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Unintended Pregnancy and Breast-Feeding Behavior

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ABSTRACT

Objectives. This study assessed the effect of unintended pregnancy on breast-feeding behavior.

Methods. All women delivering a live birth between January 1, 1995, and July 31, 1996 (n = 33 735), in the 15-county central New York region were asked whether they had intended to become pregnant and their breast-feeding plans.

Results. Women with mistimed pregnancies, and pregnancies that were not wanted were significantly less likely to breast-feed than were women whose pregnancies were planned. After adjustment for confounding variables and contraindications for breast-feeding, the odds ratios of not breast-feeding remained significant.

Conclusions. Promoting breast-feeding among women with unintended pregnancies is important to improve health status. (*Am J Public Health.* 1997;87:1709–1711)

Introduction

Breast-feeding has been shown to have numerous health benefits for both women and their infants.[1] Despite the documented benefits of breast-feeding, rates of breast-feeding continue to be low among certain population subgroups.[1,2] Effective breast-feeding promotion strategies need to account for special interventions designed to address the needs of these selected subpopulations.[3] To date, no study has examined the effect of unintended pregnancy on breast-feeding behavior.

A woman's pregnancy intentions have been shown to be associated with numerous health-related behaviors and birth outcomes.[4] For women whose pregnancies were not planned, therefore, breast-feeding is particularly important. First, breast milk may provide protection from morbidity for which unplanned infants are at risk. Second, the act of breast-feeding may stimulate mother–infant bonding and subsequently help the mother and infant overcome the difficulties associated with parenting among women with unplanned pregnancies. We hypothesized that recently parturient women whose pregnancies were mistimed or not wanted would be less likely to breast-feed their infants.

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TABLE 1—Pregnancy Intention and Breast-Feeding Behavior among Women Giving Birth in Central New York State, 1995 through 1996

Pregnancy Category	No. (%)	Odds Ratio for Not Breast-Feeding (95% Confidence Interval)	
		Crude	Adjusted[a]
Any breast-feeding			
Total (n = 27 700)	16 450 (59.4)	...	...
Planned (n = 19 604)	12 384 (63.2)	Referent	Referent
Unplanned (n = 8 096)	4 066 (50.2)	1.70 (1.61, 1.79)	1.15 (1.09, 1.22)
Mistimed (n = 6 243)	3 247 (52.0)	1.58 (1.49, 1.68)	1.10 (1.03, 1.17)
Unwanted (n = 1 853)	819 (44.2)	2.17 (1.96, 2.39)	1.35 (1.22, 1.50)
Exclusive breast-feeding			
Total (n = 27 700)	11 721 (42.3)	...	...
Planned (n = 19 604)	9 082 (46.3)	Referent	Referent
Unplanned (n = 8 096)	2 639 (32.6)	1.78 (1.69, 1.89)	1.29 (1.21, 1.37)
Mistimed (n = 6 243)	2 103 (33.7)	1.70 (1.60, 1.81)	1.26 (1.18, 1.35)
Unwanted (n = 1 853)	536 (28.9)	2.12 (1.91, 2.36)	1.41 (1.26, 1.57)

[a]Adjusted for education, race, Medicaid coverage, maternal age (<20 years), and any tobacco use during pregnancy.

Methods

All women delivering a live birth in central New York State between January 1, 1995, and July 31, 1996 (n = 33 735), were asked (prior to postpartum discharge) whether they had intended to become pregnant and their plans for breast-feeding their new infant. Intentions of pregnancy were ascertained by means of the question format of the Pregnancy Risk Assessment Monitoring System of the Centers for Disease Control and Prevention.[5] Pregnancies were classified, according to Institute of Medicine categories, as not wanted, mistimed (the woman wanted to become pregnant later), or planned.[4] Unintended pregnancies were defined as those in the not wanted and mistimed categories.

Breast-feeding was ascertained by asking the woman what feeding method she expected to adopt once she left the hospital. Specifically, women were asked, "Which of the following best describes how you plan to feed your baby during the next few months?" The options presented were (1) you plan on breast-feeding only, (2) you plan on bottle feeding only, (3) you plan on breast-feeding and bottle feeding, and (4) you don't know. Breast-feeding women were classified as those who reported that they planned on exclusively breast-feeding their infant, planned on both breast-feeding and bottle feeding, or planned on breast-feeding of any kind. This information was captured and transmitted through the Regional Perinatal Data System, a hospital-based birth registry covering the 15-county central New York area, which includes 23 birth hospitals.[6]

Breast-feeding rates by pregnancy intention status were compared via 2 × 2 tables and chi-square tests. Crude odds ratios (ORs) were used in determining the magnitudes of the associations between intentions of pregnancy and breast-feeding. Data were available regarding both breast-feeding status and intentions of pregnancy status for 27 700 women. Women with Medicaid funding and with less than a high school education were more likely to be missing information ($P < .05$). Variables identified as potential confounders included age, education, race, Medicaid coverage, infant death, neonatal intensive care unit admission, viral infection (sexually transmitted diseases, other viral infections), alcohol use in pregnancy, tobacco use in pregnancy, and drug use in pregnancy (cocaine/crack, heroin, marijuana, methadone).[7] While neonatal intensive care unit admission in itself is not a contraindication to breast-feeding,[8] we did not have the ability to further control for various neonatal morbidities associated with admission that could indeed contraindicate breast-feeding.

We conducted a forward stepwise logistic regression[9] to calculate adjusted odds ratios, controlling for variables remaining significant and for which adjustment was necessary: education (high school graduate vs nongraduate), maternal age less than 20 years (yes vs no), race (Black vs not Black), Medicaid coverage (yes vs no), and any tobacco usage in pregnancy (yes vs no). Odds of not breast-feeding for each pregnancy intention category were calculated; women with intended pregnancies served as the referent group. Odds of not exclusively breast-feeding were similarly calculated, excluding referent group women who indicated they would both breast-feed and bottle feed.

Results

Overall, 29.2% of the births in the central New York region were to women who did not intend to become pregnant (22.5% were mistimed, 6.6% were not wanted). The overall breast-feeding rate for the region was 59.4% (including 42.8% breast-feeding exclusively and 16.6% both breast-feeding and bottle feeding).

As Table 1 indicates, 63.2% of the women whose pregnancies were planned indicated they would breast-feed their infants, as compared with 50.2% of the women whose pregnancies were not planned. The breast-feeding rate among women whose pregnancies were mistimed was 52.0%, and the rate among women who did not want to be pregnant at all was 44.2%. After adjustment for confounders that remained in the logistic model, the odds ratio of not breast-feeding remained significantly elevated among women whose pregnancies were unplanned (adjusted OR = 1.15, 95% confidence interval [CI] = 1.09, 1.22), mistimed (adjusted OR = 1.10, 95% CI = 1.03, 1.17), or unwanted (adjusted OR = 1.35, 95% CI = 1.22, 1.50). A similar significant association was observed between exclusive breast-feeding and pregnancy intentions.

Discussion

Breast-feeding is an important protective intervention promoting the health of women and children. As shown here, women whose pregnancies were not intended are at risk of not breast-feeding their infants.

Our study, however, is limited in that information was available only for breast-feeding intent at discharge, as reported by the women. Actual breast-feeding behavior could vary from what is reported at discharge. Furthermore, the use of "any

breast-feeding" as an analytic category may dilute the true association between intentions of pregnancy and breast-feeding because of the heterogeneous nature of that category. In our study, however, the same associations were observed for both any breast-feeding and exclusive breast-feeding.

This study highlights the importance of identifying women with unplanned pregnancies and specifically targeting that group for breast-feeding promotion interventions. Finally, the study provides yet further evidence that children born to women who did not intend to become pregnant are at higher risk than other children of not having sufficient resources—in this instance, the benefits of breast-feeding—for healthy development.[4] □

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Plasma Polychlorinated Biphenyl Levels in Dutch Preschool Children Either Breast-Fed or Formula-Fed during Infancy

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ABSTRACT

Objectives. This study examined the influence of lactational and in utero exposure to polychlorinated biphenyls (PCBs) on plasma PCB levels in children.

Methods. Plasma PCB levels were measured in 173 children at 3.5 years, of whom 91 were breast-fed and 82 were formula-fed in infancy.

Results. Median plasma PCB levels were 3.6 times higher in breast-fed children (0.75 μg/L) than in their formula-fed peers (0.21 μg/L). Breast-feeding period and breast-milk PCB levels were important predictors for PCB levels in the breast-fed group. For children in the formula-fed group, PCB levels were significantly related to their maternal plasma PCB levels.

Conclusions. PCB levels in Dutch preschool children are related to transfer of maternal PCBs; therefore, strategies should be aimed at reducing maternal PCB body burden. (*Am J Public Health.* 1997;87:1711–1714)

Introduction

Polychlorinated biphenyls (PCBs), polychlorinated dibenzo-para-dioxins (PCDDs), and polychlorinated dibenzofurans (PCDFs) are widespread environmental contaminants.[1] In Dutch infants, subtle signs of neurological dysfunctioning,[2] small delays in psychomotor development,[3] and alterations in thyroid hormone[4] and immunological status[5] during infancy are associated with perinatal exposure to PCBs and PCDDs/PCDFs.

Human exposure to PCBs and PCDDs/PCDFs is mainly through the food chain, for example, dairy products, fish, and meat.[6,7] The Netherlands is among the countries with the highest environmental levels of PCBs and PCDDs/PCDFs as measured in breast milk.[8] In breast-fed infants, daily PCB and PCDD/PCDF intake is 20 times higher than the tolerable daily intake of 10 pg toxic equivalent per kilogram per day.[6,9]

We report plasma PCB levels measured in Dutch children at 3.5 years and the contribution of in utero and lactational exposure to PCBs. Furthermore, we relate plasma PCB levels in these children to their dietary intake of PCBs and PCDDs/PCDFs and to their body fat.

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