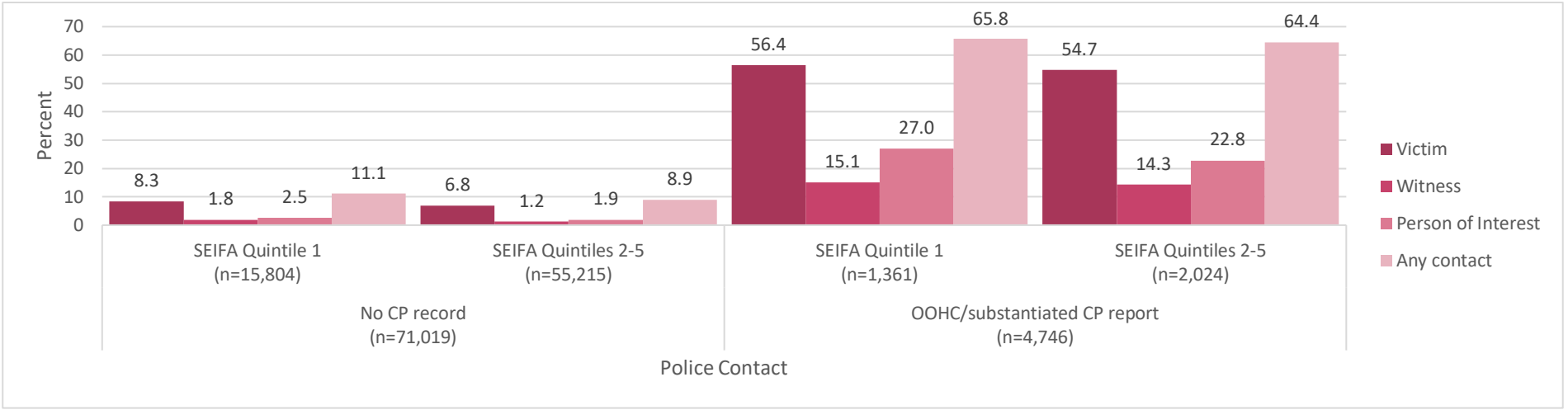


Figure D11: Distribution of socioeconomic disadvantage as a percent of the group of children with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

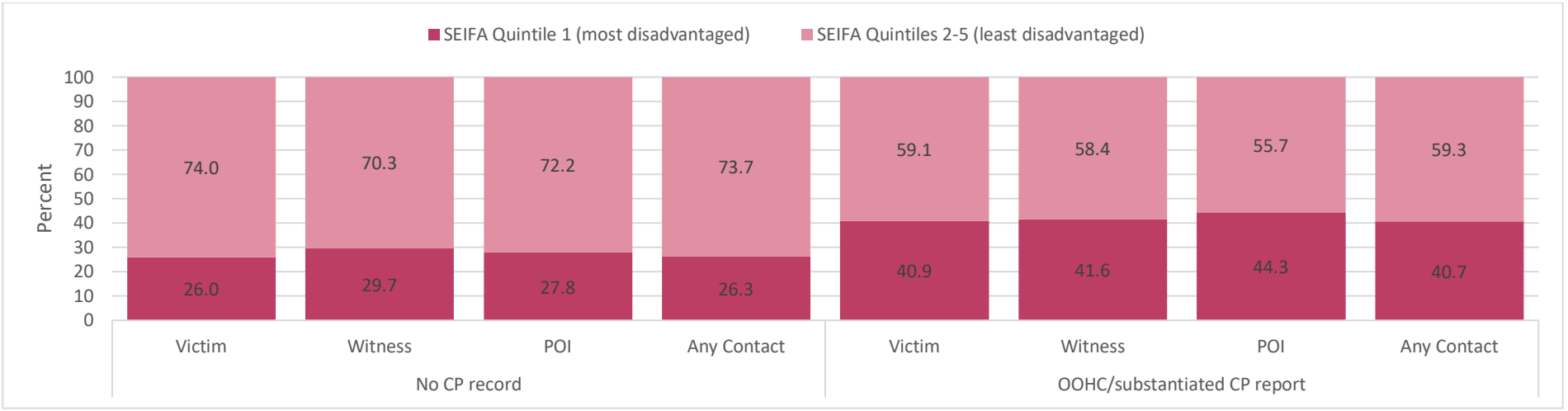


Figure D12: Percent of children within each child protection (CP) subgroup born to younger or older mothers, who had contact with police (N=64,011).

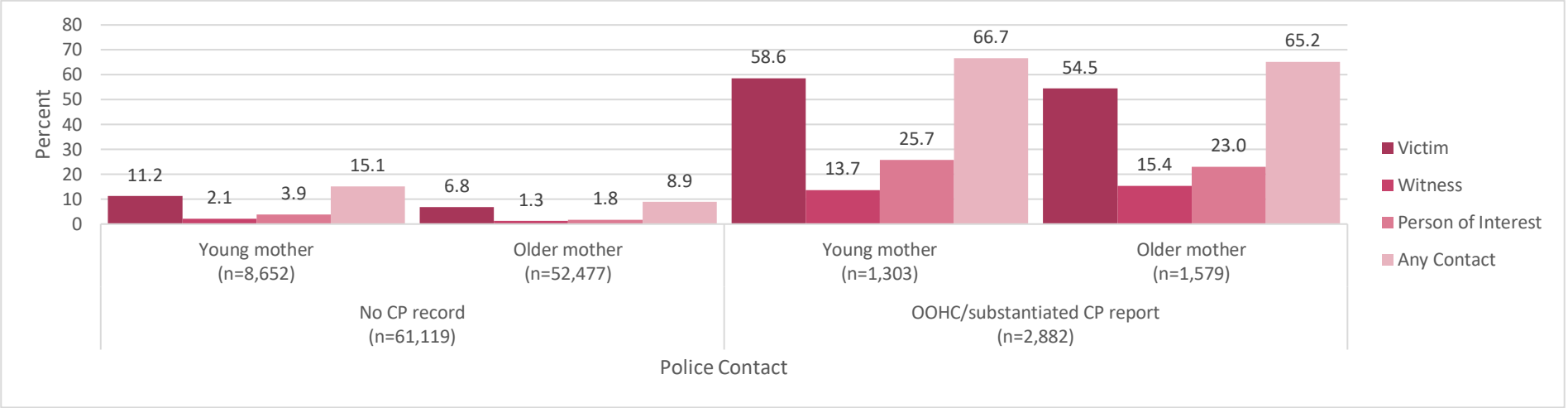


Figure D13: Distribution of children born to younger mothers as a percent of the group of children with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

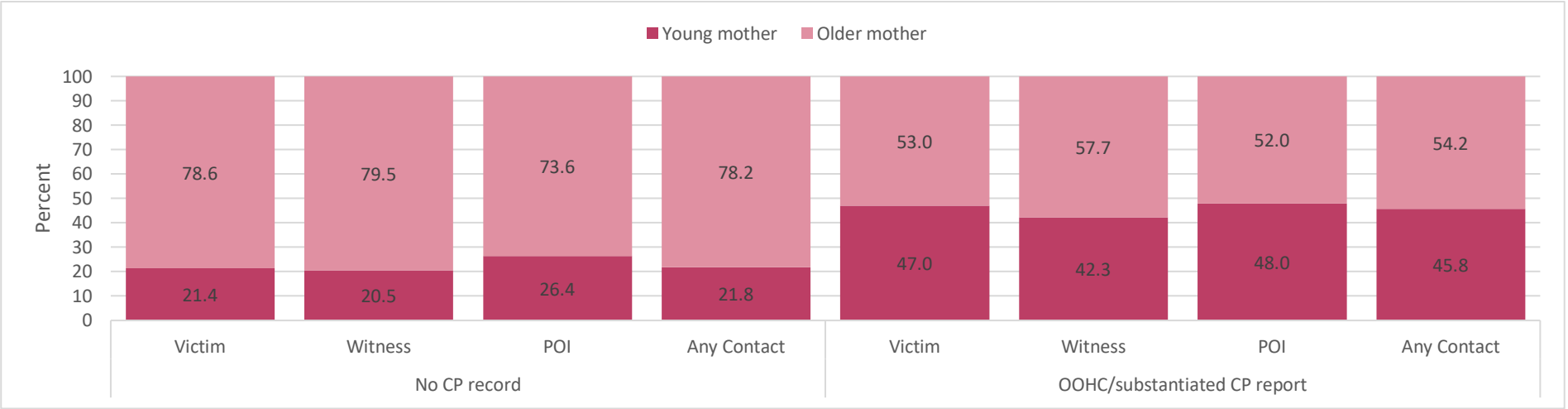


Figure D14: Percent of children within each child protection (CP) subgroup exposed to maternal smoking in utero who had contact with police (N=63,780).

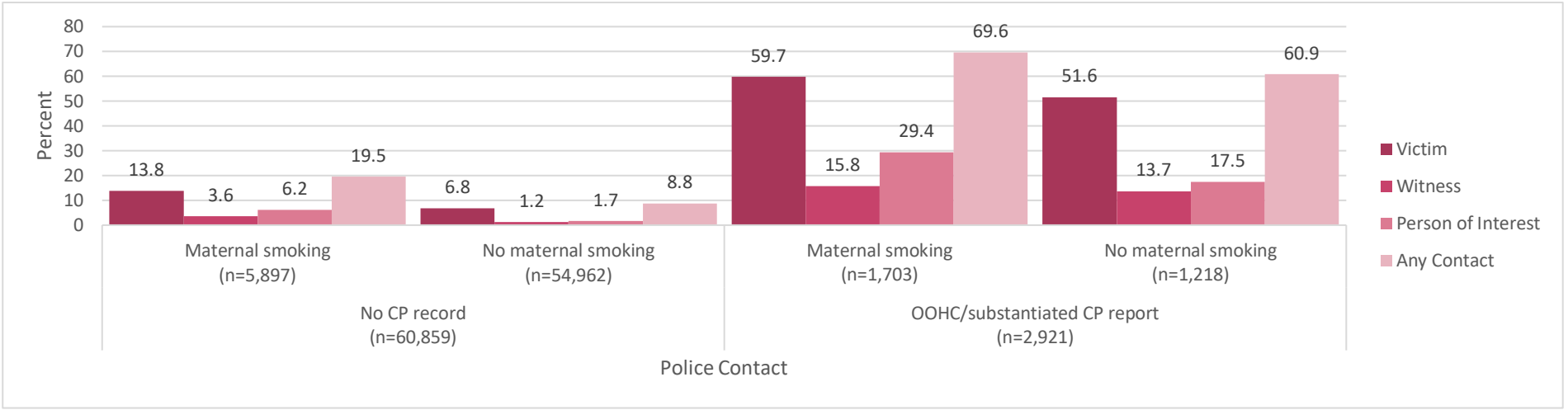


Figure D15: Distribution of children exposed to maternal smoking in utero as a percent of the group of children with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

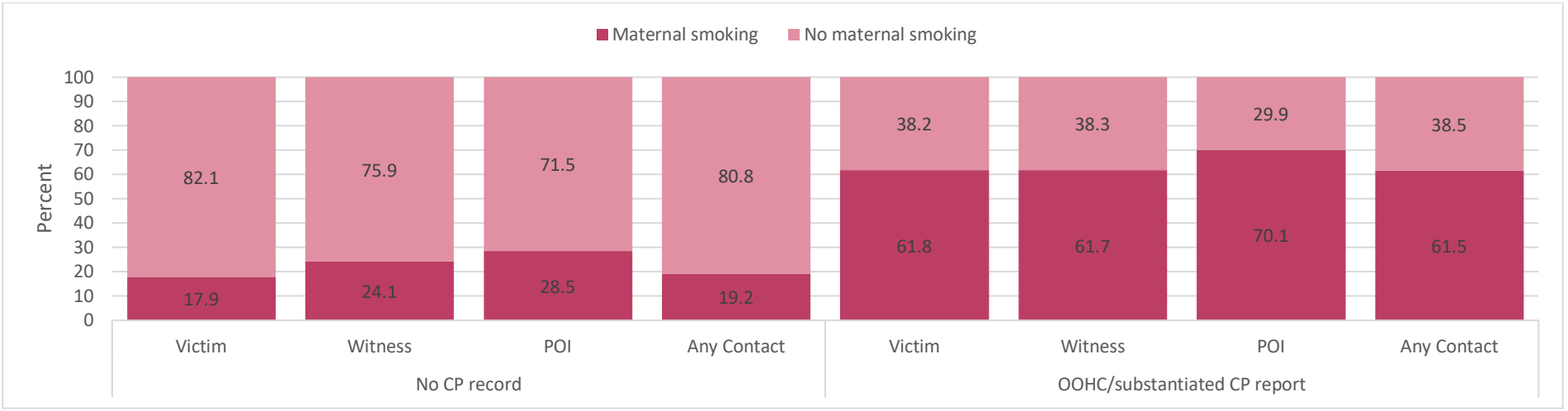


Figure D16: Percent of children within each child protection (CP) subgroup born pre-term or full-term, who had contact with police (N=63,775).

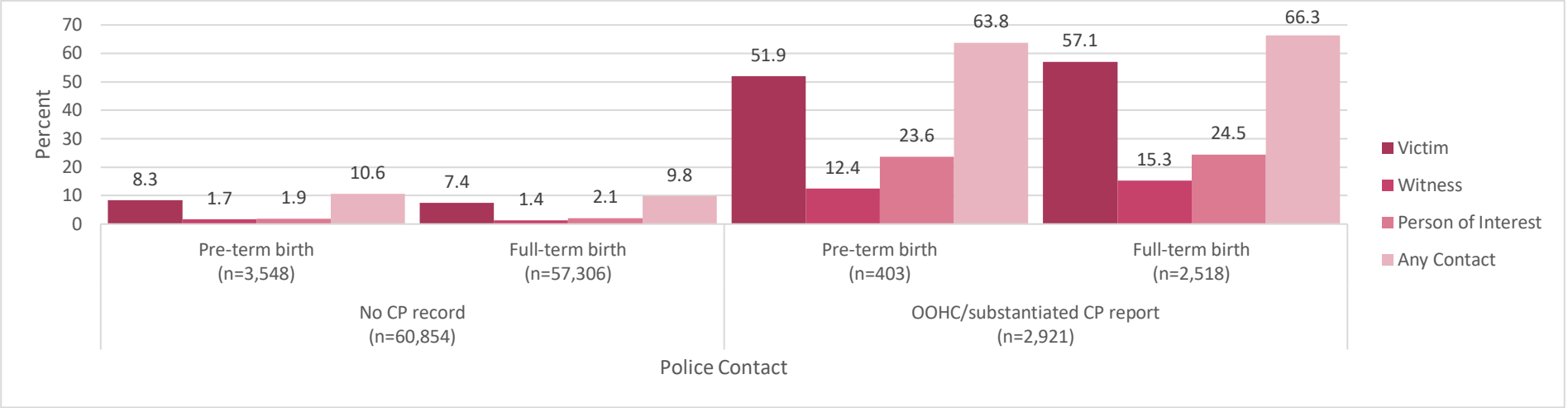


Figure D17: Distribution of children born pre-term or full-term as a percent of the group of children with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

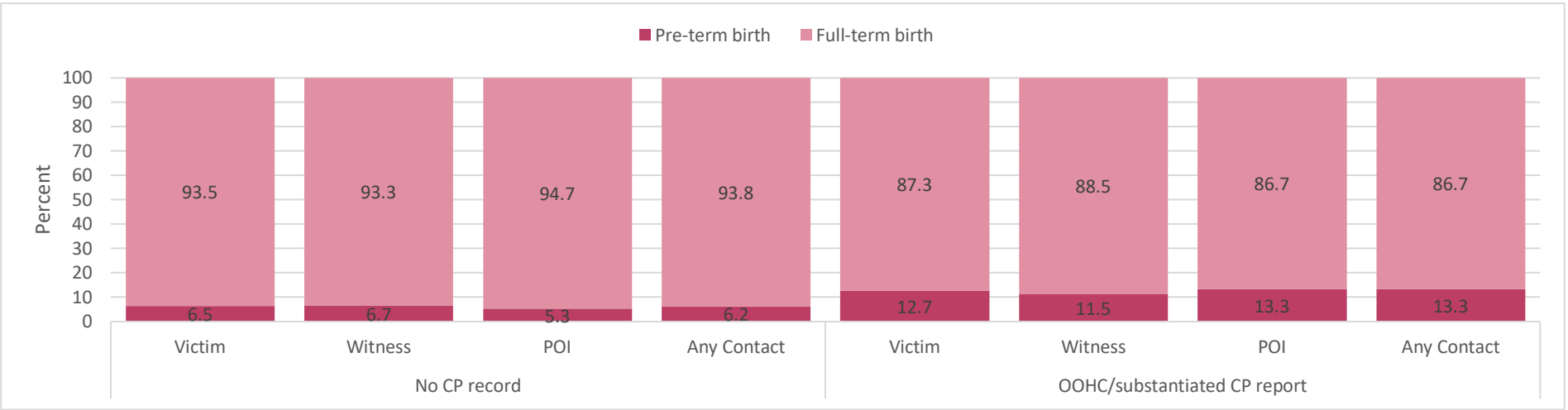


Figure D18: Percent of children within each child protection (CP) subgroup exposed to parental mental illness who had contact with police (N=64,096).

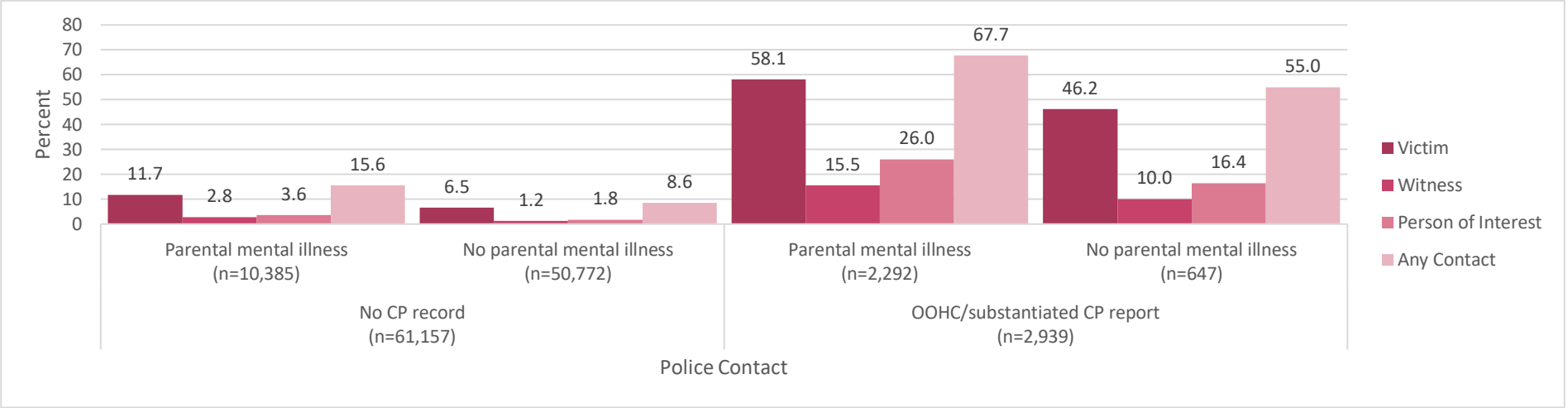


Figure D19: Distribution of children exposed to parental mental illness as a percent of the group of children with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.

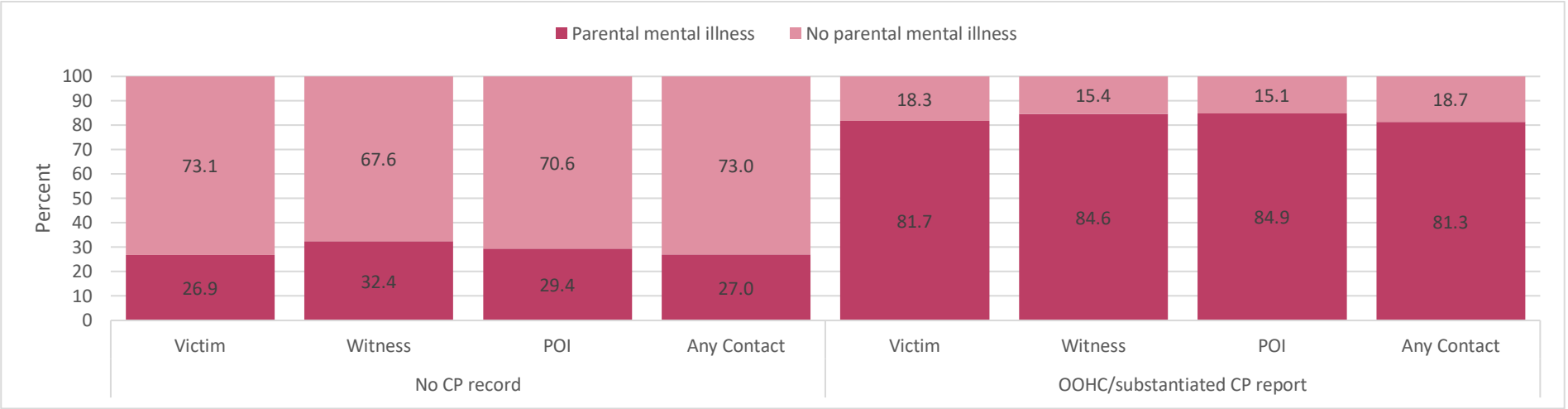


Figure D20: Percent of children within each child protection (CP) subgroup identified exposed to parental criminal history who had contact with police (N=64,096).

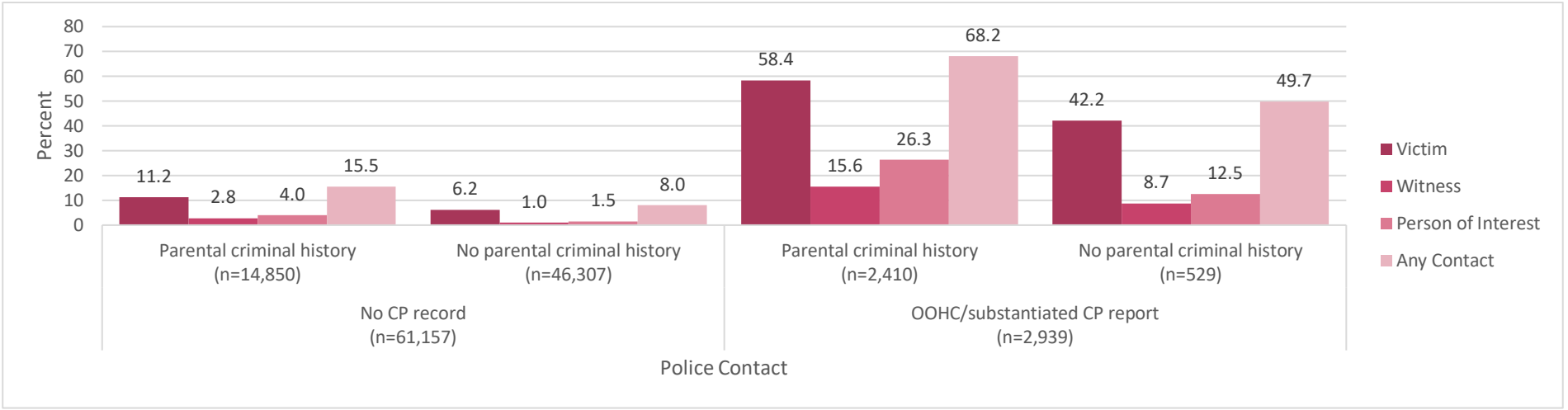
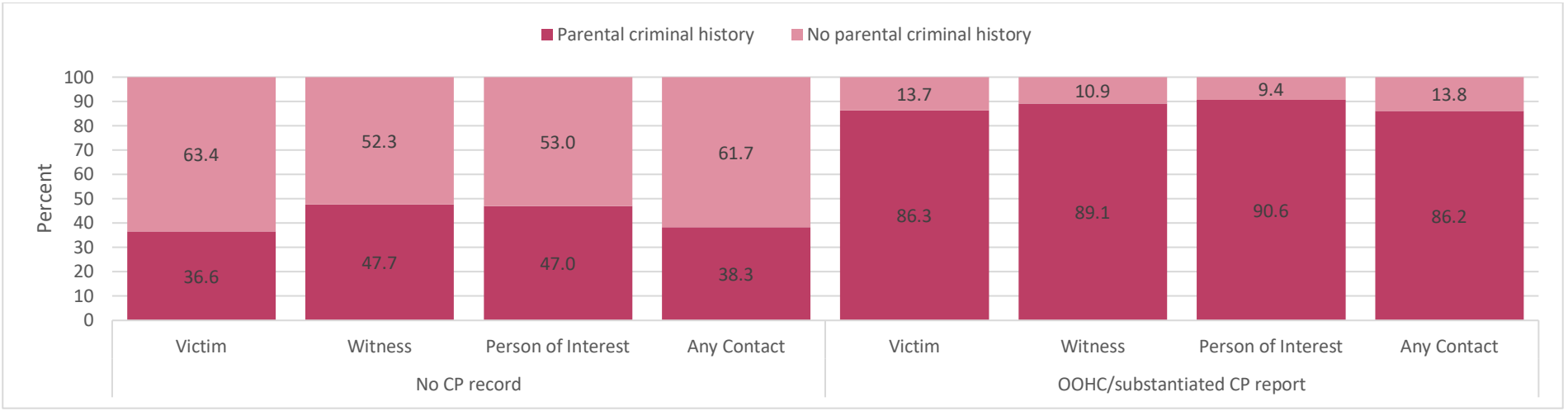


Figure D21: Distribution of children exposed to parental criminal history as a percent of the group of children with police contacts by age 14 years, by OOHC/substantiated child protection (CP) reports.



General Discussion

Executive Summary

The purpose of this report was to assist the NSW DCJ to improve their policies and practice around identifying and assessing child need, to ensure safety, wellbeing, and positive life outcomes for children in OOHC.

The brief received from DCJ requested information about particular developmental outcomes of children with substantiated 'Risk of Significant Harm' reports (whether or not the children had been placed in OOHC) to determine whether there was a link between child maltreatment (including child abuse and neglect) and a child's developmental outcomes.

Each developmental outcome across early and middle childhood was thus examined with respect to:

- The highest level of child protection response (non-ROSH, non-substantiated ROSH, substantiated ROSH, or OOHC placement);
- The number of ROSH reports (single ROSH report, 2-10 ROSH reports, 11+ ROSH reports);
- Single or multiple (substantiated) maltreatment types (physical abuse, emotional abuse, sexual abuse, or neglect;
- The type of substantiated maltreatment (physical abuse, emotional abuse, sexual abuse, or neglect) among those exposed to a single type of maltreatment only;
- Exposure to various other risk factors spanning individual, familial, and contextual factors.

Children reported to child protection services before the age of 5 years show higher rates of later adversity in childhood (relative to those not subjected to such reports) as evident in all of the developmental outcomes examined (namely, developmental readiness for school, academic achievement, indices of psychopathology, and police involvement). There is typically a pattern of higher rates of adversity in line with a greater level of child protection response, with children subjected to substantiated ROSH and/or OOHC placements showing the highest rates of developmental vulnerability, academic under-achievement, self-reported psychopathology, and contact with the police. There is also typically a higher proportion of children showing poor developmental outcomes among those with multiple ROSH reports, although the differences were minimal for self-reported psychopathology. The influence of different types of maltreatment exposure was mixed across these outcomes, but there were generally higher rates of adverse developmental outcomes among those exposed to more than one type of maltreatment. Finally, the adverse developmental outcomes of children with substantiated child protection reports were generally augmented to varying, but relatively small, degrees by the child's sex (males overrepresented in poor performing groups), socioeconomic disadvantage, Indigenous status, young maternal age at birth of child, maternal smoking during pregnancy, pre-term birth, parental mental illness, and parental criminal offending. These risk factors are known to be associated with child protection involvement as well as with many adverse health and social outcomes throughout childhood, adolescence, and adulthood.

Summary of Findings for each Developmental Outcome

School readiness (AEDC)

This report shows increased rates of being identified as developmentally 'vulnerable' or 'at-risk' across all domains of early childhood development (physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (school-based), communication skills and general knowledge) among children subject to child protection reports by age 5-6 years.

There was a stepwise increase in the rates of developmental vulnerability across increasing levels of child protection response for all AEDC domains, with the exceptions of the physical health and wellbeing, cognitive skills (school-based) and communication skills and general knowledge domains for those in OOHC,

suggesting a potential mitigating effect of OOHC or other factors associated with that placement, in relation to these developmental domains.

Other notable points:

- While at least 55% of the child protection children were developmentally 'on-track', this was less than for the proportion of children not reported to child protection services (82%).
- Children exposed to multiple incidents (ROSH reports) and multiple forms of maltreatment showed higher rates of developmental vulnerability than children exposed to only a single incident of substantiated maltreatment, or a single form of maltreatment.
- Of children with a substantiated maltreatment report, the highest proportion of children showing AEDC developmental vulnerability (on any domain) was among those exposed to neglect.
- Indigenous children with substantiated child protection reports were overrepresented among the developmentally vulnerable groups in all domains, as were children born to young mothers, and those exposed to maternal smoking in pregnancy, parental mental illness and parental criminal offending.

It is important to note that the present findings do not reflect formal analyses of differences in developmental vulnerability between subgroups represented here, or the likelihood of developmental 'vulnerability' or 'at-risk' status according to child protection contacts, as we have published in two previous papers (Green et al., 2018b; Rossen et al., 2019). Published analyses showed that children with substantiated maltreatment by the time of school entry were more than three times more likely than non-maltreated peers to be developmentally vulnerable on three or more AEDC domains (Green et al., 2018b).

Both of our published studies reported that children with child protection contact before age 5-6 years were at significantly increased risk of developmental vulnerability in early childhood on all domains of the AEDC, and that these children were also more likely to be vulnerable on multiple domains. However, the Green et al. (2018b) paper was restricted to data for substantiated ROSH reports and OOHC placements (according to data provided for Wave 1 data linkage of the NSW-CDS). With subsequent access to all levels of child protection response data (including non-substantiated and non-ROSH reports) in Wave 2 linkage of the NSW-CDS, Rossen et al. (2019) showed that *earlier* first contact with the child protection system (whether or not the initial report was substantiated), showed the strongest effect on AEDC developmental vulnerabilities at age 5 years. The Rossen et al. (2019) paper was also the first to examine subgroups of children known to child protection services within a hierarchy of service provision – ranging from the highest level of service response being an OOHC placement, through substantiated ROSH, non-substantiated ROSH, and non-ROSH reports: the analyses of these subgroups of children indicated that those with substantiated ROSH reports showed the greatest increased risk (4.9 times) of developmental vulnerability on three or more domains of the AEDC, followed by children in OOHC (3.9 times), children with non-substantiated ROSH reports (2.8 times) and then those with non-ROSH reports (2.1 times). These AEDC findings have also been reported in two Evidence to Action notes produced in collaboration with DCJ (see below).

Academic achievement (NAPLAN)

Children subject to child protection reports showed increased rates of scoring below the national minimum standard on the Grade 5 NAPLAN test across all domains tested (reading, writing, spelling, grammar and punctuation, numeracy). There was a stepwise increase in these rates (of scoring below the national minimum standard) across increasing levels of child protection response, for all NAPLAN domains (with the possible exceptions of spelling and grammar and punctuation for those in OOHC). As with the AEDC, this could reflect a somewhat mitigating effect for OOHC children, but the differences are too small for even a tentative conclusion in this case.

Other notable points:

- While at least 59% of the children in contact with child protection services scored at, or above, the national minimum standard of the NAPLAN, this was less than the proportion of children scoring above the national minimum standard among those who were not reported to child protection services (89%).
- Children exposed to multiple incidents (ROSH reports) and multiple forms of maltreatment showed higher rates of achieving below the national minimum standard in all NAPLAN domains, relative to their counterparts exposed to only a single incident of substantiated maltreatment, or a single form of maltreatment.
- There was little difference in the proportions of children achieving below the national minimum standard according to the type of substantiated maltreatment among those exposed to a single type.
- Indigenous children with substantiated child protections reports and/or OOHC placements were strikingly overrepresented among those performing below the national minimum standard on all domains (especially in writing), as were children exposed to young maternal age at birth of child, maternal smoking in pregnancy, parental mental illness, and parental criminal offending.

It is important to note that the present findings do not reflect formal analyses of differences between subgroups represented here, or the likelihood of poor academic performance in middle childhood among children exposed to maltreatment, as we have recently published (Laurens et al., 2020a). The present report differs from the published study in providing information about the educational attainment of children with substantiated child protection reports restricted to Grade 5 NAPLAN data, but expands the previous findings by including all NAPLAN domains among the outcome variables examined.

The Laurens et al. (2020a) study showed that children reported to child protection services are more likely than unreported children to attain *below average* reading and numeracy domains of the NAPLAN, and less likely to attain *above average* national standards on these NAPLAN domains. Data for the published study was restricted to 56,860 children and their parents to examine the associations between different levels of child protection reports and 3rd- and 5th-grade reading and numeracy attainment on the NAPLAN. Children with substantiated child protection reports (who were not placed into care) demonstrated the worst reading and numeracy attainment, with some evidence of a potential beneficial effect of care placement for maltreated children. The published study also considered the role of multiple other individual, family, and neighbourhood adversities that may confound these relationships. These findings endorse policies that promote collaboration, training, and information sharing between child protection and education systems, as well as other agencies, to support the academic achievement of all children with child protection reports, and broader provision of universal and targeted interventions depending on the report level. Our NAPLAN findings have also been reported in an Evidence to Action note produced in collaboration with DCJ (see below).

Internalising and externalising psychopathology (SDQ)

This report shows that children subject to child protection reports have higher rates of abnormal SDQ scores for all subscales of psychopathology (emotional symptoms, conduct problems, hyperactivity-inattention, peer relationship problems), prosocial behaviour, and total difficulties score. There was a stepwise increase in these rates across increasing levels of child protection response, with the exceptions of emotional symptoms and hyperactivity-inattention for those in OOHC. This could reflect a partial mitigating effect of OOHC itself, or other factors associated with OOHC placement.

Other notable points:

- Between 32%-51% of children known to child protection services did not show any evidence of psychopathology at age 11 years, relative to 56% of those not reported to child protection services.
- Children with multiple ROSH reports reported higher rates of *conduct problems* than children with single incidents of substantiated maltreatment, but this was not as apparent for other internalising and externalising psychopathology at age 11 years.
- There were few differences in the proportions of children reporting childhood psychopathology at age 11 years, according to the type of substantiated maltreatment experienced.
- Total psychopathology was about the same for boys and girls known to child protection services, but girls had higher rates of emotional (internalising) symptoms than boys. In contrast, boys peaked on conduct (externalising) problems and had higher rates of prosocial problems than girls.
- Indigenous and non-Indigenous children with substantiated child protection reports showed similar rates and patterns of psychopathology. Children living in areas of socioeconomic disadvantage showed higher rates of psychopathology across all subscales among the children known to child protection services.
- While young maternal age at birth of child did not appear to be a factor in rates or pattern of psychopathology in general among the children known to child protection services, maternal smoking in pregnancy was associated with a higher rate of total psychopathology, especially conduct problems, and this pattern was repeated for parental mental illness and parental criminal offending.

It is important to note that the present findings do not reflect formal analyses of differences in childhood psychopathology between subgroups represented here, or the likelihood of internalising and externalising psychopathology among children known to child protection services. To date, the NSW-CDS team have not published findings reporting the direct associations between child protection services involvement and internalising or externalising psychopathology in middle childhood. However, a recent paper constructed a middle childhood "vulnerability profile" using the SDQ internalising and externalising scales and cognitive (literacy and numeracy) measures, and demonstrated that children known to child protection services were more likely to be represented in this profile in middle childhood, than children without child protection reports (Piotrowska et al., 2020).

Other NSW-CDS studies which have examined risk factors associated with self-reported psychopathology in middle childhood have shown that children of parents with a history of criminal offending are more likely to experience conduct problems, hyperactivity-inattention, and emotional symptoms at age 11 years (Tzoumakis et al., 2019; Whitten et al., 2019). Maternal violent offending is a particularly strong predictor of conduct problems, with weaker relationships present for non-violent and minor offences (Tzoumakis et al., 2019). These relationships are not gender specific, with maternal and paternal offending both associated with conduct problems among both boys and girls (Tzoumakis et al., 2020). Children with a chronic physical health condition (e.g., epilepsy, asthma, allergies, and anaphylaxis) experience increased risk of overall psychopathology at age 11 years (Laurens et al., 2019). Children who report subclinical hallucinatory or delusional experiences at 11 years are at increased risk of both SDQ internalising and externalising psychopathology, and report problems on multiple (3 or more) SDQ scales, compared to children without these experiences (Laurens et al., 2020b). Lower levels of prosocial behaviour characterise children who have a weak connection with the natural environment (Whitten et al., 2018).

Police contact as a victim, witness or person of interest

Children subject to child protection reports had higher rates of police contact of any type than those without child protection reports, and there was a stepwise increase in police contacts across the increasing levels of child protection responses, plateauing for those with substantiated ROSH or OOHC placement.

The highest rate of police contact was as a victim of crime. This should be interpreted with caution when every child victim of sexual abuse will necessarily be reported to the police, or indeed may have been

reported *by* police to child protection services. Many other children who are neglected or subject to serious physical abuse will also be reported to police as victims of crime.

Other notable points:

1. Approximately 35% of children known to child protection services by age 5 years had not been in contact with the police by age 13-14 years, but this was less than the proportion (~90%) of children who were not known to child protection services or the police.
2. A higher proportion of children with multiple ROSH reports had been in contact with police (61-78%), relative to the proportion of children with a single ROSH report and in contact with police (47%).
3. Children exposed to sexual abuse had higher rates of contact with police as a 'victim' (88%) than as a 'witness' (10%) or 'person of interest' (16%), but there were only relatively small differences in the proportions of children known to police according to other types of maltreatment exposure.
4. There were slightly more children known to police among those exposed to multiple maltreatment types (78%) than those with single maltreatment type (64%).
5. Indigenous children had higher police contact rates overall and for each category than non-Indigenous children.
6. Children exposed to socioeconomic disadvantage, young maternal age at birth of child and pre-term birth did not differ in rates and types of police contact, but children exposed to maternal smoking during pregnancy had higher rates of all forms of police contact.
7. Children exposed to parental mental illness or parental criminal offending had increased rates of all types of police contact, and both of these risk factors were strikingly overrepresented among children with police contacts of any type.

It is important to note that the present findings do not reflect formal analyses of differences in police contact between subgroups represented here, or the likelihood of contact with police among children known to child protection services, and we have yet to publish a study with this information reported. Our previously published papers show that nearly one in six (n=14,324) children among the entire NSW-CDS cohort had been in contact with the police, for any reason, by the age of 13-14 years (Whitten et al., 2020). Around half of the children with police contact as a person of interest or witness also had a separate contact as a victim, and the likelihood of police contact was significantly greater among children living in socioeconomic disadvantage, those of Indigenous background, and those born to young mothers (Whitten et al., 2020). Another published study indicates that both sons and daughters of offending parents were approximately three and four times more likely to have been in contact with the police, respectively, compared to children whose parents did not have a history of offending (Tzoumakis et al., 2020).

ANSWERS TO SPECIFIC QUESTIONS POSED BY DCJ

With respect to the specific question posed by the DCJ request we offer the following responses in light of data presented within this report.

1: What types of substantiated records of childhood maltreatment are linked to children with poor developmental outcomes?

Children with both substantiated and non-substantiated child protection reports have higher rates of adverse developmental outcomes than the age-matched child population without reports, including rates of developmental vulnerability on starting formal schooling, academic underachievement, self-reported psychopathology at age 11 years, and contacts with police. Rates of poor developmental outcomes increase progressively as the highest level of child protection response increases, in line with the severity, although there is some suggestion that being in OOHC may be helping to mitigate adverse outcomes in some domains.

When considering different types of maltreatment, higher rates of early childhood developmental vulnerability at age 5 years were evident among children with substantiated reports of neglect. However, that pattern was not evident for the outcome of academic achievement at age 10 years, where there was little difference in the proportion of children subjected to physical abuse, emotional abuse, or neglect who failed to achieve minimum NAPLAN standards, among those with a single substantiated maltreatment type. In relation to self-reported psychopathology at age 11 years, there was little difference according to maltreatment types. Perhaps unsurprisingly, children subjected to sexual abuse had the highest rates of contact with the police, and this likely reflects the mandatory reporting of criminal activity (i.e., sexual abuse) by DCJ to justice authorities, as well as by the police to child protection services.

2: Does being exposed to one or multiple incidents, or types, of childhood maltreatment differentially influence the developmental outcomes of children and young people?
Generally, children exposed to multiple incidents, and those exposed to multiple types, of maltreatment have slightly higher rates of poor developmental outcomes than those with a single substantiated report, or those exposed to only one type of maltreatment. However, this was not borne out in all developmental outcomes; in particular, findings were less consistent for self-reported psychopathology where only *conduct problems* appear to be more prevalent among those with multiple ROSH reports. However, it should be noted that there were very small numbers of children exposed to multiple maltreatment types.

3: What role do other risk factors (pre-term birth, maternal age at birth, maternal smoking exposure in utero, parental mental illness, and parental criminal history) play in a child's developmental outcomes?
All of these factors have an adverse impact on developmental outcomes, but the magnitude of their impact when considered individually is relatively small.

Limitations

While the aim of this report was to assist DCJ to improve their understanding of child need in OOHC and the impact of child maltreatment of a child's developmental outcomes, the request for information was not restricted to children placed in OOHC, but instead extended to children with substantiated ROSH reports (regardless of whether the child had been subsequently placed in OOHC). There may be differences in the chronicity or severity of maltreatment and its associated risk factors among children placed in OOHC relative to those with substantiated child protection reports who remain cared for in the home.

We did not examine subgroups that might have been formed based on the developmental timing of the first report to DCJ, or the duration of contact with DCJ (or OOHC placements) which might also be informative. And, we did not use all data available regarding the type of maltreatment: to avoid confounding results for a particular type of maltreatment we excluded children exposed to multiple maltreatment types.

Most importantly, there were no statistical analyses undertaken to quantify the individual or combined effects of particular risk factors on the developmental outcomes considered in this report. Accordingly, interpretations of differences between groups presented here must be exercised with caution – some group differences evident in the proportion of children with specific developmental outcomes will not be statistically significant or meaningful. Moreover, the individual contributions of particular risk factors may be substantially reduced if considered simultaneously with other risk factors; our published research findings on these topics may therefore be more informative about these issues.

The following Evidence to Action notes may also be of interest.

Evidence to Action (E2A) notes

1. NSW Department of Communities and Justice. (2020). *Developmental vulnerability and contact with the child protection system: Findings from the NSW Child Development Study.* FACSIAR Evidence to Action note.
2. NSW Department of Communities and Justice. (2018). *Child maltreatment in early childhood: Developmental vulnerability on the AEDC: Findings from the NSW Child Development Study*. FACSIAR Evidence to Action note.
3. NSW Department of Communities and Justice. (2020). *What is the impact of maltreatment on a child's education? Findings from the NSW Child Development Study*. FACSIAR Evidence to Action note. In press.

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Reference List

Brinkman, S. A., Gregory, T. A., Goldfeld, S., Lynch, J. W., & Hardy, M. (2014). Data resource profile: The Australian Early Development Index (AEDI). *International Journal of Epidemiology, 43*(4), 1089-1096. doi:10.1093/ije/dyu085

Carr, V. J., Harris, F., Raudino, A., Luo, L. M., Kariuki, M., Liu, E. W., Tzoumakis, S., Smith, M., Holbrook, A., Bore, M., Brinkman, S., Lenroot, R., Dix, K., Dean, K., Laurens, K. R., & Green, M. J. (2016). New South Wales Child Development Study (NSW-CDS): An Australian multiagency, multigenerational, longitudinal record linkage study. *BMJ Open, 6*(2). doi:10.1136/bmjopen-2015-009023

Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(11), 1337-1345. doi:http://dx.doi.org/10.1097/00004583-200111000-00015

Green, M. J., Harris, F., Laurens, K. R., Kariuki, M., Tzoumakis, S., Dean, K., Islam, F., Rossen, L., Whitton, T., Smith, M., Holbrook, A., Bore, M., Brinkman, S., Chilvers, M., Sprague, T., Stevens, R., & Carr, V. J.

(2018a). Cohort profile: The New South Wales Child Development Study (NSW-CDS) – Wave 2 (Child age 13 years). *International Journal of Epidemiology, 47*(5), 1396-1397k. doi:10.1093/ije/dyy115

Green, M. J., Tzoumakis, S., McIntyre, B., Kariuki, M., Laurens, K. R., Dean, K., Chilvers, M., Harris, F., Butler, M., Brinkman, S., & Carr, V. J. (2018b). Childhood maltreatment and early developmental vulnerabilities at age 5 years. *Child Development, 89*(5), 1599-1612. doi:10.1111/cdev.12928

Laurens, K. R., Green, M. J., Dean, K., Tzoumakis, S., Harris, F., Islam, F., Kariuki, M., Essery, C. M., Scholfield, J. M., & Carr, V. J. (2019). Chronic physical health conditions, mental health, and sources of support in a longitudinal Australian child population cohort. *Journal of Pediatric Psychology, 44*(9), 1083-1096. doi:10.1093/jpepsy/jsz048

Laurens, K. R., Islam, F., Kariuki, M., Harris, F., Chilvers, M., Butler, M., Schofield, J., Essery, C., Brinkman, S. A., Carr, V. J., & Green, M. J. (2020a). 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.org/10.1016/j.chiabu.2019.104326

Laurens, K. R., Tzoumakis, S., Dean, K., Brinkman, S. A., Bore, M., Lenroot, R. K., Smith, M., Holbrook, A., Robinson, K. M., Stevens, R., Harris, F., Carr, V. J., & Green, M. J. (2017). The 2015 Middle Childhood Survey (MCS) of mental health and well-being at age 11 years in an Australian population cohort. *BMJ Open, 7*(6), e016244. doi.org/10.1136/bmjopen-2017-016244

Laurens, K. R., Tzoumakis, S., Dean, K., Harris, F., Carr, V. J., & Green, M. J. (2020b). Population profiles of child-reported psychotic-like experiences and their differential association with other psychopathologies. *British Journal of Clinical Psychology, 59*(1), 22-38. doi:10.1111/bjc.12230

Piotrowska, P. J., Whitten, T., Tzoumakis, S., Laurens, K. R., Katz, I., Carr, V. J., Harris, F., & Green, M. J. (2020). Transitions between socio-emotional and cognitive vulnerability profiles from early to middle childhood: a population study using multi-agency administrative records. *European Journal of Child & Adolescent Psychiatry*, *29*(12), 1659-1670.. doi:10.1007/s00787-020-01475-x

Rossen, L., Tzoumakis, S., Kariuki, M., Laurens, K. R., Butler, M., Chilvers, M., Harris, F., Carr, V. J., & Green, M. J. (2019). Timing of the first report and highest level of child protection response in association with early developmental vulnerabilities in an Australian population cohort. *Child Abuse & Neglect, 93*, 1-12. doi.org/10.1016/j.chiabu.2019.04.007

Tzoumakis, S., Burton, M., Carr, V. J., Dean, K., Laurens, K. R., & Green, M. J. (2019). *Parental offending and children's conduct problems. Trends & issues in crime and criminal justice no. 571*. Canberra: Australian Institute of Criminology Retrieved from https://www.aic.gov.au/publications/tandi/tandi571

Tzoumakis, S., Whitten, T., Piotrowska, P., Dean, K., Laurens, K. R., Harris, F., Carr, V. J., & Green, M. J. (2020). Gender and the intergenerational transmission of antisocial behavior. *Journal of Criminal Justice, 67(C)*, 101670. doi:https://doi.org/10.1016/j.jcrimjus.2020.101670

Whitten, T., Green, M. J., Tzoumakis, S., Laurens, K. R., Harris, F., Carr, V. J., & Dean, K. (2020). Children's contact with police as a victim, person of interest and witness in New South Wales, Australia. *Australian & New Zealand Journal of Criminology, 53*(3), 387-410. doi:10.1177/0004865819890894

Whitten, T., Laurens, K. R., Tzoumakis, S., Kaggodaarachchi, S., Green, M. J., Harris, F., Carr, V, J., &Dean, K. (2019). The influence of parental offending on the continuity and discontinuity of children's internalizing and externalizing difficulties from early to middle childhood. *Social Psychiatry and Psychiatric Epidemiology, 54*(8), 965-975. doi:10.1007/s00127-019-01670-5

Whitten, T., Stevens, R., Ructtinger, L., Tzoumakis, S., Green, M. J., Laurens, K. R., Holbrook, A., & Carr, V. J. (2018). Connection to the natural environment and well-being in middle childhood. *Ecopsychology, 10*(4), 270-279. doi:10.1089/eco.2018.0010