Is Subsidized Childcare Associated with Lower Risk of Grade Retention for Low-Income Children?

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census.gov

Research questions

Are low-income children who received federal Child Care and Development Fund (CCDF)-subsidized care in early childhood less likely to be held back in school, from kindergarten onward?

Do low-income Black and Hispanic children benefit more from subsidized care than low-income children from other race/ethnic groups?

Low-income young children

Low material resources create difficulties for low-income children in early childhood that can lead to trouble succeeding in school

- More behavior problems, lower knowledge of pre-math and pre-reading concepts when entering school (Duncan et al. 2007)

High-quality childcare promotes

- Cognitive and social development (McCartney et al. 2007)
- School-readiness habits (Peisner-Feinberg et al. 2001)
- Parental learning (Sanders, Deihl and Kyler 2007)

Child Care and Development Fund (CCDF)

- Federal means-tested childcare subsidy reaches approximately 1.4 million children each month

- Designed to support the labor force participation of low-income mothers, for whom difficulty affording childcare is a major barrier to employment

- Positive selection among mothers receiving the subsidy relative to eligible non-recipients (Grobe, Weber and Davis 2008)

Outcome variable: Grade retention

- Being "held back" in school

- Low-income children are at elevated risk of grade retention (Stearns et al. 2007)

- Low-income Black and Hispanic children are at especially elevated risk of grade retention (Stearns et al. 2007)
  - Discrimination (Saft and Pianta 2010) and segregated neighborhoods with highly-concentrated poverty (Lichter, Parisi and Taquino 2015) and under-resourced schools (Frankenberg 2013)

Data and methods: Constructing Data File

To answer my research questions, I use <u>Child Care and Development Fund</u> administrative records merged to the <u>American Community Survey</u>

I construct my data file in four steps

Data and methods: Constructing Data File

Step 1: I identify children in the Child Care and Development Fund (CCDF) administrative records for fiscal years 2004-2011

- Children born in 1997-2007 observed at ages 6 and under
- States that submitted information on the full universe of recipients

Step 2: American Community Survey, 2008-2014

- Children in the ACS from the same 1997-2007 birth cohorts as children in the CCDF, observed beginning in the year they turn 7 through age 17 at the oldest
- Same states as observed in the CCDF file

Data and methods: Constructing Data File

Step 3: I link the CCDF file to the ACS
- Unique anonymized identifier assigned to parents (but not children) in the CCDF file
- Link CCDF adults to information on the same adult in the ACS

Step 4: Within the ACS households of adults who have linked between the CCDF and ACS files, I match CCDF children to their information in the ACS based on their
- Sex
- Birth month, plus or minus 8 months

Data File Construction

CCDF File

ACS

Ages 0-6
CCDF Children

Ages 7-17
CCDF Children

Ages 7-17
Non-CCDF Children

Observe children
monthly for up to 6
years

Observe each child
only once

Data and methods

Measured in the CCDF file: Focal independent variables

- Receipt of CCDF subsidy in early childhood
 - Child is present or absent in CCDF file

Measured in the ACS file

- Outcome variable: Whether child has been held back in school in later childhood/adolescence
  - Standard grade retention measure - child is older than modal two ages for the grade in which he/she is enrolled (Bianchi 1984)
- Additional control variables

Data and methods

- Descriptive estimates

- Logistic regression of likelihood of grade retention

- Predicted probabilities of grade retention based on regression estimates

- Estimates are weighted. Weights are adjusted for the inverse probability of receiving a unique identifier in the CCDF file, the ACS, or both (as appropriate), and for the total number of years in the data file.

Percentage of Children Aged 6-17 Who Received the CCDF Subsidy at Ages 6 and Under

5.3

94.7

Source: CCDF Admin-istrative Records, 2004-2011 and ACS 2008-2014
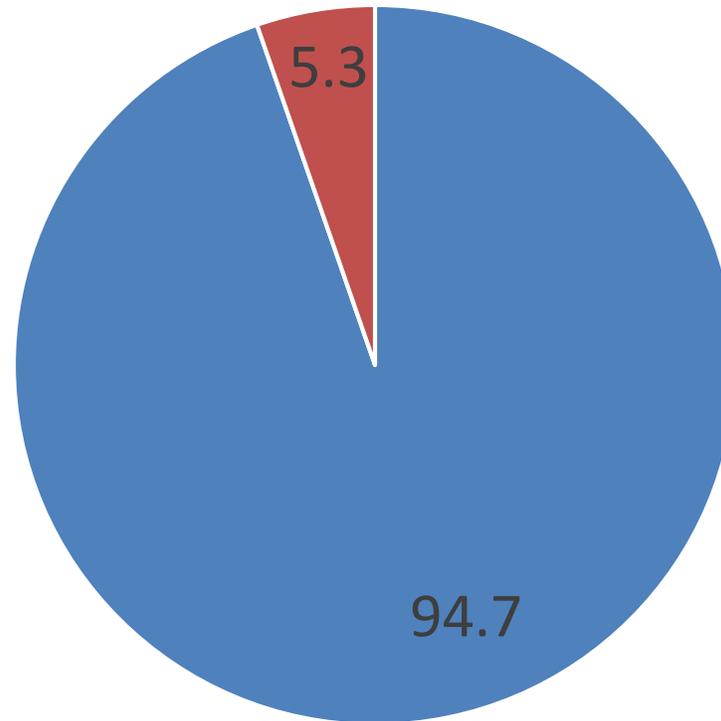
■ Did not receive the subsidy   ■ Received the subsidy

Race/Ethnic Composition
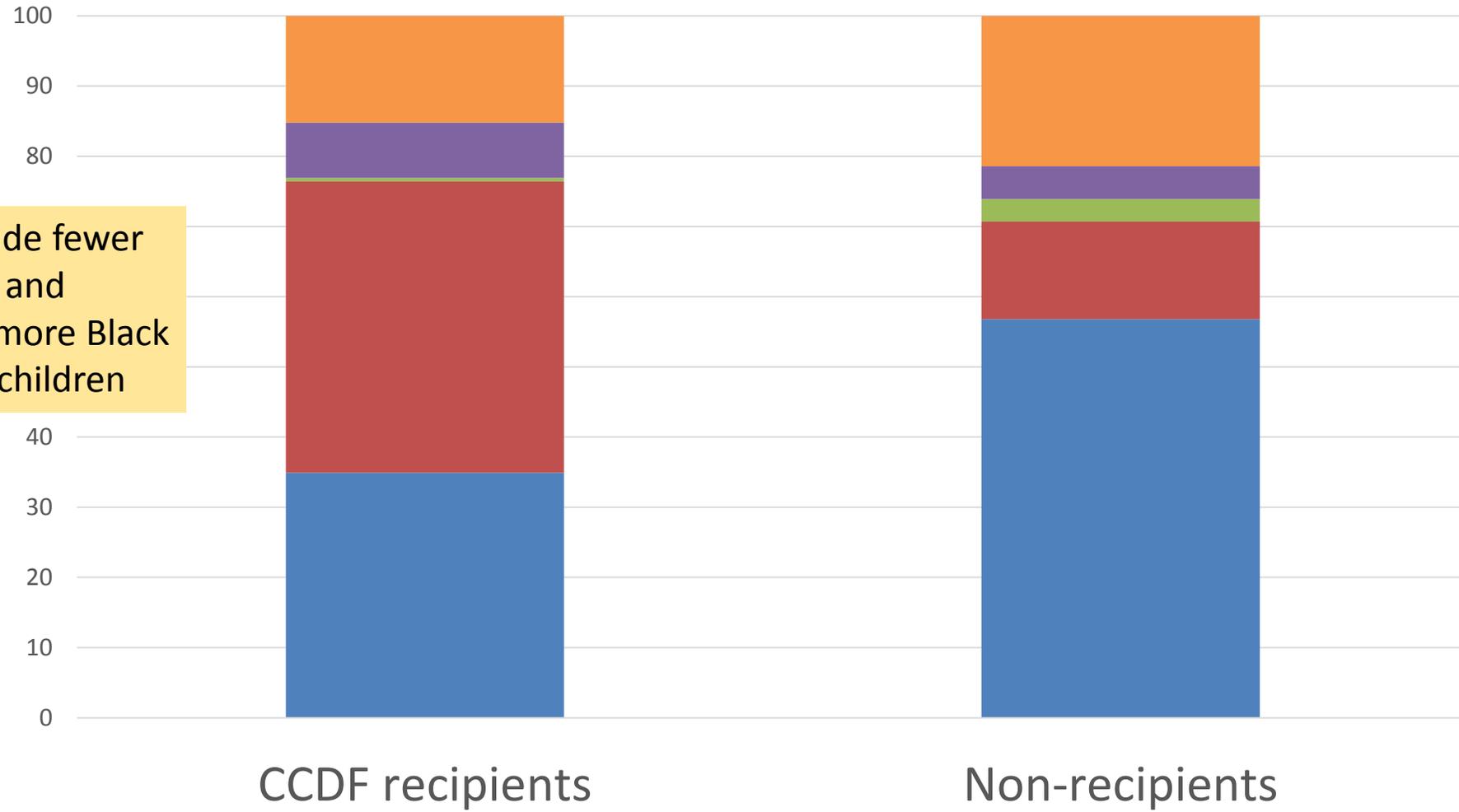
Recipients include fewer Whites, Asians, and Hispanics, and more Black and other race children

Legend:
- White, non-Hispanic
- Black, non-Hispanic
- Asian, non-Hispanic
- Other, non-Hispanic
- Hispanic, any race

X-axis: CCDF recipients | Non-recipients

Household Income at Time of ACS Survey

66.3

34.3

CCDF recipients

Non-recipients

■ ≤85% of state median   ■ >85% of state median
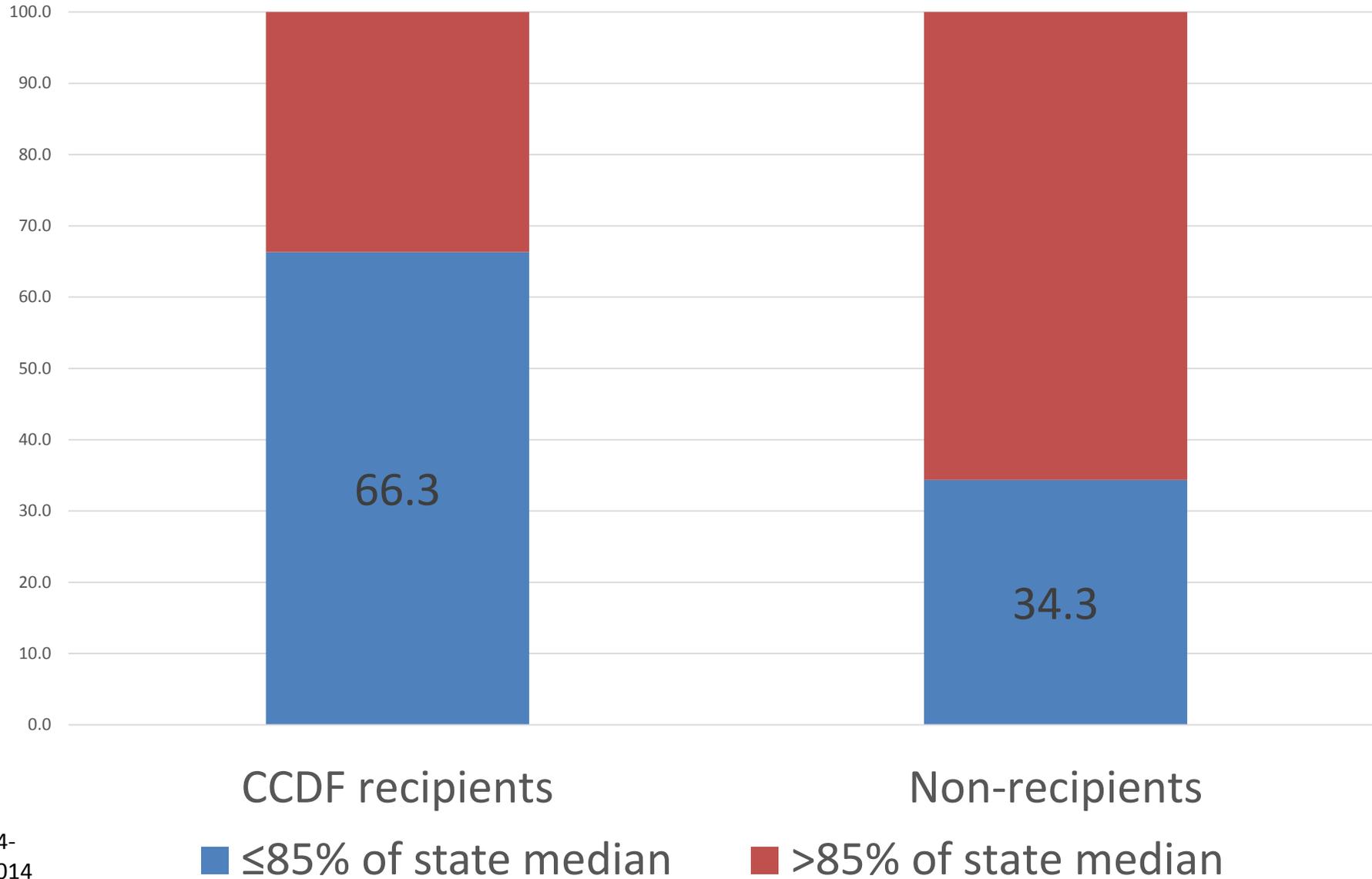
Source: CCDF Admin-
istrative Records, 2004-
2011 and ACS 2008-2014

Percentages Experiencing Grade Retention by Subsidy Receipt are Not Statistically Significantly Different

CCDF recipients: 95.3 | 4.7
Non-recipients: 95.4 | 4.6
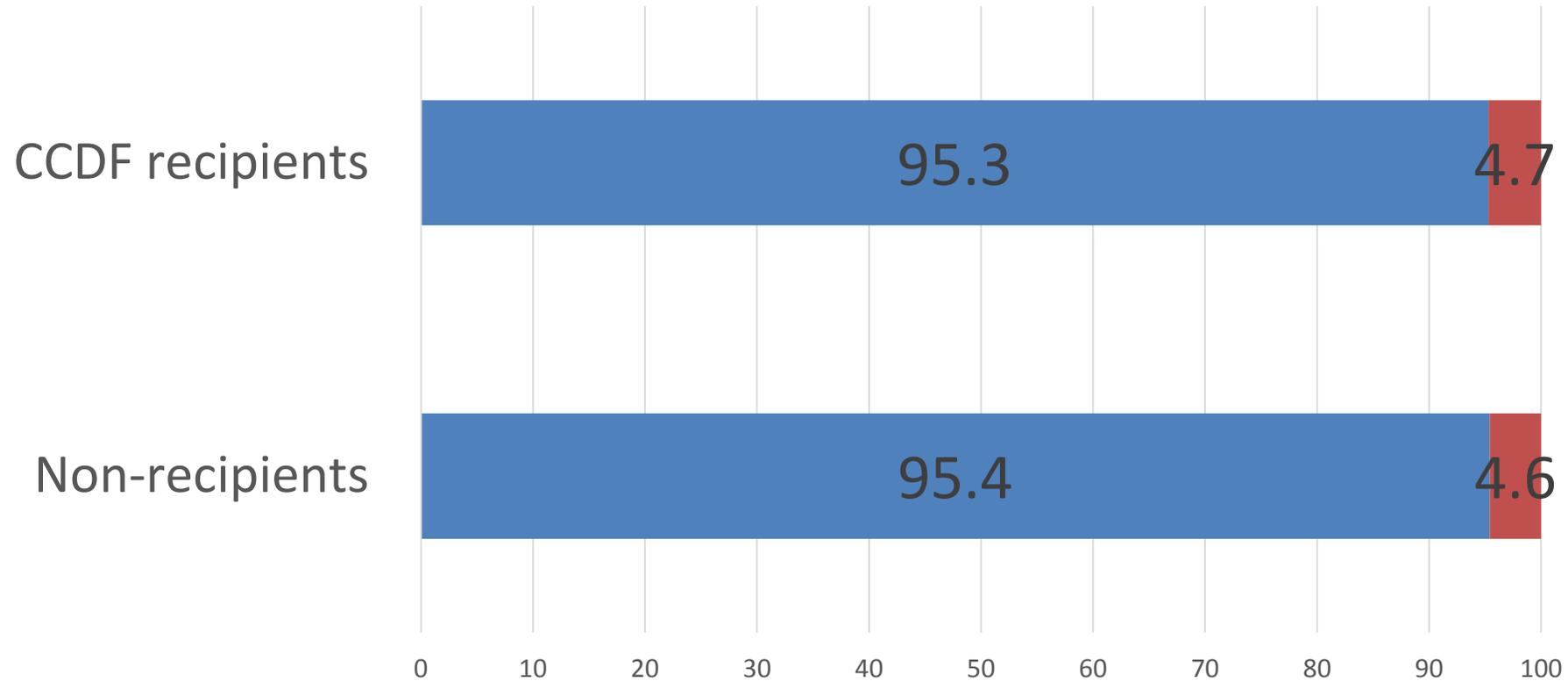
Did not experience grade retention
Experienced grade retention

Source: CCDF Admin-
istrative Records, 2004-
2011 and ACS 2008-2014

Table 1: Selected Odds Ratios for Likelihood of Grade Retention*

	Model 1		Model 2	
Received CCDF-subsidized care	1.14	***	1.02	
Race/ethnicity (vs. White, non-Hispanic)				
Black, non-Hispanic	1.47	***	1.27	***
Asian, non-Hispanic	0.75	***	0.74	***
Other, non-Hispanic	1.28	***	1.19	***
Hispanic, any race	1.42	***	1.25	***
Income at or below 85% of annual state median			1.65	***

Source: 2004-2011 Child Care and Development Fund (CCDF) administrative records and 2008-2014 American Community Survey (ACS) files

Estimates are weighted

*Also controls for sex, only child status, age, age-squared, region, and year observed

Predicted Probability of Grade Retention by Subsidy Receipt, Race/Ethnicity and Current Income

Source: CCDF Administrative Records, 2004-2011 and ACS 2008-2014

Legend:
- No CCDF subsidy, income >85% of median
- Received CCDF subsidy, income >85% of median
- No CCDF subsidy, income ≤85% of median
- Received CCDF subsidy, income ≤85% of median

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Predicted Probability of Grade Retention by Subsidy Receipt, Race/Ethnicity and Current Income
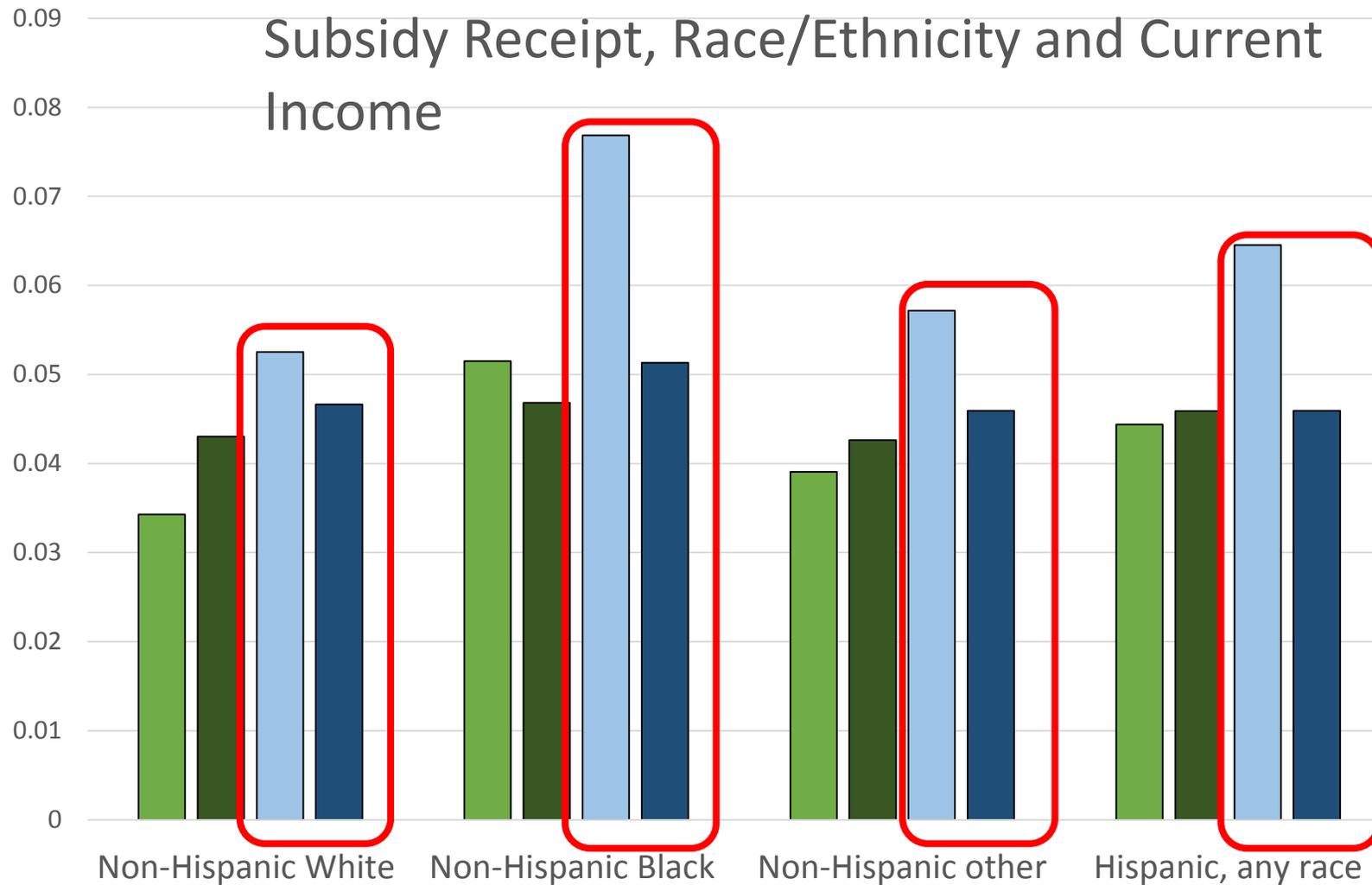
Source: CCDF Administrative Records, 2004-2011 and ACS 2008-2014

- No CCDF subsidy, income >85% of median
- Received CCDF subsidy, income >85% of median
- No CCDF subsidy, income ≤85% of median
- Received CCDF subsidy, income ≤85% of median

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Conclusions

- CCDF subsidized care is associated with a lower probability of grade retention for low-income children

- CCDF-subsidized care appears to benefit most the children who are the highest risk of grade retention—low-income Black and Hispanic children

- What might contribute to the association of CCDF-subsidized care with lower likelihood of grade retention?
  - Cognitive/social development (Peisner-Feinberg et al. 2001)
  - Parental learning (Sanders, Deihl and Kyler 2007)
  - Positive selection of mothers who attain the subsidy (Hawkinson et al. 2013; Johnson et al. 2013)
  - Results not shown here: association is largely due to many CCDF children receiving center-based care, which is generally of high quality

Thank you!

Appendices

CCDF Children's Primary Type of Care

- 1.7
- 14.0
- 21.9
- 62.4
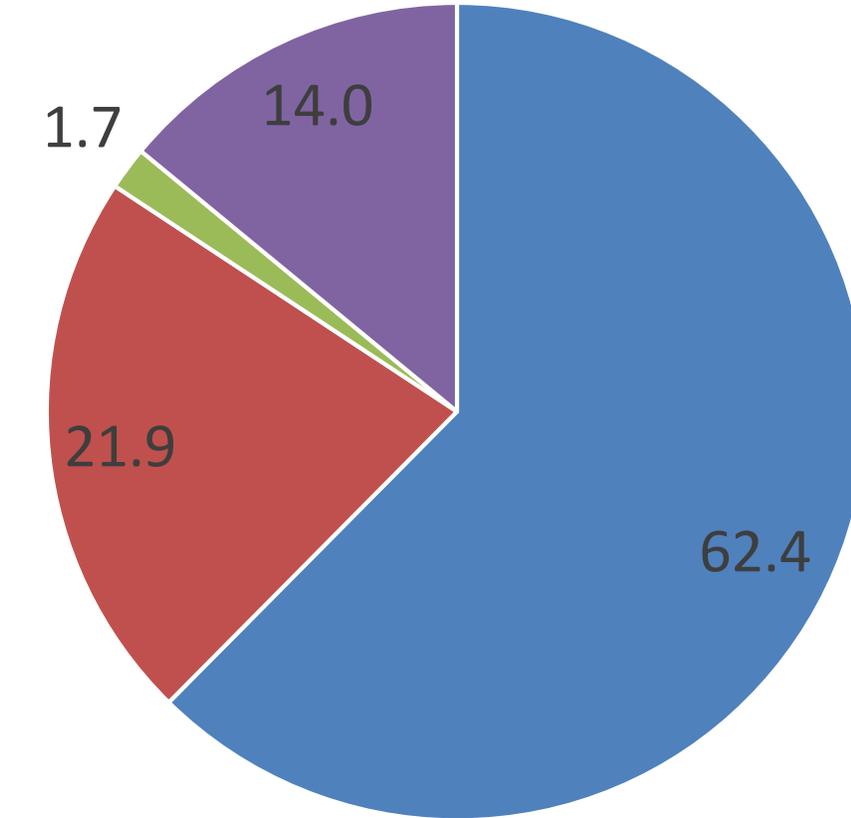
Center care
Family daycare
Babysitter care
Relative care

Source: CCDF Admin-istrative Records, 2004-2011 and ACS 2008-2014

Race/Ethnic Composition by CCDF Children's Primary Care Type

Legend:
- White, non-Hispanic
- Black, non-Hispanic
- Asian, non-Hispanic
- Other, non-Hispanic
- Hispanic, any race

Source: CCDF Admin-istrative Records, 2004-2011 and ACS 2008-2014

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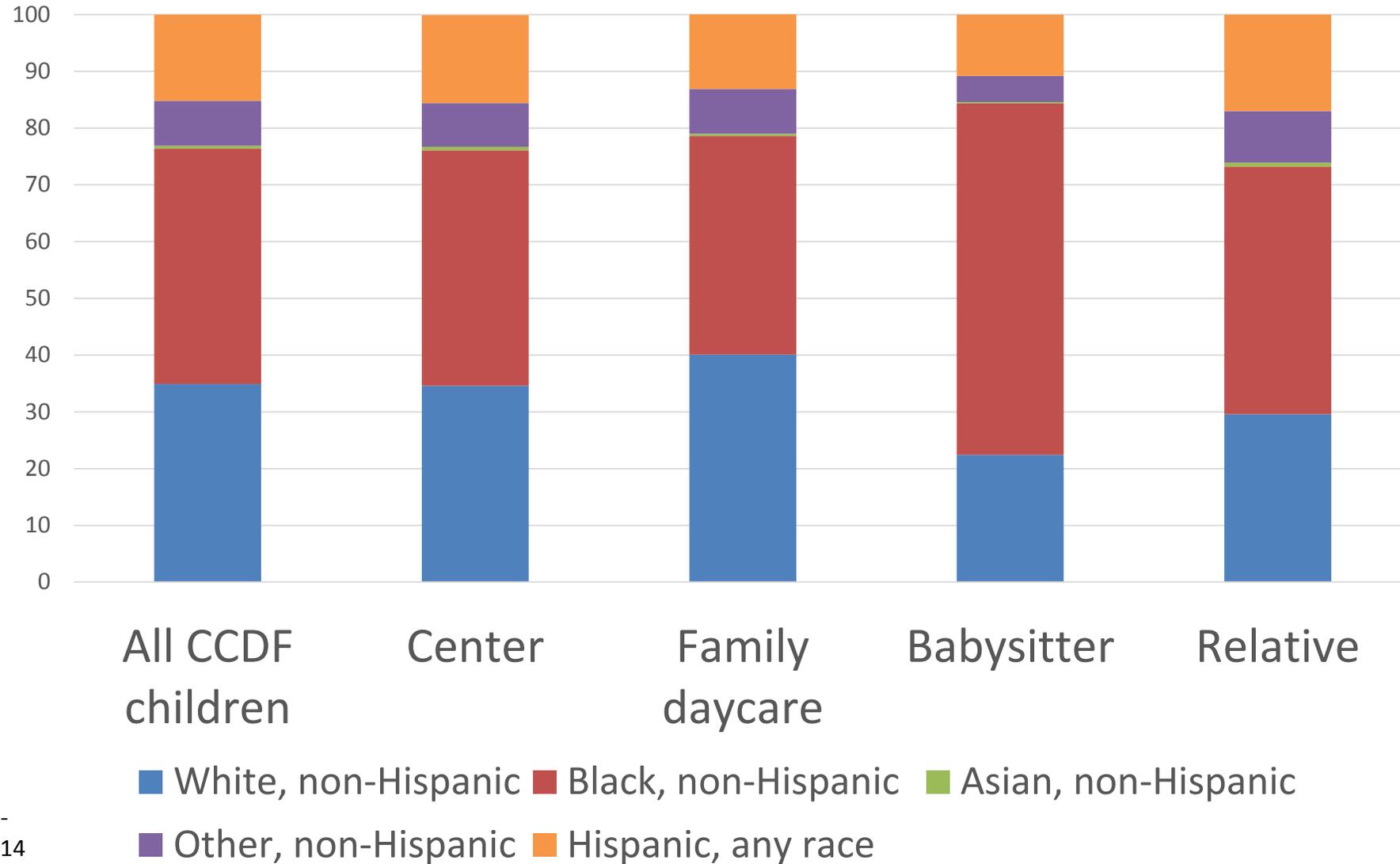
Household Income by Care Type among CCDF Recipients

Center: 62.6
Family daycare: 70.2
Babysitter: 75.3
Relative: 66.3

■ ≤85% of state median   ■ >85% of state median
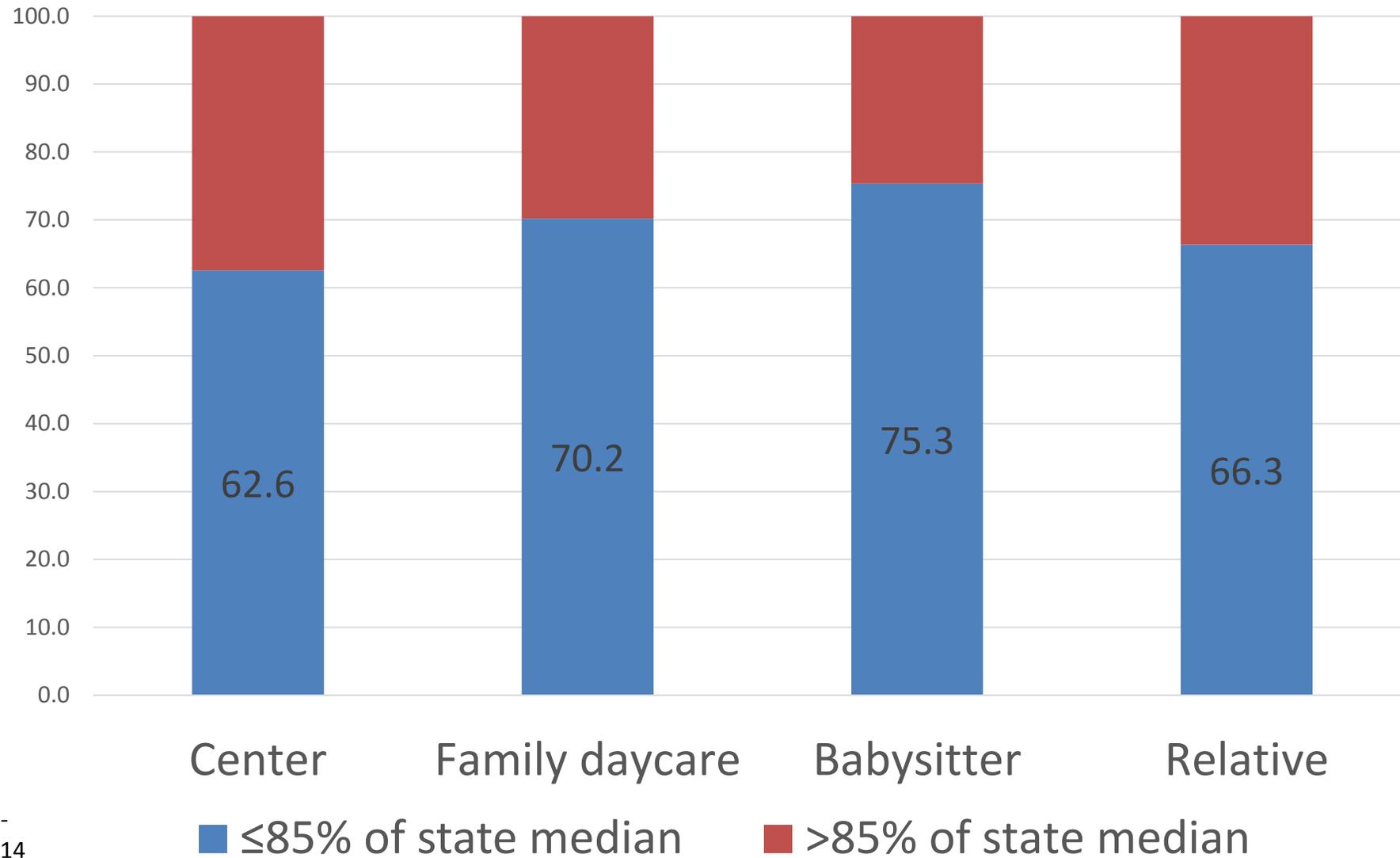
Children in Primarily Center Care and Family Daycare Are Less Likely to Be Held Back

Relative: 5.7
Babysitter: 5.9
Family daycare: 4.5
Center: 4.5

Legend:
- Did not experience grade retention (blue)
- Experienced grade retention (red)
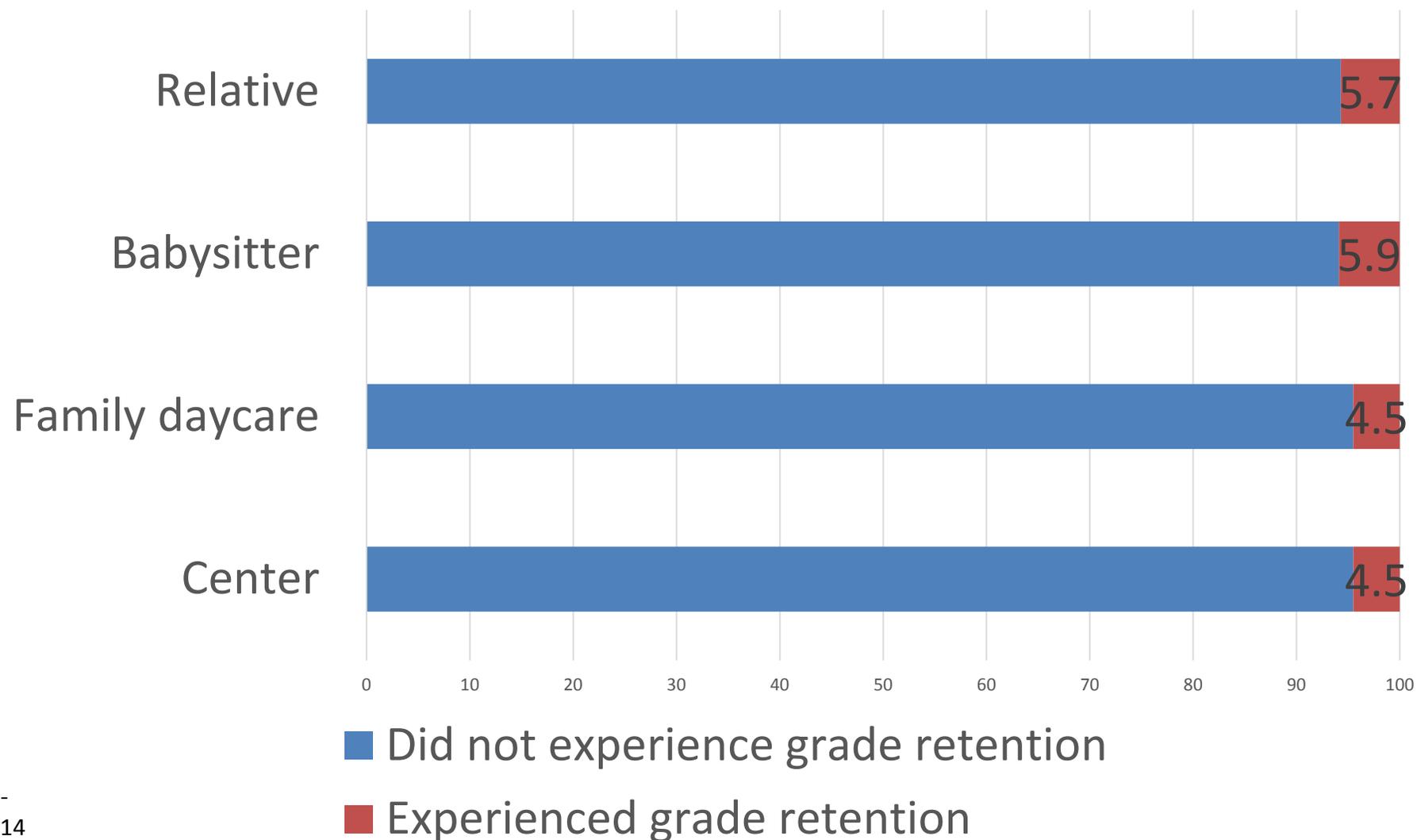
Table 2: Selected Odds Ratios for Likelihood of Grade Retention*

	Model 1		Model 2	
Main type of CCDF-subsidized care (vs. no CCDF-subsidized care)				
Center care	1.08	**	0.98	
Family daycare	1.21	***	1.06	
Babysitter	1.30	*	1.14	
Relative	1.28	***	1.11	*
Race/ethnicity (vs. White, non-Hispanic)				
Black, non-Hispanic	1.47	***	1.27	***
Asian, non-Hispanic	0.74	***	0.74	***
Other, non-Hispanic	1.28	***	1.19	***
Hispanic, any race	1.42	***	1.25	***
Income at or below 85% of annual state median			1.65	***

Source: 2004-2011 Child Care and Development Fund (CCDF) administrative records and 2008-2014 American Community Survey (ACS) files

Estimates are weighted

*Also controls for sex, only child status, age, age-squared, region, and year observed

Predicted Probability of Grade Retention by CCDF Center Care Receipt, Race/Ethnicity and Current Income
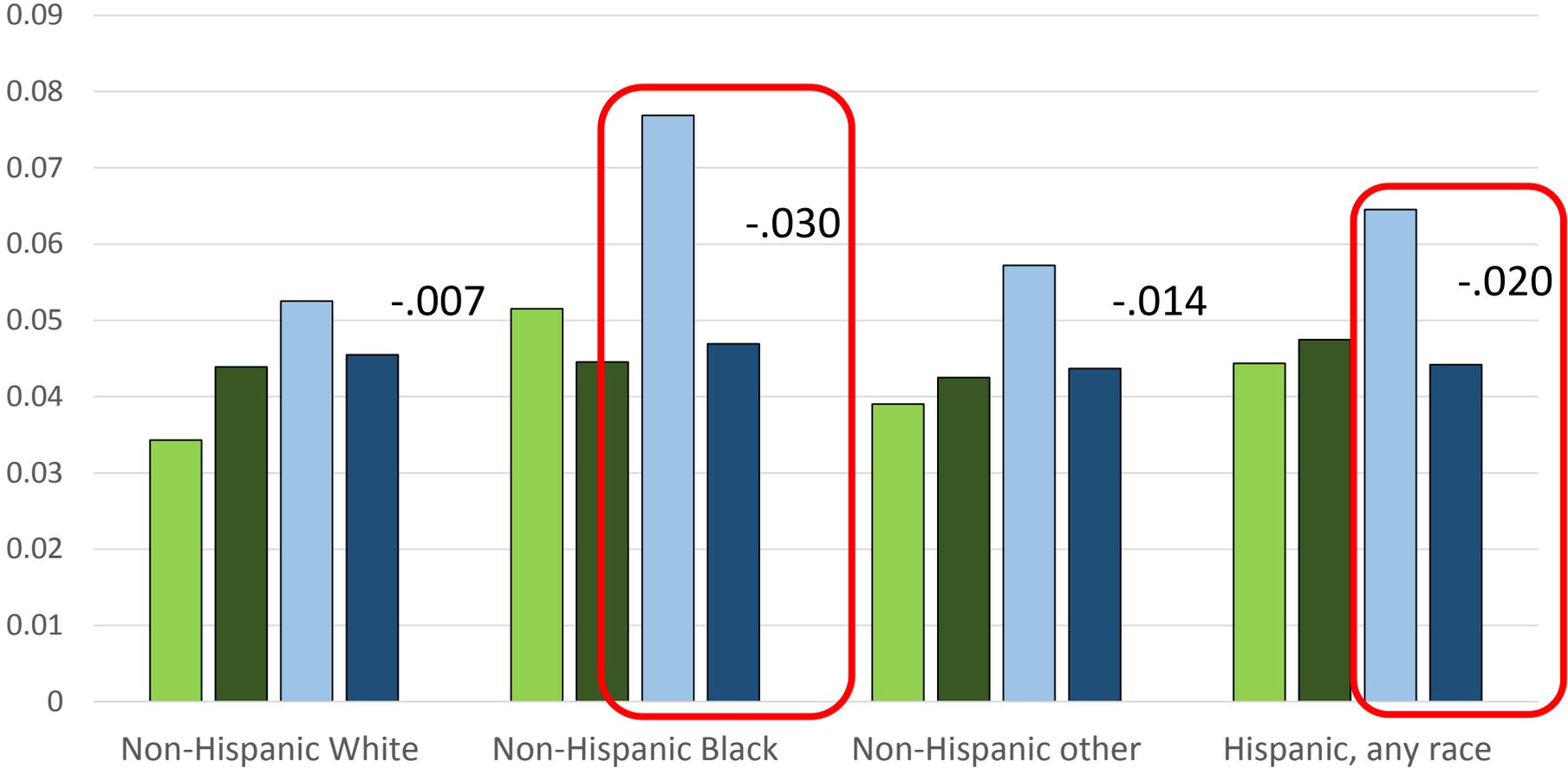
Source: CCDF Admin-istrative Records, 2004-2011 and ACS 2008-2014

Table 1

Table 1: Years When Birth Cohorts of Children Were Observed in the CCDF File and ACS

Birth years of children in the CCDF file	Years observed in the CCDF file	Years observed in the ACS
1997	2003-2004	2008-2014
1998	2003-2005	2008-2014
1999	2003-2006	2008-2014
2000	2003-2007	2008-2014
2001	2003-2008	2008-2014
2002	2003-2009	2009-2014
2003	2003-2010	2010-2014
2004	2004-2011	2011-2014
2005	2005-2011	2012-2014
2006	2006-2011	2013-2014
2007	2007-2011	2014

App Table 1

Appendix Table 1: Types of Care Received at Ages 6 and Under, Observed in Years 2004-2011, among CCDF Children in the Analytic Sample from Full-Universe States Who Matched to Respective State Files of the ACS[a]

All Matched CCDF children		CCDF children who received multiple types of care	
Center care only	52.5	Center care and family daycare	62.4
Family daycare only	13.9	Center care and babysitter care	2.4
Babysitter care only	0.9	Center care and relative care	11.7
Relative care only	10.2	Family daycare and babysitter care	2.4
Multiple types of care	22.5	Family daycare and relative care	13
		Babysitter care and relative care	3.2
		Center care, family daycare and babysitter care	1.5
		Family daycare, babysitter care and relative care	2.2
		Center care, family daycare, babysitter care and relative care	1.2
Unweighted total	120,464		25,187

[a]States included are Alabama, Arizona, Colorado, Delaware, Georgia, Hawaii, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin, Wyoming, and the District of Columbia. These states submitted files containing their full universe of children to the CCDF national data file.

Sources: 2004-2011 Child Care Development Fund (CCDF) administrative records, and 2008-2014 American Community Survey (ACS)

Note: Estimates are weighted.

Table 2

Table 2: Comparison of the Characteristics of Children Who Appear in the CCDF File, Who Appear in the ACS File, and Who Did and Did Not Match between these Two Files[a]

	All Children in the CCDF File[a]		CCDF Children Who Did Not Match to the ACS[a]		Statistical Significance of Point Estimate Difference[b]	CCDF Children Who Matched to the ACS[a]		Statistical Significance of Point Estimate Difference[c]	ACS Children Who Do Not Appear in the CCDF File[a]		All Children in the ACS File[a]	
	Percentage	S.E.	Percentage	S.E.		Percentage	S.E.		Percentage	S.E.	Percentage	S.E.
Sex												
Girl	49.4	0.01	49.4	0.01	*	49.1	0.14	*	48.6	0.03	48.6	0.03
Boy	50.6	0.01	50.6	0.01	*	50.9	0.14	*	51.4	0.03	51.4	0.03
Race/ethnicity												
White, non-Hispanic	31.7	0.00	31.4	0.00	*	42.3	0.14	*	62.3	0.03	61.4	0.03
Black, non-Hispanic	49.5	0.01	49.7	0.01	*	34.6	0.14	*	10.9	0.02	11.9	0.02
Asian, non-Hispanic	0.7	0.00	0.7	0.00	*	0.6	0.02	*	2.9	0.01	2.8	0.01
Other, non-Hispanic	3.1	0.00	3.1	0.00	*	9.2	0.08	*	5.4	0.01	5.6	0.01
Hispanic, any race	14.9	0.00	15.1	0.00	*	13.4	0.10	*	18.5	0.02	18.3	0.02

	All Children in the CCDF File[a]		CCDF Children Who Did Not Match to the ACS[a]		Statistical Significance of Point Estimate Difference[b]	CCDF Children Who Matched to the ACS[a]		Statistical Significance of Point Estimate Difference[c]	ACS Children Who Do Not Appear in the CCDF File[a]		All Children in the ACS File[a]	
	Percentage	S.E.	Percentage	S.E.		Percentage	S.E.		Percentage	S.E.	Percentage	S.E.
Year of birth[d]												
1996						0.1	0.01	*	10.4	0.02	10.0	0.02
1997	3.8	0.00	3.7	0.00	*	6.1	0.07	*	10.5	0.02	10.3	0.02
1998	5.5	0.00	5.4	0.00	*	8.2	0.08	*	10.3	0.02	10.2	0.02
1999	7.2	0.00	7.1	0.00	*	10.6	0.09	*	10.1	0.02	10.1	0.02
2000	9.2	0.00	9.1	0.00	*	12.9	0.10	*	10.0	0.02	10.2	0.02
2001	10.5	0.00	10.3	0.00	*	14.0	0.10	*	9.6	0.02	9.8	0.02
2002	11.6	0.00	11.5	0.00	*	13.1	0.10	*	9.4	0.02	9.6	0.02
2003	12.1	0.00	12.1	0.00	*	11.8	0.09	*	8.1	0.02	8.3	0.02
2004	11.7	0.00	11.8	0.00	*	9.6	0.08	*	6.9	0.02	7.0	0.02
2005	10.7	0.00	10.9	0.00	*	7.0	0.07	*	5.7	0.01	5.7	0.01
2006	9.8	0.00	10.0	0.00	*	4.5	0.06	*	4.4	0.01	4.4	0.01
2007	7.9	0.00	8.1	0.00	*	2.1	0.04	*	2.9	0.01	2.9	0.01
2008						0.0	0.00	*	1.5	0.01	1.4	0.01

	All Children in the CCDF File[a]		CCDF Children Who Did Not Match to the ACS[a]		Statistical Significance of Point Estimate Difference[b]	CCDF Children Who Matched to the ACS[a]		Statistical Significance of Point Estimate Difference[c]	ACS Children Who Do Not Appear in the CCDF File[a]		All Children in the ACS File[a]	
	Percentage	S.E.	Percentage	S.E.		Percentage	S.E.		Percentage	S.E.	Percentage	S.E.
Main type of CCDF-subsidized care												
Center care	63.7	0.00	63.9	0.01	*	59.5	0.14	-	-	-	-	-
Family daycare	22.1	0.00	22.0	0.00	*	24.3	0.12	-	-	-	-	-
Babysitter care	1.7	0.00	1.7	0.00	*	1.6	0.04	-	-	-	-	-
Relative care	12.6	0.00	12.5	0.00	*	14.6	0.10	-	-	-	-	-
Total	96,114,828		95,992,115			122,713			2,640,829		2,763,542	

Table 3

Table 3: Characteristics of Children Observed at Ages 6 to 17 in the Years 2008-2014, by Whether They Previously Received the Child Care Development Fund (CCDF) Subsidy When Aged 6 and Under

	Total		Received CCDF subsidy		Did not receive CCDF subsidy		Statistical Significance of Point Estimate Difference[a]	χ^2 p-value[b]
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.		
Percentages								
Received CCDF-subsidized care[c]	5.3	0.02	-	-	-	-	-	-
Main type of CCDF-subsidized care[c]								-
Center care	3.3	0.02	62.4	0.18	-	-	-	
Family daycare	1.2	0.01	21.9	0.15	-	-	-	
Babysitter care	0.1	0.01	1.7	0.13	-	-	-	
Relative care	0.7	0.00	14.0	0.13	-	-	-	
Ever held back a grade[d]	4.6	0.02	4.7	0.08	4.6	0.02		0.050
Sex[d]								0.037
Girl	48.9	0.04	49.3	0.19	48.9	0.04	*	
Boy	51.1	0.04	50.7	0.19	51.1	0.04	*	

	Total		Received CCDF subsidy		Did not receive CCDF subsidy		Statistical Significance of Point Estimate Difference[a]	χ^2 p-value[b]
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.		
Race/ethnicity[d]								<.001
White, non-Hispanic	55.7	0.04	34.9	0.17	56.8	0.04	*	
Black, non-Hispanic	15.3	0.03	41.5	0.19	13.9	0.03	*	
Asian, non-Hispanic	3.0	0.01	0.5	0.03	3.2	0.01	*	
Other, non-Hispanic	4.9	0.02	7.9	0.10	4.7	0.02	*	
Hispanic, any race	21.1	0.04	15.2	0.14	21.4	0.04	*	
Only child[d]	19.6	0.03	18.9	0.14	19.6	0.03	*	<.001
Income at or below 85% of annual state median[d]	36.0	0.04	66.3	0.18	34.3	0.04	*	<.001
Region[d]								<.001
Northeast	8.1	0.02	4.3	0.07	8.3	0.02	*	
Midwest	26.5	0.03	39.0	0.18	25.8	0.03	*	
South	50.8	0.04	41.9	0.19	51.2	0.04	*	
West	14.7	0.03	14.7	0.13	14.7	0.03		

	Total		Received CCDF subsidy		Did not receive CCDF subsidy		Statistical Significance of Point Estimate Difference[a]	χ^2 p-value[b]
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.		
Year observed[d]								<.001
2008	9.6	0.02	7.3	0.10	9.7	0.02	*	
2009	11.2	0.03	9.5	0.11	11.3	0.03	*	
2010	12.9	0.03	12.6	0.12	12.9	0.03	*	
2011	14.4	0.03	14.4	0.13	14.4	0.03		
2012	16.0	0.03	16.9	0.14	16.0	0.03	*	
2013	17.5	0.03	18.8	0.15	17.4	0.03	*	
2014	18.3	0.03	20.3	0.15	18.2	0.03	*	
Means								
Age[d]	10.4	0.00	9.6	0.01	10.5	0.00	*	<.001
Unweighted Total	2,490,419		120,464		2,369,955			

Table 3: Characteristics of Children Observed at Ages 6 to 17 in the Years 2008-2014, by Whether They Previously Received the Child Care Development Fund (CCDF) Subsidy When Aged 6 and Under

Sources: 2004-2011 Child Care Development Fund (CCDF) administrative records and 2008-2014 American Community Survey (ACS) files from the states of Alabama, Arizona, Arkansas, Colorado, Delaware, Georgia, Hawaii, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin, Wyoming, and the District of Columbia.

Notes: All estimates are weighted.

[a] A * indicates that the difference in a given point estimate is statistically significantly different at at least the .05 level between CCDF recipient and non-recipient children.

[b] χ2 p-value indicates statistical significance of the overall difference in the distribution of characteristics between CCDF subsidy recipients and non-recipients.

[c] Variable measured in CCDF administrative records.

[d] Variable measured in the ACS.

Table 4

Table 4: Characteristics of CCDF Recipient Children Observed at Ages 6 to 17 in the Years 2008-2014, by the Main Type of CCDF-Subsidized Care They Received When Aged 6 and Under

	All CCDF Children		Center care		Family daycare		Babysitter care		Relative care		Statistical Significance of Point Estimate Differences[a]	χ^2 p-value[b]
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.		
Percentages												
Ever held back a grade[c]	4.7	0.08	4.5	0.10	4.5	0.16	5.9	0.67	5.7	0.22	*E, F, G, H*	<.001
Sex[c]												0.673
Girl	49.3	0.19	49.2	0.24	49.7	0.39	48.7	1.42	49.2	0.48		
Boy	50.7	0.19	50.8	0.24	50.3	0.39	51.3	1.42	50.8	0.48		
Race/ethnicity[c]												<.001
White, non-Hispanic	34.9	0.17	34.6	0.22	40.1	0.37	22.4	1.18	29.6	0.43	*D, E, F, G, H, I*	
Black, non-Hispanic	41.5	0.19	41.5	0.24	38.5	0.38	61.9	1.37	43.6	0.48	*D, E, F, G, H, I*	
Asian, non-Hispanic	0.5	0.03	0.6	0.03	0.4	0.04	0.3	0.11	0.7	0.08	*D, E, G, H, I*	
Other, non-Hispanic	7.9	0.10	7.7	0.12	7.9	0.21	4.6	0.55	9.1	0.27	*E, F, H, I*	
Hispanic, any race	15.2	0.14	15.5	0.18	13.2	0.27	10.8	0.86	17.0	0.38	*D, E, F, G, H, I*	
Only child[c]	18.9	0.14	20.7	0.19	17.2	0.29	13.6	0.99	14.2	0.33	*D, E, F, G, H*	<.001
Income at or below 85% of annual state median [c]	66.3	0.18	62.6	0.23	70.2	0.35	75.3	1.24	66.3	0.18	*D, E, F, G, H, I*	<.001

	All CCDF Children		Center care		Family daycare		Babysitter care		Relative care		Statistical Significance of Point Estimate Differences[a]	χ^2 p-value[b]
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.		
Region[c]												<.001
Northeast	4.3	0.07	4.7	0.10	4.3	0.15	3.2	0.49	2.8	0.16	D, E, F, G, H	
Midwest	39.0	0.18	29.9	0.21	54.0	0.39	57.9	1.43	54.1	0.48	D, E, F, G, I	
South	41.9	0.19	52.4	0.24	26.1	0.35	29.3	1.37	21.5	0.42	D, E, F, G, H, I	
West	14.7	0.13	13.0	0.16	15.7	0.29	9.6	0.86	21.6	0.40	D, E, F, G, H, I	
Year observed[c]												<.001
2008	7.3	0.10	7.0	0.12	7.7	0.21	10.1	0.88	8.0	0.26	D, E, F, G, I	
2009	9.5	0.11	9.3	0.14	9.2	0.23	10.7	0.91	11.1	0.31	F, H	
2010	12.6	0.12	12.3	0.16	12.5	0.26	12.4	0.98	14.3	0.35	F, H	
2011	14.4	0.13	14.4	0.17	14.3	0.27	13.3	0.91	14.8	0.35		
2012	16.9	0.14	17.0	0.17	17.1	0.28	17.7	1.08	16.3	0.34		
2013	18.8	0.15	19.1	0.19	18.9	0.30	16.8	1.09	17.7	0.37	E, F, H	
2014	20.3	0.15	20.9	0.19	20.3	0.31	19.1	1.08	17.9	0.36	D, F, H	

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Table 4: Characteristics of CCDF Recipient Children Observed at Ages 6 to 17 in the Years 2008-2014, by the Main Type of CCDF-Subsidized Care They Received When Aged 6 and Under

Means

Age[c]	9.6	0.01	9.5	0.01	9.5	0.02	10.0	0.03	10.4	0.08	*D, E, F, G, H, I*	<.001
Unweighted Total	2,490,419		71,684		29,252		1,956		17,572			

Sources: 2004-2011 Child Care Development Fund (CCDF) administrative records, and 2008-2014 American Community Survey (ACS) files from the states of Alabama, Arizona, Arkansas, Colorado, Delaware, Georgia, Hawaii, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin, Wyoming, and the District of Columbia.

Notes: All estimates are weighted.

[a]Point estimate differences that are statistically significant at at least the .05 level are indicated as follows. D: center care versus family day care; E: center care versus babysitter care; F: center care vs. relative care; G: family day care versus babysitter care; H: family daycare versus relative care; I: babysitter care versus relative care.

[b]χ^2 p-value indicates statistical significance of the overall difference in the distribution of characteristics among CCDF subsidy recipients with different primary care types.

[c] Variable measured in the ACS.

Table 5

Table 5: Logistic Regression Estimates of Having Experienced Grade Retention in Grades K-12 among Children Aged 6-17 in Years 2008-2014

	Model 1			Model 2			Model 3		
	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value
Received CCDF-subsidized care[c]	0.14	0.02	<.001	0.02	0.02	0.32	0.42	0.04	<.001
Main type of CCDF-subsidized care (vs. no CCDF-subsidized care)[c]									
Center care									
Family daycare									
Babysitter									
Relative									
Girl[a]	-0.39	0.01	<.001	-0.39	0.01	<.001	-0.39	0.01	<.001
Race/ethnicity (vs. White, non-Hispanic)[d]									
Black, non-Hispanic	0.39	0.01	<.001	0.24	0.01	<.001	0.26	0.01	<.001
Asian, non-Hispanic	-0.29	0.02	<.001	-0.31	0.02	<.001	-0.30	0.02	<.001
Other, non-Hispanic	0.24	0.02	<.001	0.17	0.02	<.001	0.18	0.02	<.001
Hispanic, any race	0.35	0.01	<.001	0.22	0.01	<.001	0.22	0.01	<.001
Only child[d]	-0.11	0.01	<.001	-0.12	0.01	<.001	-0.12	0.01	<.001
Income at or below 85% of annual state median[d]				0.50	0.01	<.001	0.51	0.02	<.001

	Model 1			Model 2			Model 3		
	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value
Age observed[d]	0.44	0.01	<.001	0.45	0.01	<.001	0.45	0.01	<.001
Age observed, squared[d]	-0.02	0.00	<.001	-0.02	0.00	<.001	-0.02	0.00	<.001
Year observed[d]	-0.04	0.00	<.001	-0.04	0.00	<.001	-0.04	0.00	<.001
Region (vs. Northeast)[d]									
Midwest	0.21	0.04	<.001	0.23	0.04	<.001	0.23	0.04	<.001
South	0.60	0.03	<.001	0.64	0.03	<.001	0.64	0.03	<.001
West	-0.04	0.05	0.361	-0.04	0.05	0.367	-0.04	0.05	0.338
Received CCDF subsidy x Income at or below 85% of annual state median							-0.31	0.04	<.001
Received CCDF subsidy x Race/ethnicity									
CCDF subsidy x Black, non-Hispanic							-0.33	0.04	<.001
CCDF subsidy x Asian, non-Hispanic							-0.05	0.28	0.856
CCDF subsidy x Other, non-Hispanic							-0.20	0.07	0.002
CCDF subsidy x Hispanic, any race							-0.13	0.06	0.026

	Model 4[a]				Model 5			Model 6[b]		
	Coeff.	O.R.	S.E.	p-value	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value
Main type of CCDF-subsidized care (vs. no CCDF-subsidized care)[c]										
Center care	0.08	1.08	0.03	0.005	-0.02	0.03	0.548	0.43	0.04	<.001
Family daycare	0.19	1.21	0.04	<.001	0.06	0.04	0.138	0.41	0.09	<.001
Babysitter	0.26	1.30	0.11	0.023	0.13	0.11	0.253	0.42	0.42	0.317
Relative	0.24	1.28	0.04	<.001	0.10	0.04	0.014	0.45	0.10	<.001
Girl[a]	-0.39		0.01	<.001	-0.39	0.01	<.001	-0.39	0.01	<.001
Race/ethnicity (vs. White, non-Hispanic)[d]										
Black, non-Hispanic	0.39		0.01	<.001	0.24	0.01	<.001	0.26	0.01	<.001
Asian, non-Hispanic	-0.30		0.02	<.001	-0.31	0.02	<.001	-0.30	0.02	<.001
Other, non-Hispanic	0.25		0.02	<.001	0.17	0.02	<.001	0.18	0.02	<.001
Hispanic, any race	0.35		0.01	<.001	0.22	0.01	<.001	0.22	0.01	<.001
Only child[d]	-0.11		0.01	<.001	-0.12	0.01	<.001	-0.12	0.01	<.001
Income at or below 85% of annual state median[d]					0.50	0.01	<.001	0.51	0.02	<.001

	Model 4[a]				Model 5			Model 6[b]		
	Coeff.	O.R.	S.E.	p-value	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value
Age observed[d]	0.44		0.01	<.001	0.45	0.01	<.001	0.45	0.01	<.001
Age observed, squared[d]	-0.02		0.00	<.001	-0.02	0.00	<.001	-0.02	0.00	<.001
Year observed[d]	-0.04		0.00	<.001	-0.04	0.00	<.001	-0.04	0.00	<.001
Region (vs. Northeast)[d]										
Midwest	0.23		0.04	<.001	0.23	0.04	<.001	0.23	0.04	<.001
South	0.60		0.03	<.001	0.64	0.03	<.001	0.64	0.03	<.001
West	-0.05		0.05	0.345	-0.04	0.05	0.359	-0.05	0.05	0.329
Type of CCDF subsidized care x Income at or below 85% of annual state median										
Center care x Income ≤85% annual state median								-0.36	0.05	<.001
Family day care x Income ≤85% annual state median								-0.25	0.09	0.008
Babysitter care x Income ≤85% of national median								-0.24	0.31	0.439
Relative care x Income ≤85% annual state median								-0.30	0.09	0.00

	Model 4[a]				Model 5			Model 6[b]		
	Coeff.	O.R.	S.E.	p-value	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value
Type of CCDF subsidized care x Race/ethnicity										
Center care x Black, non-Hispanic								-0.40	0.05	<.001
Family day care x Black, non-Hispanic								-0.30	0.08	0.000
Babysitter care x Black, non-Hispanic								-0.07	0.29	0.803
Relative care x Black, non-Hispanic								-0.18	0.10	0.062
Center care x Asian, non-Hispanic								0.13	0.36	0.719
Family day care x Asian, non-Hispanic								-1.18	1.39	0.395
Babysitter care x Asian, non-Hispanic								-4.53	0.90	<.001
Relative care x Asian, non-Hispanic								-0.04	0.89	0.964
Center care x Other, non-Hispanic								-0.24	0.08	0.005
Family day care x Other, non-Hispanic								-0.17	0.15	0.255
Babysitter care x Other, non-Hispanic								-1.18	0.78	0.131
Relative care x Other, non-Hispanic								-0.07	0.17	0.679
Center care x Hispanic, any race								-0.11	0.07	0.104
Family day care x Hispanic, any race								-0.17	0.12	0.139
Babysitter care x Hispanic, any race								-0.37	0.55	0.506
Relative care x Hispanic, any race								-0.14	0.13	0.276
Intercept	77.73		5.74	<.001	76.33	5.94	<.001	76.32	5.93	<.001
N=2,490,419										