

# The impact of early childhood care and education on maternal time use in Egypt

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# Motivation: Unequal unpaid care work

- Women's to men's time spent in unpaid care work is 5:1 in Egypt (Atallah and Hesham 2024)
- Only 15% of women are employed vs. 69% of men (Krafft, Assaad, and McKillip 2024)
- Redistributing care responsibilities to the market through care services can *potentially* reduce gender disparities in time use and promote women's employment
  - Early childhood care and education (ECCE) for ages 0-8 is one such service
- Globally, ECCE improves maternal labor market outcomes (Halim, Perova, and Reynolds 2023)
  - Women spend less time in unpaid care work when they have ECCE (Angeles et al. 2012; Calderón 2014; Fang and Miao 2024).

# Testing the potential of ECCE to decrease women's care work, increase their employment in Egypt

- Using ELMPS 2023 data
  - First wave with 24-hour time use diary
- Regression discontinuity design (RDD) approach
  - Based on the cutoff age for starting primary school
    - Earlier iterations tested pre-primary, but no jump at the cutoff
- Findings:
  - ECCE does not reduce time spent in unpaid care work
  - ECCE does not increase mother's employment rates
  - ECCE may slightly shift timing/types of care work

# Outcomes and key covariate

- Time use module (24-hour time diary)
  - Primary and secondary activities in fifteen-minute increments
- Outcomes:
  - Direct caregiving (primary or secondary)
  - Indirect caregiving (primary or secondary)
    - Specific types of indirect caregiving (food, cleaning, shopping, and others)
  - Total (any) time spent in caregiving (primary or secondary, direct or indirect)
  - Time spent in employment from time use
  - Employment (binary variable)
- Key covariate: ECCE
  - Children under age six, question in the roster on nursery, child care, or kindergarten
  - Children 6+ individual questionnaire education section, ever been to school, level (incl. pre-primary)
  - ECCE is defined as pre-primary/kindergarten or primary

# Gendered division of labor

Time (average hours per day) in care work and employment, by sex and age of the youngest child in the household, ever-married respondents aged 15+



- **Men** at most

- ~0.2 hrs/day direct care
- ~1.0 hrs/day indirect care
- Regardless of whether or what age of children

- **Women** spend far more time in care

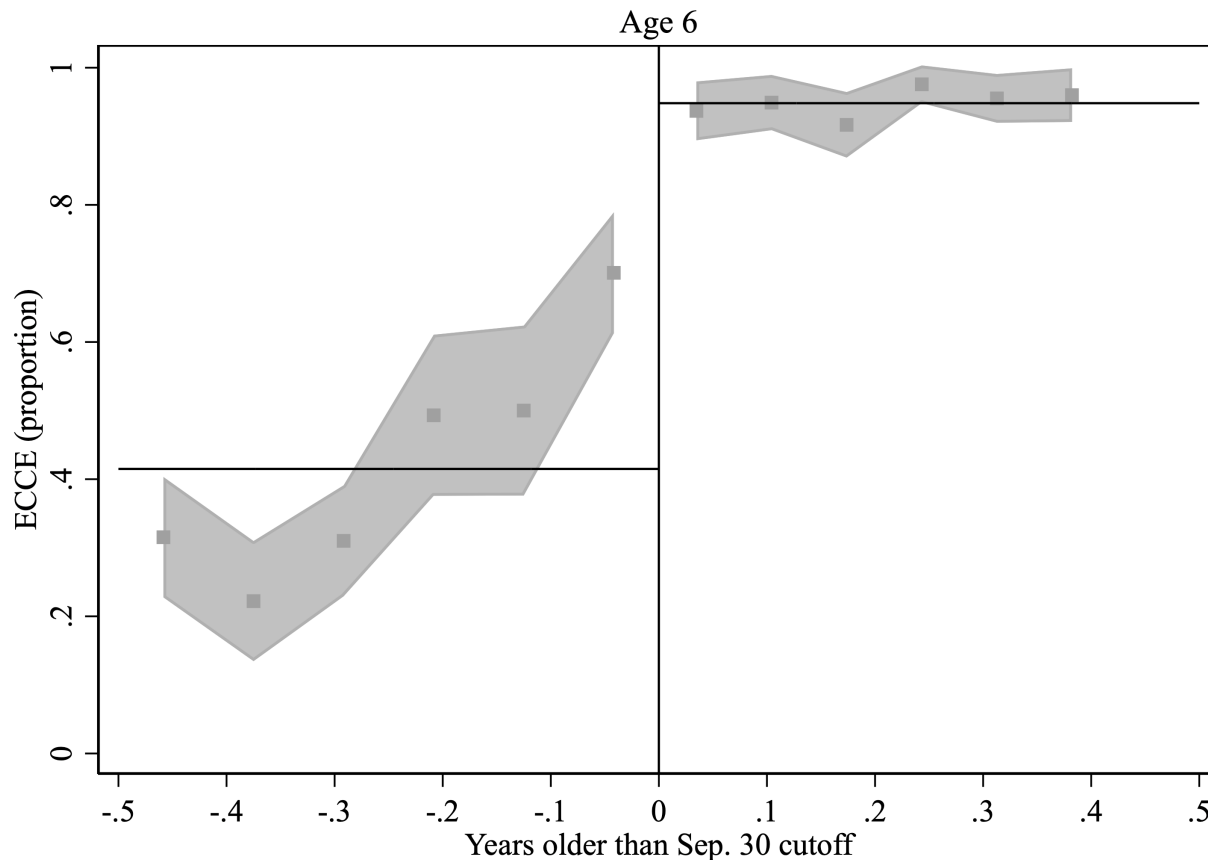
- Direct care decreases as children age (and enter school?)
- Not much difference in indirect care (~5 hrs/day) when children present

# Methods: Fuzzy regression discontinuity design overview

- The primary “cutoff” for enrollment based on the child’s age on September 30
  - Must be age six by September 30 to begin primary school
- Focus on “age six group” – sample six months above and below that cutoff on Sept. 30 of 2023 (5.5-6.5 years)
  - Not necessarily their age at time of fielding
  - ELMPS 2023 has birth month and year to facilitate this
- “Assignment variable” – years relative to being age six on September 30 (-0.5 to 0.5, cutoff at zero)
- Based on women’s birth history, can map children’s characteristics onto mother’s outcomes
- Cutoff not mandatory – “fuzzy” RDD (FRDD)
- FRDD estimator ratio of jump in the outcome to jump in the probability of treatment around the cutoff (parallel two-stage least squares)
  - Select polynomial functional form among intercept, linear, quadratic options based on smallest Akaike information criterion

# Jump in ECCE around the cutoff

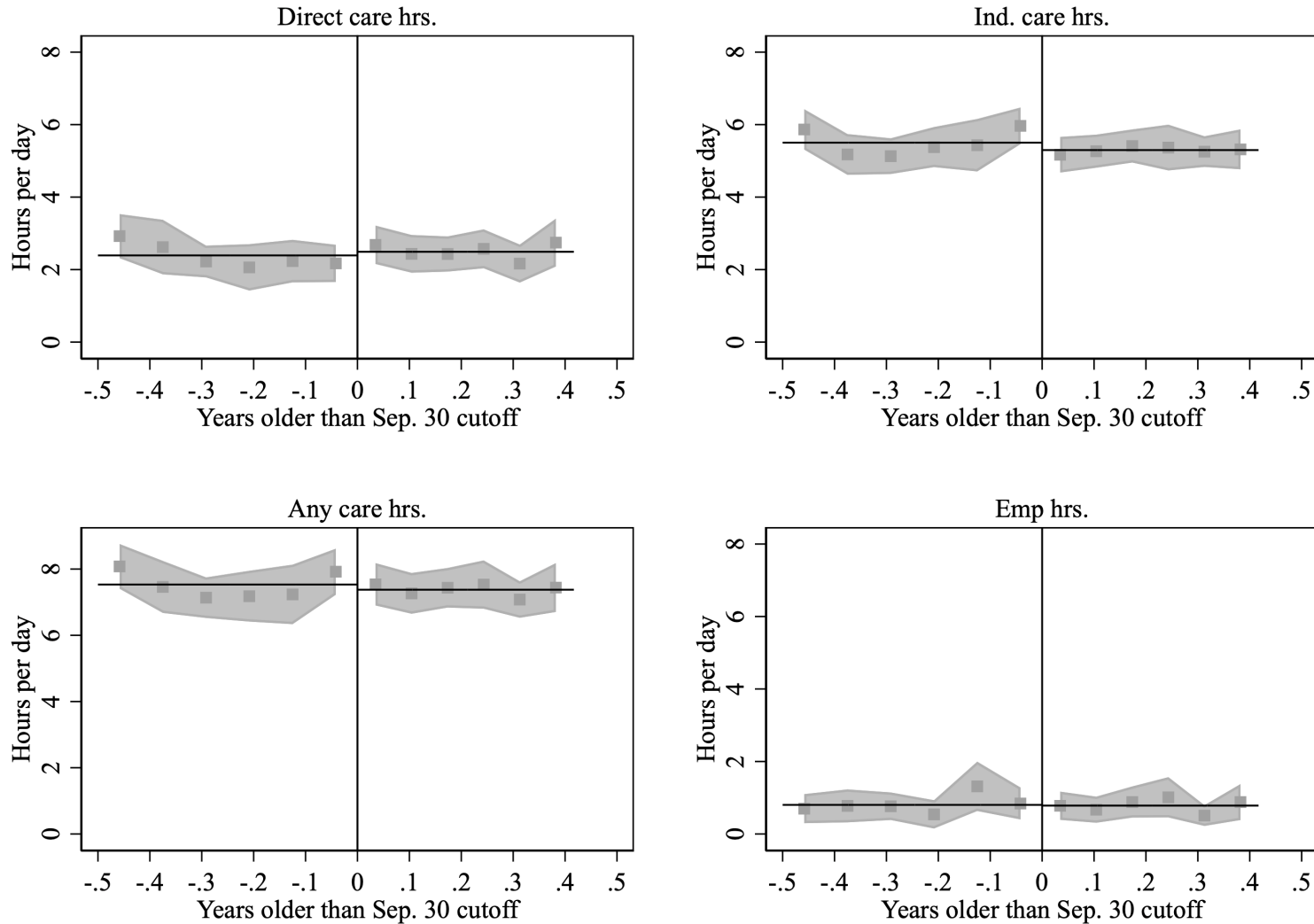
Children's ECCE (proportion), by child's age in years from September 30, mothers with child in age six group



- **Clear jump** around the cutoff
- From an average of 40% in ECCE below the cutoff to more than 90% in ECCE above the cutoff

# No impact of ECCE eligibility on maternal time use

Maternal time use outcomes (average hours per day), by child's age in years from September 30, mothers with child in age six group

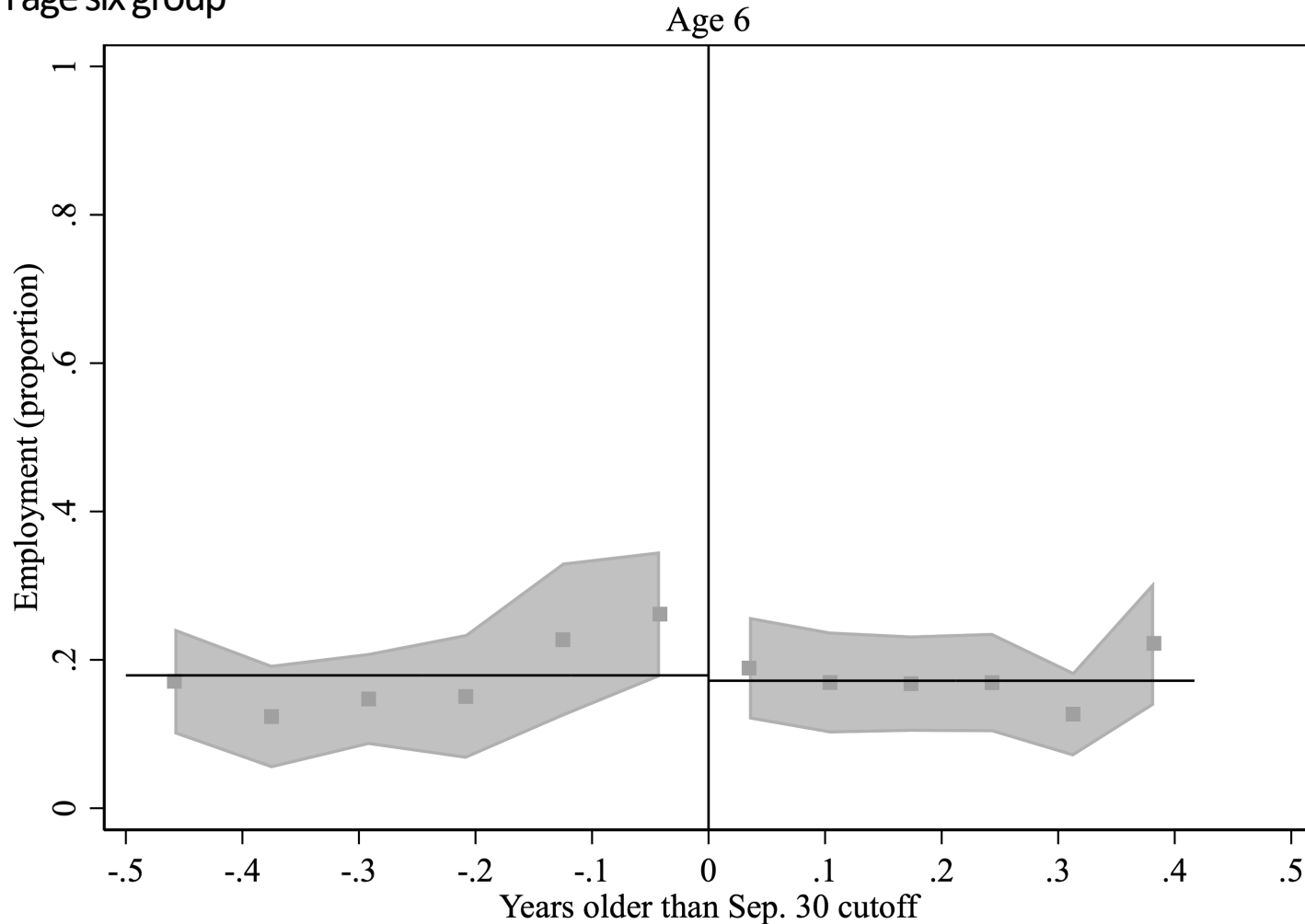


Notes: Points are bin means (months). Gray band is confidence interval around bin means. The line is an intercept-only fit at each side of the



# No impact of ECCE eligibility on maternal employment rate

Maternal employment (proportion), by child's age in years from September 30, mothers with child in age six group



Notes: Points are bin means (months). Gray band is confidence interval around bin means. The line is an intercept-only fit at each side of the cutoff.

# No impact of ECCE on outcomes in FRDD models

FRDD intercept models of maternal outcomes, mothers with child in age six group

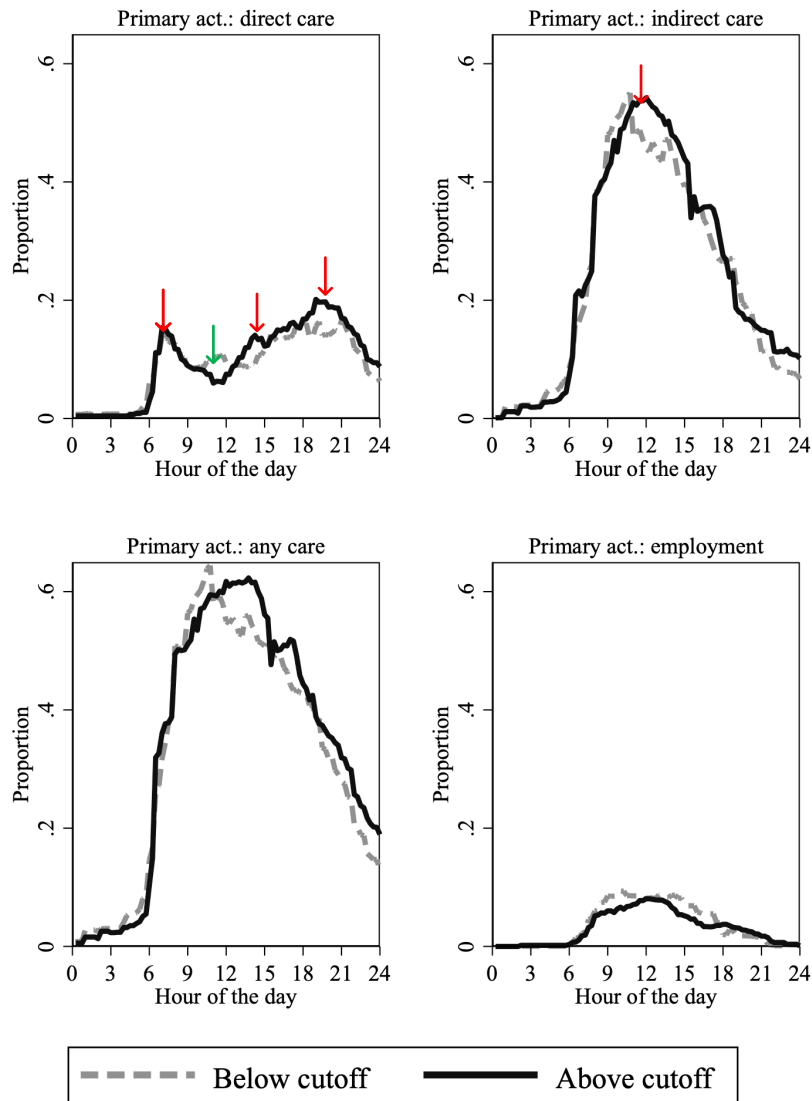
	Direct care hrs.	Indirect care hrs.	Any care hrs.	Employment hrs.	Employed
ECCE	0.190	-0.386	-0.292	-0.037	-0.014
First	0.531***	0.531***	0.531***	0.531***	0.533***
N (Obs.)	1303	1303	1303	1303	1308
N right	730	730	730	730	733
N left	573	573	573	573	575

Notes: \*p<0.05; \*\*p<0.01; \*\*\*p<0.001

- FRDD intercept models all have **strong first stage**
- Treatment effect estimate **similar to figures**: None of these impacts is statistically significant.

# Small shifts in time of day

Proportion of time spent on various primary activities by below/above age six September 30 cutoff, mothers with child in age six group



- For households with eligible children
  - Slight increase in morning direct care
  - Decrease during the peak of the school day
  - Increase later in the day
- Interpretation: Prepare, drop off, pick up, and help with schoolwork
- Indirect care “fills in” time when direct care decreased
- Employment is more concentrated within school hours

# Sensitivity and heterogeneity analyses

Showing no difference from main result (no impact of ECCE)

- Reduced form models (intercept, linear, and quadratic)
- Bandwidth adjustment (half the bandwidth)
- Linear and quadratic models
- 2SLS FRDD intercept models
- Inclusion of control variables
  - Women: education level, age group, being ever married, and whether their husband is present in the household
  - Spouse: education level and age group
- School vs. non-school hours
  - School hours: 8:00 am to 12:15 pm on weekdays
  - Non-school hours: any time outside of this window on both weekdays and weekends
- Primary vs. secondary activities
- Focusing solely on when the age six group child is her youngest child

# Sensitivity and heterogeneity analyses

Showing some shifts in timing/type

- Weekdays vs. weekends
  - Significant reduction in indirect care hours on weekdays
  - Insignificant increase in direct care hours on weekdays, indirect care hours on weekends
- Different types of indirect care activities
  - ECCE leads to a significant reduction in time spent on food/cooking, specifically

# Conclusions: Expectations vs. evidence

- Expectation: Services such as ECCE will reduce the time women spend in unpaid care work, increase employment
  - This is true in many other contexts (Halim, Perova, and Reynolds 2023)
  - For example, ECCE in Mexico reduced mothers' time in child care by 1.7 hours per day, increased employment rate by 18 percentage points, increased hours/week of employment by 7 hours (Angeles et al. 2012)
- New evidence: In Egypt, ECCE (children starting primary) does not decrease time spent in unpaid care work nor raise employment rates/hours

# Conclusions: Why does ECCE not change maternal outcomes in Egypt?

- ECCE design
  - Primary school days are short, some other studies link short hours to null or negative effects (Medrano 2009; Krafft and Lassassi 2023), especially in low female employment contexts
- Gender norms
  - Strong gender norms around male breadwinner/female homemaker just shift any freed time into other care activities
  - Primary school creates additional care work for mothers, given gendered divisions of care (e.g., drop off, pick up, help with schoolwork).
  - Women may still face binding constraints on time use and employment related to gender norms around employment (reservation working conditions/availability of decent jobs)
- This research is consistent with other research from Egypt showing:
  - Child care subsidies + employment services did not improve mother's employment outcomes in Egypt (Caria et al. 2022)

**Thank you!**