The First Five Years: What makes a difference?

3.3 Hours of child care attendance

Key findings

In this section we describe the associations between child care hours and rates of being developmentally on track for different subgroups of the population.

- Children who were charged for an average of 5 to 30 hours of child care per week had lower rates of developmental vulnerability, and higher rates of being developmentally on track on all domains, than children with less or more hours of child care.
- Children with 3,000 to 7,000 total hours of child care before starting school had lower rates of developmental vulnerability than those with less or more total hours.
- Aboriginal and Torres Strait Islander and LBOTE children with 15 to less than 30 hours were the most likely to be developmentally on track on all domains, and those with over 30 hours had higher rates of being developmentally on track than those with less than 15 hours (including those with no formal child care hours).
- The lowest SEIFA and single parent cohorts had a similar pattern to the entire AEDC cohort, with children who attended preschool without child care having the highest rates of being developmentally on track.

Hours of child care usage

The analysis uses the average *charged* hours of child care per week captured in the Child Care Management System (CCMS), during the time that a child attended child care. The average weekly hours do not capture a variation in the patterns of child care use such as the age the child started in care, or how consistently a child attended child care across different years. This variation might be expected to influence the risk of developmental vulnerabilities. To account for the consistency in the use of child care, we look at the total hours a child was charged across the years before attending school. Total child care hours were calculated as the sum of all charged hours of child care prior to 2018 where the child was registered in the CCMS. Combining the average weekly hours and the total hours provides some visibility of the complex interplay between the total time spent in child care and the intensity of child care used.

Actual hours of child care attended was not available for the 2018 AEDC cohort, noting that hours attended are generally fewer than hours charged (see Figure 1 in the *Appendix* for a comparison between hours attended and charged for the 2021 AEDC cohort). Children not registered in the CCMS were classified as having zero average weekly child care hours.

For simplicity, in some of the analysis we categorised children into three groups based on their hours of child care – less than 15, 15 to less than 30, and 30 or more average charged hours per week.

Children who never attended formal child care were further categorised into two groups – attending and not attending preschool. Children were considered to have attended preschool but not child care if they were flagged as attending preschool in the AEDC but were not registered in the CCMS. Children were considered to have attended neither preschool nor child care if they were flagged as not attending preschool in the AEDC and were not registered in the CCMS.

Note government-funded preschool attendance is not captured in the CCMS data, so early childhood education and care service attendance may be understated particularly for those with lower average charged hours.

For details of the average weekly charged hours, see *Methodology* section.

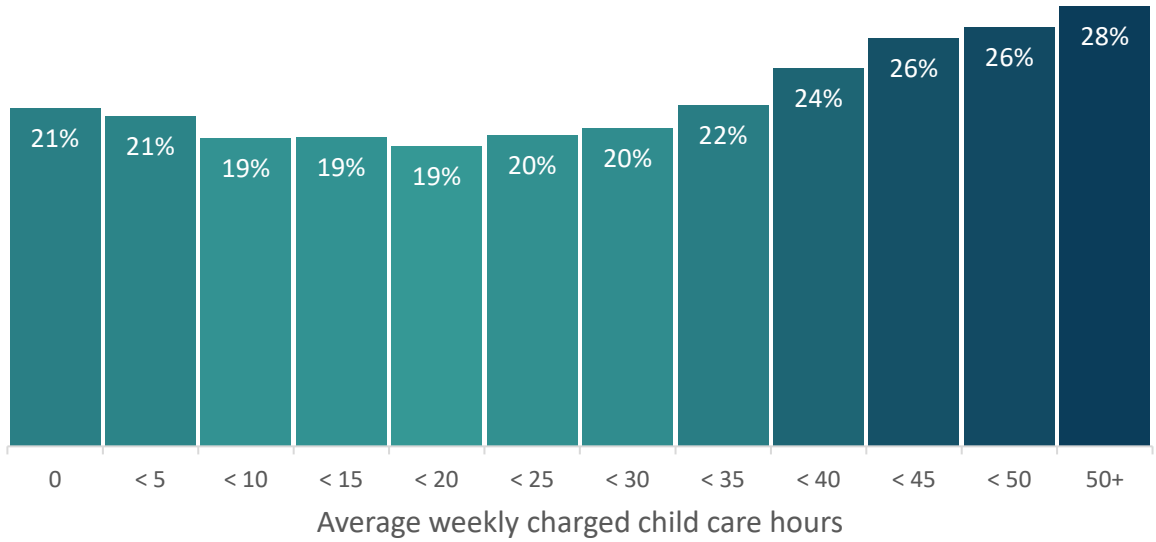
Hours of child care and developmental vulnerability

Hours of child care attendance have been found to be connected to children's development. Some studies have found that children who attend child care for longer hours display more behavioural problems and minor illnesses (NICHD 2005; Belsky et al. 2007). Studies have also observed that learning outcomes of children (and in particular boys) who attended any child care before the age of three are better than those of children who attended no child care at all (Kalb et al. 2014).

This section presents some results based on the summary measure of developmental vulnerability in one or more AEDC domains (DV1). These should be considered along with developmental outcomes on the individual domains shown later, as results for individual domains can diverge from those for summary measures.

Figure 1 shows that rates of developmental vulnerability in one or more AEDC domains (DV1) initially decline and then increase as average weekly child care hours increase. Children with 5 to 25 average weekly charged hours of child care had the lowest rates of developmental vulnerability.

Figure 1. Proportion (%) of children that are developmentally vulnerable on one or more domains (DV1), by average weekly charged child care hours, 2018 AEDC cohort.



Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Notes: This figure compares children from the 2018 cohort of the Australian Early Development Census. N = 272,626. Each child in the dataset contributes to only the minimum bin that describes their weekly hours. Children may have separately attended preschool, which was not captured in the CCMS data.

As children were charged for more than 30 hours in child care their rates of developmental vulnerability increased. Children who were charged for between 30 and 40 hours per week had similar rates of developmental vulnerability to children who attended fewer than five hours per week. Children who were enrolled for more than 40 hours per week had the highest rates of developmental vulnerabilities.

Note that results in this paper focus only on child care hours, rather than the attendance of Early Childhood Education and Care (ECEC) in general, since preschool attendance data is not available. In section 3.1 Figure 6, it is shown that children who attend preschool have a lower rate of being developmentally vulnerable than those who do not.

Comparing outcomes between different groups of children who are using different hours of child care is not straightforward, as any difference in outcomes can be due to other differences between the groups rather than just their child care use. This is the case even if comparisons adjust for variations in some other observed characteristics between the groups. The Productivity Commission (PC 2024) caution that it is harder to find evidence of risks related to high hours of ECEC in research that can more credibly isolate the effects of this intensity. The analysis given here adds to the evidence considered in the PC report, noting the results include non-cognitive as well as cognitive domains; focus on child care rather than preschool programs aimed at older children; and are for an entire cohort rather than being based on specialised programs targeted at disadvantaged children.

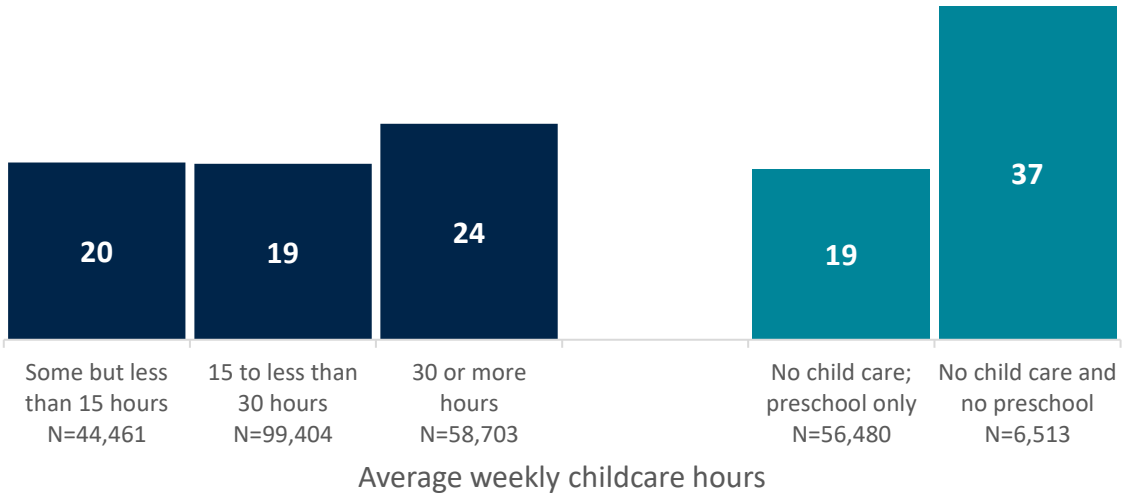
Pattern of child care attendance

This section focusses on the effect of child care hours on outcomes. Other analysis that considered the combined effects of quality and hours suggests that these dimensions can be considered separately, rather than there being significant interaction effects.

To summarise weekly formal child care, we categorised children attending child care into three groups based on their hours of child care – less than 15, 15 to less than 30, and 30 or more average charged hours per week, where the average was taken over the quarters a child was using formal child care. Children who never attended formal child care were further split into two groups, depending on whether or not they had attended preschool.

Children using formal child care with less than 30 average weekly charged child care hours (Figure 2) had very similar DV1 rates (approximately 20 per cent); this increased to 24 per cent for children with longer child care hours. Children who attended preschool but not child care had similar DV1 rates to those with less than 30 hours (19 per cent), while those who attended neither had a substantially higher rate (37 per cent). The small group of children who attended neither preschool nor child care were almost twice as likely to be developmentally vulnerable on one or more domains as other children with no or less than 30 hours of child care.

Figure 2: Proportion (%) of children who were developmentally vulnerable on one or more domains (DV1), by average weekly child care hours, 2018 AEDC cohort.



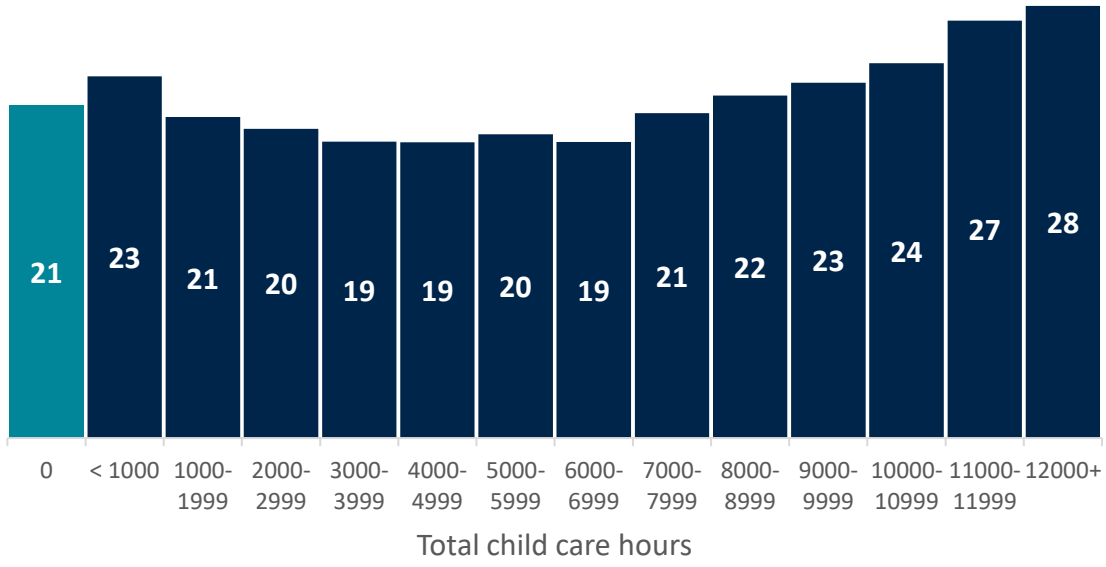
Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Total hours in child care

As well as average hours charged per week, we also looked at the total charged hours across the years before attending school.

Children with 3,000 to 7,000 total child care hours had the lowest rates of developmental vulnerability (DV1, approximately 19 per cent). Those with some but fewer than 1,000 hours of child care had a higher rate of developmental vulnerability on one or more domains (23 per cent), noting that this could reflect underlying factors that contribute to less child care use and higher rates of developmental vulnerability (such as ill health). As the total number of hours increased beyond 7,000, rates of developmental vulnerability on one or more domains began to increase to a maximum rate of 28 per cent for children with 12,000 or more total child care hours.

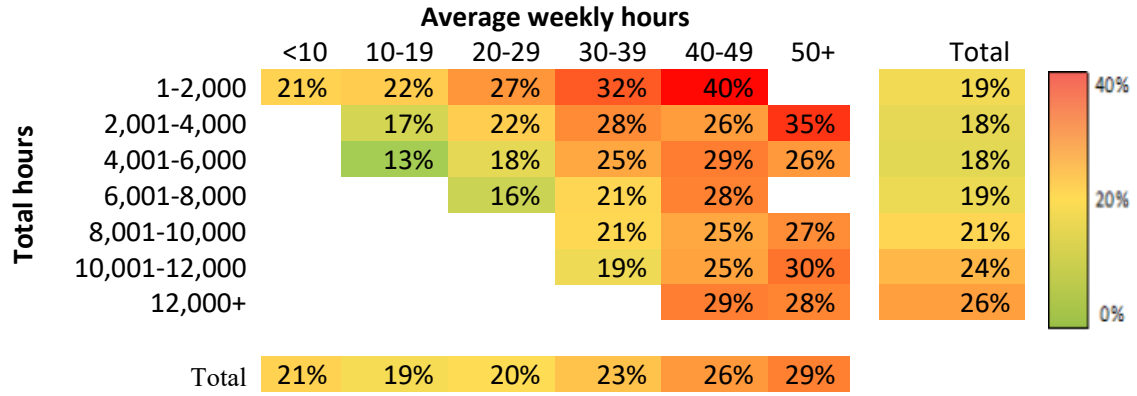
Figure 3: Proportion (%) of children who were developmentally vulnerable on one or more domains (DV1), by total child care hours, 2018 AEDC cohort.



Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.
Note: Children may have separately attended preschool, which was not captured in the CCMS data.

The heat map in Figure 4 (a) show rates of developmental vulnerability on one or more domains (DV1) for combinations of average weekly child care hours and total child care hours until the child attended school. The lowest rates of developmental vulnerability on one or more domains were found for those with the middle range of total hours (2,000-8,000 hours), and a middle range of average weekly hours (10-29 hours). The majority of children in our cohort were using child care in these ranges; see Figure 4(b) for the number of children in each bin. Further research could look at how outcomes vary depending on the age of the child when child care use occurred, separately to the number of hours.

Figure 4: (a) Heatmap of proportion (%) of children who were developmentally vulnerable on one or more domains (DV1), by total child care hours and average weekly hours, 2018 AEDC cohort.



Notes: Cells with fewer than 100 children have been removed.

(b) Heatmap of number of children, by total child care hours and average weekly hours, 2018 AEDC cohort.

Total hours	<10	10-19	20-29	30-39	40-49	50+
1-2,000	13456	25517	5933	877	101	
2,001-4,000	56	19839	21416	3124	571	1569
4,001-6,000		2012	25841	7631	1364	2137
6,001-8,000			6447	15736	2845	80
8,001-10,000			56	7117	6284	168
10,001-12,000				397	4780	269
12,000+					846	563

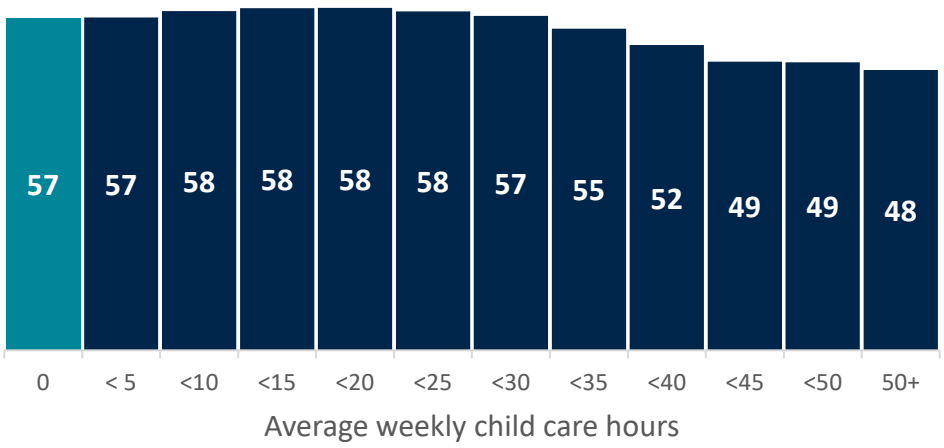
Average weekly hours

Source Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Child care hours and rates of being developmentally on track on all domains

Results in previous sections considered the rate of being developmentally vulnerable on one or more domains (DV1). Another summary indicator, the rate of being developmentally on track on all domains, reflects children's developmental strengths and can identify where things are working well to support children's development.

Figure 5: Proportion (%) of children who were developmentally on track on all domains, by average hours of child care per week, 2018 AEDC cohort.



Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Note: Children may have separately attended preschool, which was not captured in the CCMS data.

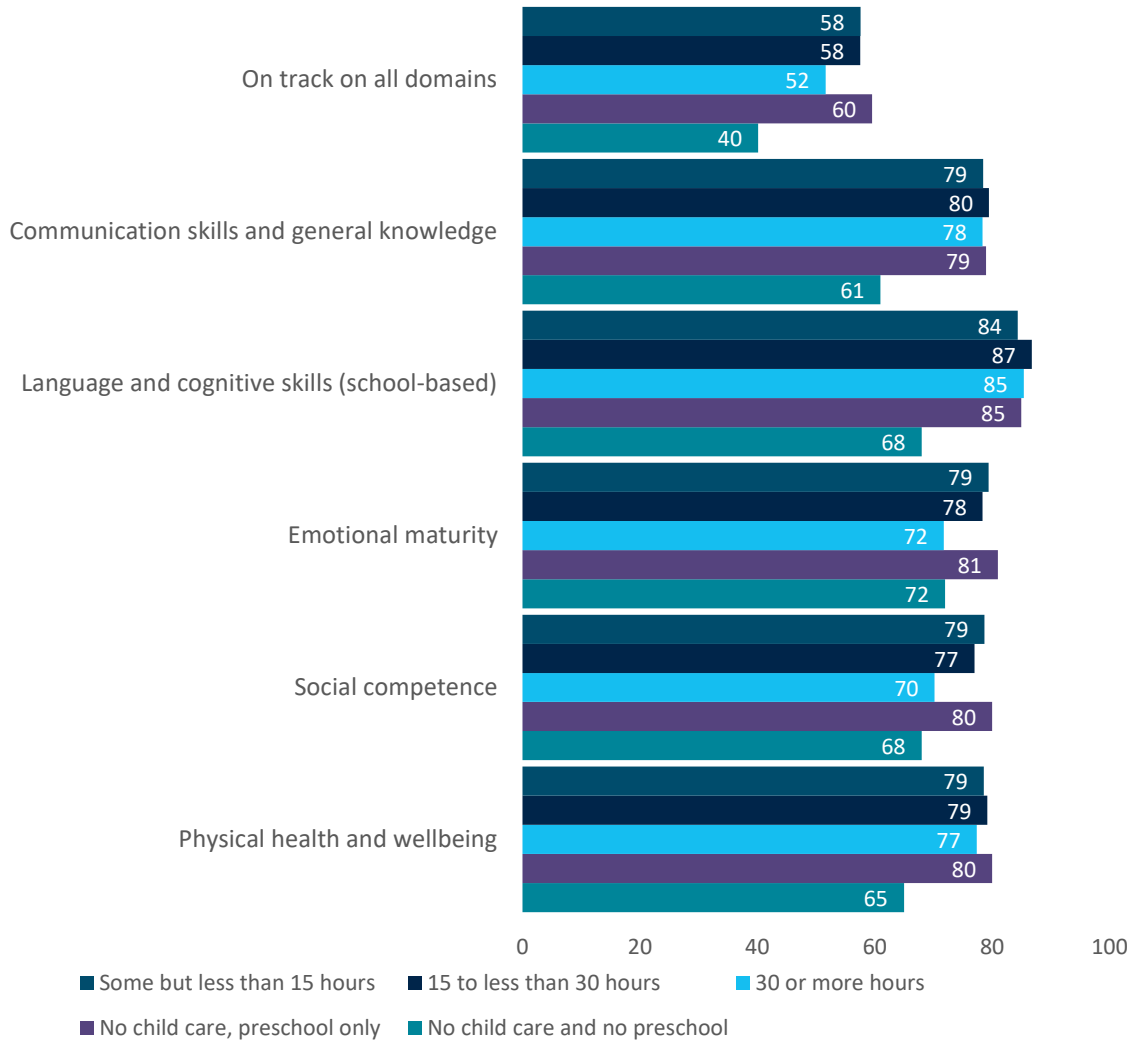
Children with fewer than 30 hours of average charged hours per week were the most likely to be developmentally on track on all domains (Figure 5). Rates of being developmentally on track on all domains declined for more than 30 hours, with a difference of 10 percentage points between the highest (58 per cent for 10-25 hours per week) and lowest (48 per cent for 50 or more hours per week) rates.

Hours of child care and being developmentally on track in each domain

In this section we look at rates of being developmentally on track on all domains and on each domain separately.

Children with some but fewer than 30 average weekly charged hours had the same rates of being developmentally on track on all domains (58 per cent in Figure 6), but children who had longer child care hours were less likely to be developmentally on track on all domains (52%). Children who attended preschool but not child care had high rates of being developmentally on track on all domains (60 per cent), while those who attended neither had the lowest rates (40 per cent).

Figure 6: Proportion (%) of children who were developmentally on track, by average weekly child care hours, for each domain 2018 AEDC cohort.



Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Across the individual AEDC domains, the rate of being developmentally on track also differs with average child care hours.

Children who attended neither child care nor preschool had the lowest rate of being developmentally on track on all domains.

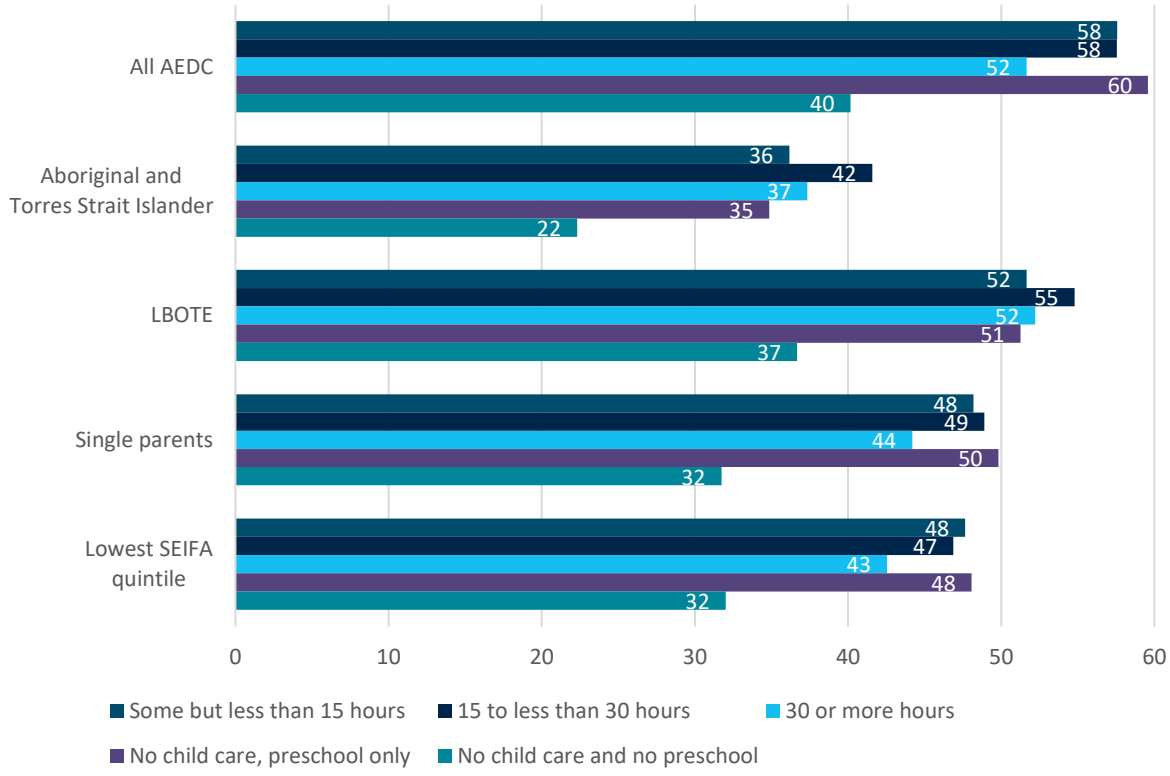
For the social competence and emotional maturity domains, children with 30 or more average charged hours had lower rates of being developmentally on track than those with fewer hours (with the difference reaching 9 and 7 percentage points for the social competence and emotional maturity domains, respectively).

Children with 15 to 30 average weekly charged hours were the most likely to be developmentally on track on the communication skills and general knowledge and language and cognitive skills (school-based) domains. However, the difference between the highest and lowest rates was smaller (around 1 to 3 percentage points). The physical health and wellbeing domain followed a broadly similar pattern.

Child care hours and development outcomes for equity groups

In this section, we look at average charged child care hours and their association with development outcomes for several equity groups including Aboriginal and Torres Strait Islander children, children from a language background other than English, children from single parent households, and children from the lowest SEIFA quintile. The rate of being developmentally on track on all domains for all AEDC children is also shown for comparison.

Figure 7: Proportion (%) of children who were developmentally on track on all domains, by average weekly child care hours, for all AEDC cohort and different equity groups.



Source Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

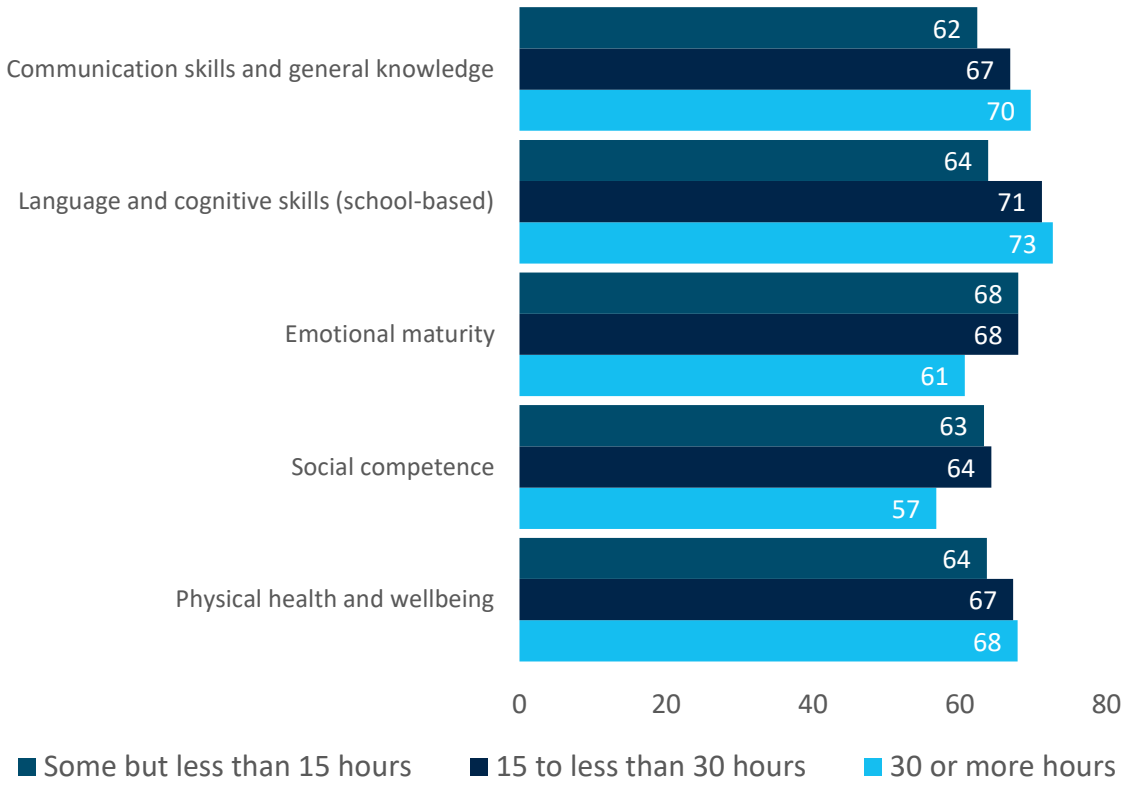
Overall, these equity groups had a lower rate of being developmentally on track on all domains regardless of average child care hours. Again, children who attended neither child care nor preschool had the lowest rate of being developmentally on track for each group.

The lowest SEIFA and single parent cohorts had a similar pattern to the entire AEDC cohort, with children who attended preschool without child care having the highest rates of being developmentally on track. Aboriginal and Torres Strait Islander and LBOTE children had a different trend, with children with 15 to less than 30 hours being the most likely to be developmentally on track on all domains, and those with over 30 hours having higher rates of being developmentally on track than those with less than 15 hours (including those with no formal child care hours).

Aboriginal and Torres Strait Islander children and the AEDC domains

For Aboriginal and Torres Strait Islander children using formal child care, rates of being developmentally on track on individual AEDC domains were generally higher for children in groups with higher average weekly charged hours. For the social competence and emotional maturity domains, however, Aboriginal and Torres Strait Islander children with 30 or more hours had lower rates of being developmentally on track than those with fewer hours.

Figure 8: Proportion (%) of Aboriginal and Torres Strait Islander children who were developmentally on track, by average weekly child care hours, for each domain, 2018 AEDC cohort.

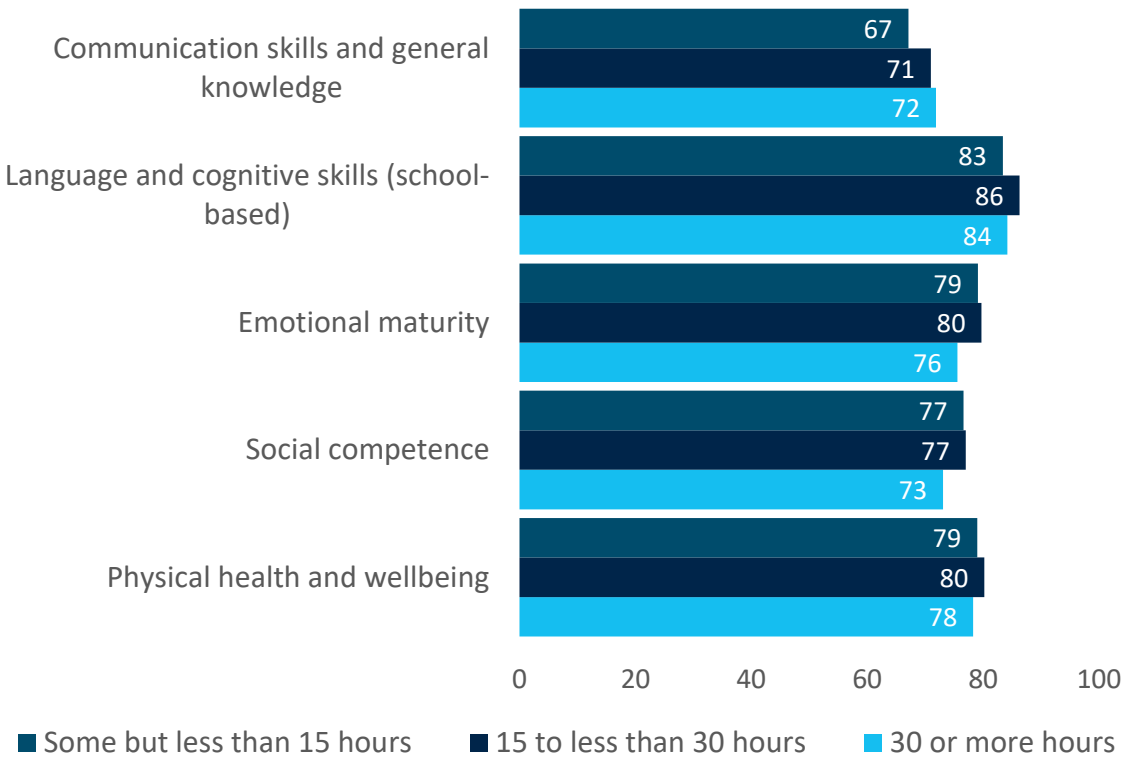


Source Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Children with a Language Background Other Than English (LBOTE) and the AEDC domains

For LBOTE children using formal child care, rates of being developmentally on track for the individual AEDC domains were broadly similar for children with different average charged child care hours. Those with 15 to less than 30 hours generally had the highest rate of being developmentally on track; with the exception being the communication skills and general knowledge domain where those with 30 or more hours were most likely to be developmentally on track.

Figure 9: Proportion (%) of LBOTE children who were developmentally on track, by average weekly child care hours, for each domain, 2018 AEDC cohort.



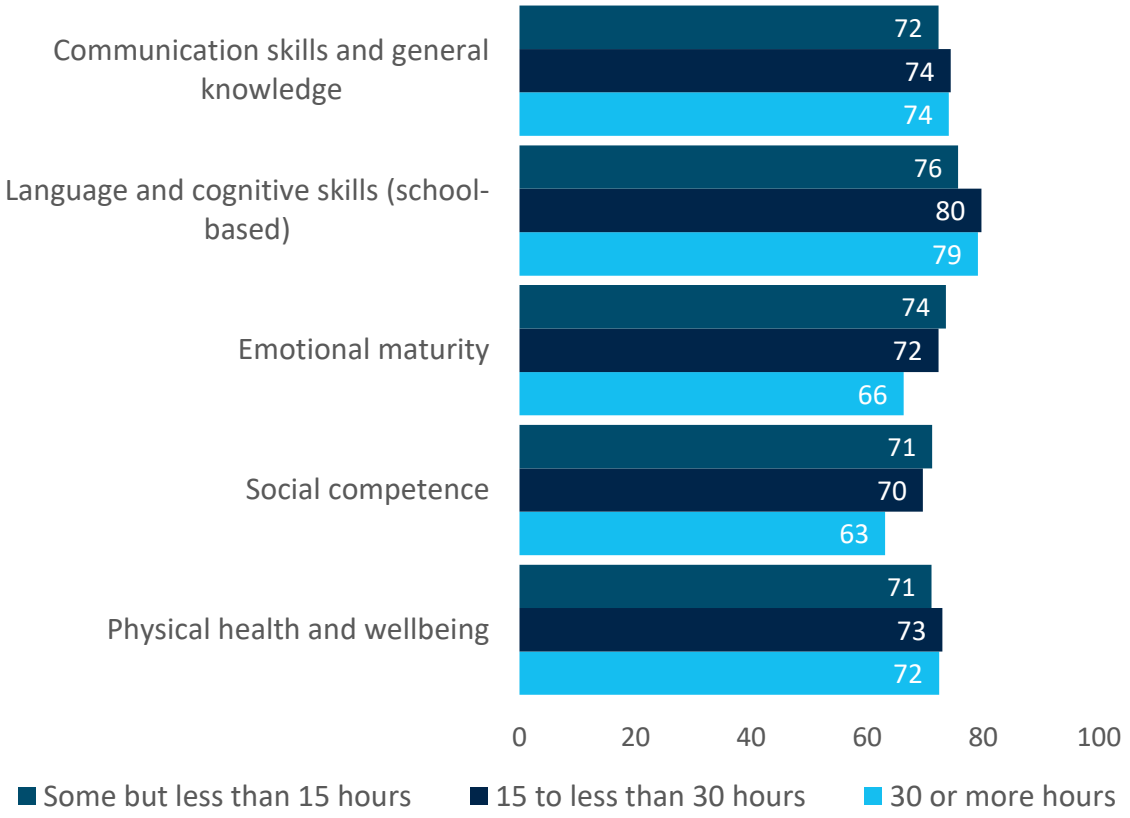
Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Notes: Children were classified as LBOTE if at least one of their parents' language backgrounds was non-English.

Children from single parent households and the AEDC domains

For children from single parent households using formal child care, rates of being developmentally on track were lower on the emotional maturity and social competence domains for groups with higher average charged hours. For the other domains, children with 15 to less than 30 hours had the highest rate of being developmentally on track, though the differences between groups were smaller.

Figure 10: Proportion (%) of children from single parent households who were developmentally on track, by average weekly child care hours, for each domain, 2018 AEDC cohort.

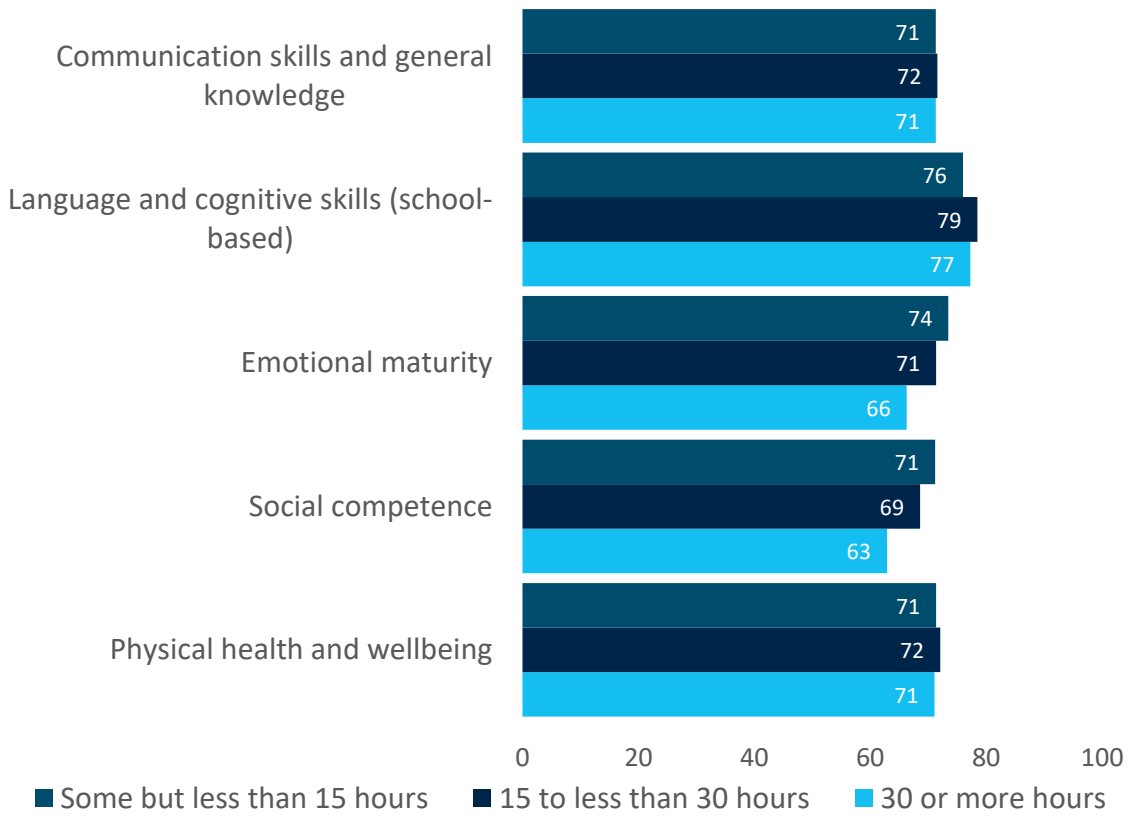


Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Children from low socioeconomic backgrounds and the AEDC domains

Children from the lowest SEIFA quintile using formal child care displayed similar patterns of being developmentally on track across the domains to those from single parent households. Rates of being developmentally on track were lower on the emotional maturity and social competence domains for groups with higher average charged hours. For the other domains, children with 15 to less than 30 hours had the highest rate of being developmentally on track, though the differences between groups were smaller.

Figure 11: Proportion (%) of children in the lowest household SEIFA quintile who were developmentally on track, by average weekly child care hours for each domain, 2018 AEDC cohort.



Source: Customised 'First Five Years' extract from the Multi-Agency Data Integration Project.

Notes: SEIFA quintile refers to the lowest Socio-Economic Index for Areas (SEIFA) index that the child had from birth to AEDC assessment, with 1 being the lowest SEIFA quintile.

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