

DISENTANGLING MATERNAL DECISIONS CONCERNING BREASTFEEDING AND PAID EMPLOYMENT

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Presenter Disclosures

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“No relationships to disclose”

Motivation

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- Importance of breastfeeding in developed countries is increasingly emphasized
- National U.S. health objectives call for exclusive breastfeeding for at least 6 months and breastfeeding duration for at least 12 months
- More U.S. mothers of infants are participating in the workforce
- More mothers of infants are combining market work and breastfeeding
- Postpartum return to work is associated with lower rates of initiation and shorter duration of breastfeeding in the U.S.
- Conflict between economic incentives from labor market and health benefits (to both mother and child) from breastfeeding

Objective

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- Opportunity cost of breastfeeding
 - ▣ Breastfeeding is time-consuming
 - ▣ It is in direct competition with other uses of a woman's time, including market work

- Most studies find a negative relationship between probability of breastfeeding and postpartum return to work
 - ▣ However, most studies use single equation estimation method
 - ▣ Most studies assume employment is exogenous to infant feeding practices
 - ▣ Data limitations

- We use simultaneous equations method to study
 - ▣ The decision process regarding work leave and breastfeeding durations
 - ▣ The decision process regarding work effort and breastfeeding intensity

Infant Feeding Practices Study II

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- ❑ Conducted by the FDA in collaboration with the CDC from May 2005 to June 2007
- ❑ Longitudinal study of women from late pregnancy through their infant's first year of life - 12 surveys (primarily mail)
 - 1 prenatal questionnaire
 - 1 telephone interview near the time of the infant's birth
 - 1 neonatal questionnaire at infant age 1 month
 - 9 questionnaires sent about every 4 weeks during infant ages 2 to 7 months and then approximately every 7 weeks until infant age 12 months
- ❑ 3033 qualified women completed the neonatal questionnaire and were enrolled in this study

Data Limitations

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- Sample is probably not reflective of the average characteristics of the U.S. population
 - ▣ Higher average education
 - ▣ Higher income

- Return to same employer
 - ▣ Not known

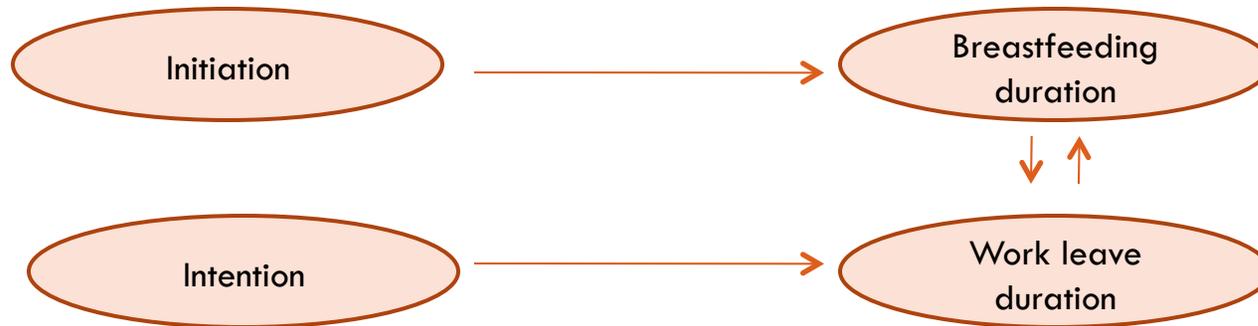
Sample

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- Not enough information if due date was more than 3 months away or did not complete neonatal questionnaire
 - 16 cases deleted (3017 remaining)
- Conditioning on pre-birth market work
 - 1506 cases deleted (1511 remaining) if no prenatal work activity
 - Prenatal work = working for pay at any time from the 3 months before pregnancy until last trimester; does not have to be full-time worker
- 468 women did not initiate breastfeeding and/or worked pre-birth but did not intend to return to work - Excluded
 - 1049 remaining
 - Have full information (on all variables of interest) for only
 - $N = 743$ women for duration models
 - $N = 649$ women for month 3 intensity model
 - $N = 586$ women for month 6 intensity model

Selection Bias?

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- Breastfeeding initiation and work leave duration
 - ▣ Work leave duration is shorter for those who do not initiate (11.3 wks vs. 13.5 wks)
- Intention to return to work and breastfeeding duration
 - ▣ Breastfeeding duration is shorter for those who return to work (25.3 wks vs. 31.4 wks)
- But, we do not find any selection bias

Models

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- Breastfeeding and work leave durations
 - Duration of any breastfeeding (27.3 wks)
 - Duration of exclusive breastfeeding (7.8 wks)
 - Duration away from work (13.5 wks)

- Breastfeeding intensity and work effort at months 3
 - Number of breastfeedings at infant age 3 months (4.7/day)
 - Number of breastfeedings at infant age 6 months (3.2/day)

- Breastfeeding intensity and work effort at months 6
 - Number of hours of market work at infant age 3 months (3.7 hrs/day)
 - Number of hours of market work at infant age 6 months (4.6 hrs/day)

Independent Variables and Method

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- Independent variables
 - Background – age, education, race, marital status, residence
 - Parity – number of other children and experience with breastfeeding
 - Birth and breastfeeding – if mother was breastfed, embarrassment, childbirth complications, problem breastfeeding, attended breastfeeding class
 - Prenatal job characteristics – self-employed, part-time work, available work leave, supportive at work, satisfaction with work, contribution to family income, occupation type

- Method - Bivariate Tobit
 - Control for unobserved effects
 - Possibility of both activities continuing at the end of the surveys
 - Missing data due to drop outs
 - Observe intensity or effort only if participating in activity

Work Leave and Breastfeeding Durations

- Decision process is fully simultaneous
- Longer leave from work increases duration of breastfeeding
 - ▣ Every week of work leave increases breastfeeding duration by 2.6 weeks
- Duration of breastfeeding is not as significant determinant of work leave
 - ▣ Every week of breastfeeding increased work leave duration by only a fourth of a week
- Institutional constraints surrounding the decision to return to work are more inflexible
 - ▣ Many women opt for longer durations of breastfeeding by managing to prolong their leave from the labor market
 - Significant covariates
 - > HS education, previous experience with breastfeeding, and self-employment status were positively related to duration of breastfeeding
 - Women with > HS education returned to work approximately a week sooner
 - Women with one other child who was breastfed returned to work approximately 2 weeks sooner

Work Leave and Exclusive Breastfeeding Durations

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- Decision process is recursive rather than fully simultaneous
 - ▣ An extra week's time away from market work increases the duration of exclusive breastfeeding by four-fifths of a week
 - ▣ Duration of exclusive breastfeeding is not a significant determinant of work leave
- Similar results regarding effect of education, previous breastfeeding experience and self-employment on work leave and breastfeeding as before
- In addition,
 - ▣ Women from western states of the U.S. were likely to exclusively breastfeed longer, while women from southern states were likely to exclusively breastfeed for a shorter duration
 - ▣ Embarrassment with breastfeeding and problems with breastfeeding inhibited the duration of exclusive breastfeeding

Work Effort and Breastfeeding Intensity

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- Fully simultaneous processes (both months 3 and 6)
- Work effort constraints breastfeeding intensity
 - The number of daily breastfeedings (including expressed milk feedings) was significantly reduced as the number of daily work-hours increased
 - A woman working approximately 3 hrs/day when her child was 3 months old, for example, gave her infant about 1 less breast-milk feeding/day, on average, than a woman who was not working
 - Larger trade-off at infant age 6 months
- Number of daily breastfeedings also influenced the daily hours of work
 - 1 extra feeding/day reduced work effort by 1 hr/day in month 3, and by 0.5 hr/day in month 6
- Women with higher education, married women, women with multiple children who were breastfed, and women who were breastfed themselves when they were infants, reported higher breastfeeding intensity

Comparison with IFPS I Results

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- Average duration of
 - Breastfeeding = 21.53 weeks
 - Work leave = 12.89 weeks
- Intensity of
 - Breastfeeding in month 3 = 3.33, in month 6 = 1.83 (number/day)
 - Work in month 3 = 21.81 h/week, in month 6 = 24.25 h/week
- Recursive relationship between work and infant breastfeeding decisions (Roe et al., 1999)
 - Work fully dominated the decision process
 - Decisions surrounding the duration of breastfeeding and the intensity of breastfeeding had no significant impact on the work decisions
- Reasons for different results
 - Maternity leave policies - the Family and Medical Leave Act
 - Other changes in the U.S. work place
 - Availability and efficacy of portable breast pumps

From a public health policy perspective...

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- Work dominates the decision to *exclusively* breastfeed
- Self-employed women breastfeed and exclusively breastfeed longer, and more number of times till month 3
- Those who did not attend any breastfeeding class report lower number of feeds/day in month 3
- Breastfeeding (duration and frequency) is lower in the south
- Efforts aimed at achieving goals that involve extending the duration and intensity of breast feeding among U.S. women may also impact U.S. labor markets
 - ▣ For example, a policy that successfully improves the average mother's comfort with the act of breastfeeding and increases her breastfeeding by 4 weeks would delay her re-entry to paid labor by 1 week and remove approximately 3.7 hours of paid labor per day from the labor market
 - ▣ Conversely, a policy that extends a newborn mother's work leave by 1 week will extend her breastfeeding duration by more than 2.5 weeks