

Pediatricians and the Promotion and Support of Breastfeeding

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Objectives: To survey pediatricians on their breastfeeding knowledge, attitudes, and practices and to compare these results with those of a 1995 study.

Design: Cross-sectional follow-up survey.

Setting: The Periodic Survey of Fellows survey conducted by the American Academy of Pediatrics.

Participants: The survey was completed by 875 pediatrician members of the American Academy of Pediatrics from November 1, 2003, through May 21, 2004.

Main Outcome Measures: Pediatricians' recommendations on management, opinions about the benefits and promotion of breastfeeding, and relationship to personal breastfeeding experience were compared with the results of the 1995 survey.

Results: Compared with the results of the 1995 survey, in 2004, pediatricians were less likely to believe that the benefits of breastfeeding outweigh the difficulties or inconvenience (adjusted odds ratio, 0.60; 95% confidence

interval, 0.47-0.76), and fewer believed that almost all mothers are able to succeed. More pediatricians in 2004 reported reasons to recommend against breastfeeding. Pediatricians in 2004 were more likely to recommend exclusive breastfeeding (adjusted odds ratio, 1.55; 95% confidence interval, 1.23-1.94) and follow supportive hospital policies. Respondents with personal breastfeeding experience were 2.3 times more likely to recommend supportive policies (adjusted odds ratio, 2.3; 95% confidence interval, 1.74-3.08) in 2004 than in 1995. Those with no personal breastfeeding experience were also slightly more likely in 2004 to recommend these policies (adjusted odds ratio, 1.49; 95% confidence interval, 1.09-2.03).

Conclusions: Although pediatricians seem better prepared to support breastfeeding, their attitudes and commitment have deteriorated. Personal experience mitigates poor attitudes and seems to enhance breastfeeding practices among those surveyed.

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THE AMERICAN ACADEMY OF Pediatrics (AAP) has affirmed breastfeeding as the preferred method of infant feeding, providing ideal nutrition and optimal health outcomes.¹ In 1995, a survey of pediatrician's attitudes and practices related to breastfeeding was conducted and the results were analyzed.² Since then, pediatricians have seen an explosion of research further delineating health benefits related to breastfeeding and exploring methods of breastfeeding promotion and support. During this period, overall breastfeeding rates in the United States have risen at the time of delivery from 59% in 1995 to 74% in 2004 and at 6 months from 22% in 1995 to 42% in 2004.^{3,4} Nevertheless, few US mothers follow recommendations to exclusively breastfeed; in 2004, 51% exclusively

breastfed at 7 days and only 14% exclusively breastfed for 6 months.⁴

Key changes have occurred during the decade since 1995, resulting in increased awareness and promotion of breastfeeding by the AAP, the US government, and multiple organizations throughout the world.⁵⁻⁷ The AAP Section on Breastfeeding has organized programs for physicians to enhance office-based promotion of breastfeeding, the Breastfeeding Promotion in Pediatricians' Office Practices Program I and the Breastfeeding Promotion in Physicians' Office Practices Programs II and III, funded by the Health Resources and Services Administration Maternal and Child Health Bureau. These initiatives have a central goal to increase the knowledge, attitudes, and practices of physicians to promote and manage breastfeeding. The more recent initiatives in-

clude goals to enhance culturally competent breastfeeding care and to introduce breastfeeding education and training in pediatric, obstetrics and gynecology, and family medicine residency programs.⁸

Given the increased programs devoted to breastfeeding in the last decade and the increase in overall rate of breastfeeding in the United States, we expected to find improvements in pediatricians' promotion and support of breastfeeding. This study examined changes in pediatricians' opinions and counseling practices related to breastfeeding, recommendations for breastfeeding practice, and self-disclosed breastfeeding management. In addition, the influence of personal breastfeeding experience on opinions and management of breastfeeding was examined.

METHODS

This study is based on data gathered using the AAP Periodic Survey of Fellows. Since 1987, the Periodic Survey of Fellows has been conducted 3 or 4 times annually on current topics in pediatrics. Each survey is sent to a unique random sample of nonretired members of the AAP who reside in the United States; those selected to participate in a Periodic Survey of Fellows are not selected again for at least 4 years. The AAP presently has about 60 000 members representing an estimated 80% of US board-certified pediatricians.

Both the Periodic Survey of Fellows conducted in 2004 and that conducted in 1995 were 8-page, self-administered, forced-choice questionnaires developed by the AAP Department of Research working with the leadership team of the AAP Section on Breastfeeding. The 2004 survey was mailed to 1640 members, and 5 follow-up mailings were conducted to recontact nonrespondents from November 1, 2003, through May 21, 2004. A total of 875 questionnaires were received, for a response rate of 53.4%. The 1995 survey was mailed to 1602 members and followed by 4 follow-up mailings between July 1, 1995, and November 29, 1995. A total of 1132 questionnaires were received, for a response rate of 70.7%. Each questionnaire was accompanied by an introductory letter from the Executive Director of the AAP and a business reply return envelope. The AAP institutional review board approved both surveys.

Questions on pediatricians' breastfeeding recommendations to mothers, counseling and management practices, opinions on issues about breastfeeding benefits and promotion, and hospital breastfeeding policies asked on the 1995 survey were replicated on the 2004 survey, enabling trends in these areas to be examined. In addition, the 2004 survey included questions directed to aspects of breastfeeding care, with the inclusion of questions related to cultural beliefs, diet, and use of herbal agents.⁹ On both surveys, questions about hospital breastfeeding policies and demographic data were to be answered by all survey recipients. Demographic data included age, sex, resident training status, practice location (self-defined by respondents as urban inner city, urban not inner city, suburban, or rural), practice setting (defined as solo or 2-person practice, group practice, or staff model health maintenance organization, and hospital or clinic practice or medical school), time spent in general pediatrics (defined as <50% of time spent in a subspecialty area), and geographic region (Northeast, Midwest, South, and West, classifications used by the National Center for Health Statistics). Both surveys also included personal questions about number of children and personal experience (self or spouse) with breastfeeding. Breastfeeding counseling, recommendations, and opinion questions were directed only to respondents who indicated that they provided primary care

to children from birth to 2 years (675 pediatrician respondents in 2004 and 832 pediatrician respondents in 1995).

Data are presented as percentage of respondents or mean percentage. For analysis of selected questions, pediatricians were subdivided on the basis of whether any of their own children were breastfed exclusively or were given formula supplements (breastfeeding experience) and whether their children were never breastfed or whether they had never had children (no breastfeeding experience). Odds ratios (ORs) were used to compare differences in response by survey years for pediatrician characteristics and selected breastfeeding recommendations. Multivariate logistic regression was used to examine the likelihood of supporting selected breastfeeding promotion and benefit statements in 2004 and 1995 after controlling for breastfeeding experience and to compare differences in response by survey year after controlling for sex, time spent in general pediatrics, total hours worked per week, and percentage of patients aged birth to 2 years. For all analyses, confidence intervals (95% CIs) are given.

RESULTS

CHARACTERISTICS OF RESPONDENTS AND THEIR PATIENTS

In 2004, 875 of 1640 pediatricians surveyed responded, compared with 1133 of 1602 respondents in 1995. To assess how well the samples represented AAP membership at the time of the surveys, respondent characteristics of these surveys were compared with those of the 6 periodic surveys conducted just before each Periodic Survey of Fellows. The 53.4% response rate was comparable to that for other more recent surveys. Many more pediatricians with experience in breastfeeding, either themselves or their spouses, participated in the 2004 survey (**Table 1**).

BREASTFEEDING RECOMMENDATIONS

Pediatricians in both 2004 and 1995 reported a low rate of prenatal visits for their patients younger than 2 years; the mean percentage of parents seen during a prenatal visit was 10%. Although most of the pediatricians in both years reported discussing breastfeeding if parents were seen during the prenatal visit, the percentage decreased to 86.6% in 2004 from 93.2% in 1995 (OR, 0.97; 95% CI, 0.96-0.99).

Both surveys questioned pediatricians about reasons for recommending against breastfeeding or discontinuing breastfeeding (**Table 2**). A higher percentage of pediatricians in 2004 vs 1995 recommended that mothers discontinue breastfeeding for conditions compatible with breastfeeding. For example, pediatricians in 2004 were more than 5 times more likely to recommend against breastfeeding for mothers who were considered too immature or because of the time required and demands of breastfeeding.

COMPARISON WITH AAP POLICY STATEMENT

Pediatricians' recommendations were compared with several recommendations in the AAP policy statement on breastfeeding and human milk available at the time of the 2004 survey¹⁰ (**Table 3**). In general, more pediatricians in 2004 than in 1995 gave recommendations that were consistent

Table 1. Comparison of Practice and Personal Characteristics of Respondents, 1995 and 2004

Characteristics	No. (%)		OR/ Δ (95% CI)
	2004 (n=875)	1995 (n=1133)	
Female	500 (57.7)	510 (45.5)	1.64 (1.37 to 1.96)
Pediatric resident	130 (14.9)	145 (13.0)	1.17 (0.91 to 1.51)
Age, mean, y	42.3	42.1	0.22 (0.71 to 1.15)
Pediatricians with children	597 (69.4)	787 (71.7)	0.89 (0.74 to 1.09)
Breastfeeding experience among pediatricians with children ^a			
Breastfed exclusively for any duration ^b	424 (72.0)	294 (37.4)	4.31 (3.42 to 5.43)
Breastfed not exclusively, ie, both breastfed and formula fed ^c	150 (25.5)	437 (55.8)	0.27 (0.21 to 0.34)
Never breastfed, formula fed exclusively	105 (17.8)	197 (25.1)	0.64 (0.50 to 0.84)
Time in general pediatrics, mean %	71.2	66.8	4.36 (0.61 to 8.12)
Total hours worked per week, mean	48.8	52.9	-4.50 (-6.11 to -2.89)
Practice			
Solo or 2-physician	140 (16.3)	205 (18.4)	0.86 (0.67 to 1.11)
Group	407 (47.4)	440 (39.5)	1.38 (1.14 to 1.66)
Hospital, clinic, or medical school	312 (36.4)	469 (42.1)	0.79 (0.65 to 0.95)
US region			
Northeast	224 (25.7)	275 (24.3)	1.07 (0.88 to 1.32)
Midwest	209 (23.9)	237 (21.0)	1.19 (0.96 to 1.47)
South	294 (33.7)	391 (34.6)	0.96 (0.80 to 1.16)
West	146 (16.7)	228 (20.2)	0.80 (0.63 to 1.00)
Estimated patients aged birth to 2 y, %	43.2	37.5	5.70 (3.51 to 7.88)
Ethnicity, %			
White, non-Hispanic	52.5	...	...
Black	21.8	...	...
Hispanic	18.7	...	...
Native American/Alaskan Native	1.0	...	...
Asian	5.2	...	...
Hawaiian/Pacific Islander	0.8	...	...

Abbreviations: CI, confidence interval; OR, odds ratio; Δ , difference, unstandardized coefficient for means; ellipses, data not collected.

^aMultiple response possible.

^bFor this statistical comparison, we combined 2 items, "Breastfed exclusively for <6 months" and "Breastfed exclusively for \geq 6 months," asked in 2004 (43.6% and 36.8%, respectively) to compare with the item "Breastfed exclusively," asked in 1995. The total of the percentages for the 2 items asked in 2004 (43.6% and 36.8%) does not equal 72% because pediatricians who had a child exclusively breastfed for less than 6 months and a child exclusively breastfed for 6 months or longer were counted only once.

^cIn 2004, the item was listed as "Breastfed any amount (other than exclusively)"; in 1995, the item was "Both breastfed and formula fed."

Table 2. Reasons Why Pediatricians Recommend That Mothers of Full-term Infants Not Breastfeed or Discontinue Breastfeeding, 2004 vs 1995 (Percentage of Respondents)

Reason	2004 (n=866)	1995 (n=1122)	AOR (CI)
Mother is HIV infected or drug abuser ^a	96.9	90.7	1.37 (9.93-2.01)
Medications taken by mother may be harmful to infant	95.7	89.6	3.09 (1.88-5.08)
Mother opposes breastfeeding	67.2	58.1	1.46 (1.15-1.86)
Mother has infected nipples	31.5	20.2	2.01 (1.53-2.63)
Mother is too young or immature	25.9	6.7	5.18 (3.59-7.49)
Mother's milk supply seems inadequate	24.1	19.3	1.40 (1.06-1.85)
Inconvenience or time demands of breastfeeding	14.6	3.7	5.19 (3.25-8.29)
Infant has slow weight gain	11.5	17.4	0.56 (0.40-0.79)
Healthy infant with jaundice	8.4	8.1	1.33 (0.88-1.99)
Mother has cracked nipples	7.2	5.6	1.70 (1.06-2.72)

Abbreviations: AOR, adjusted odds ratio (included in the model: survey year, sex, personal breastfeeding experience, practicing general pediatrics \geq 50% of time, mean hours worked per week, and percentage of patients aged birth to 2 years); CI, confidence interval.

^aIn 2004, "Mother is HIV-positive" and "Mother is a drug abuser" were listed separately (96.9% and 90.4% responding, respectively); these 2 items were combined for comparison with 1995 data.

with AAP policy. Only 38% of pediatricians reported scheduling the first postnatal office visit for breastfed infants within the first 5 days after birth. The most common period of follow-up for a breastfed neonate was 7 days after delivery (35% of respondents), followed by 14 days (10% of respondents).

Significantly more pediatricians delayed follow-up for formula-fed neonates; 23% reported scheduling within the first 5 days, 32% scheduled at 7 days, and 23% scheduled at 14 days; the remaining 22% scheduled the first follow-up visits after 14 days. Half of the pediatricians surveyed in

Table 3. Counseling and Recommendations About Breastfeeding, 2004 vs 1995 (Percentage of Respondents)^a

Recommendation	2004	1995	OR (CI)
Feeding during the first month^b	(n=655)	(n=797)	
Formula feeding exclusively	2.9	2.0	1.46 (0.74-2.86)
Breastfeeding exclusively	74.0	64.9	1.55 (1.23-1.94)
Breastfeeding with formula supplementation	7.5	12.9	0.55 (0.38-0.78)
No recommendation	15.6	20.2	0.73 (0.56-0.96)
Initial hospital orders recommend supplemental breastfeeding^c	(n=650)	(n=785)	
Offer water or glucose water before initiating breastfeeding	4.3	9.6	0.43 (0.27-0.67)
Offer water, glucose water, or formula after each nursing	7.5	11.6	0.62 (0.43-0.89)
Offer no water, glucose water, or formula	88.2	78.9	2.01 (0.49-2.67)
Nighttime feedings in hospital^d	(n=651)	(n=777)	
Keep the infant in the mother's room throughout	70.8	51.0	2.33 (1.87-2.91)
Let nurses give nighttime feedings by bottle	3.2	4.9	0.65 (0.38-1.12)
Keep infant in nursery, bring to mother for feedings	26.0	44.1	0.44 (0.35-0.60)
First postnatal office visit scheduled within 5 d after birth, % ^e			
Breastfed infants	38	...	
Formula-fed infants	23	...	
Introduction of supplements and vitamins in exclusively breastfed infants before 5 mo of age routinely recommended	(n=657)	(n=787)	
Semisolid foods	29.2	29.7	0.98 (0.78-1.22)
Iron ^f	18.0	22.0	0.78 (0.59-1.01)
Multivitamins ^{g,h}	28.7	41.2	0.57 (0.46-0.72)
Vitamin D ⁱ	50.9	...	
Fluoride ^j	8.8	34.0	0.19 (0.14-26)

Abbreviations: CI, confidence interval; OR, odds ratio; ellipses, data not collected.

^aSuperscripts b through i refer to recommendations in the 1997 American Academy of Pediatrics Policy Statement.¹⁰

^bInitial breastfeeding should be exclusive without supplements.

^cBreastfed infant should not receive any supplements unless medically indicated.

^dContinuous rooming-in throughout the day and night facilitates breastfeeding.

^eIf discharged less than 48 hours after delivery, all breastfeeding mothers and their newborn infants should be seen when their infants are 2 to 4 days of age.

^fIron supplementation before 6 months of age should be for selected breastfeeding infants including those who were born preterm, had low birth weight, have hematologic disorders, or had inadequate iron stores at birth.

^gAdditional multivitamins are not recommended in breastfeeding infants.

^hVitamin D should be given to infants whose mothers are vitamin D-deficient or those not exposed to adequate sunlight. This recommendation changed in 2003, as follows: All breastfed infants should receive 200 IU of oral vitamin D drops daily beginning during the first 2 months and continuing until the daily consumption of vitamin D-fortified formula or milk is 500 mL.¹¹

ⁱFluoride should not be provided during the first 6 months.

^jIn 1995, the category was "vitamins."

2004 routinely recommended vitamin D for breastfeeding infants, and one-fifth of pediatricians never recommended vitamin D for breastfeeding infants.

HOSPITAL POLICIES ABOUT BREASTFEEDING

More pediatricians in 2004 than 1995 believed they worked in hospitals that applied to become a baby-friendly hospital, even though only 12% of respondents were familiar with the "Ten Steps to Successful Breastfeeding" guidelines.¹² Pediatrician compliance with the "Ten Steps to Successful Breastfeeding" guidelines was determined for 8 of the 10 steps in which comparisons could be made, and data were analyzed to compare the results of the 2004 and 1995 surveys (**Table 4**).

EDUCATION, TRAINING, AND CONFIDENCE IN BREASTFEEDING MANAGEMENT

More pediatricians in 2004 than in 1995 reported receiving education about the management of breastfeeding while in medical school or during residency (67.6% vs 57.9%; OR, 1.02; 95% CI, 1.01-1.02). Fewer than half (44% in both survey years) of the pediatricians surveyed have at-

tended continuing education programs or grand rounds on breastfeeding topics, whereas most pediatricians have read articles about the management of breastfeeding (88% in 2004 and 90% in 1995). Most pediatricians were interested in receiving more education focused on the management of breastfeeding; however, interest has declined since 1995 (79.7% vs 85.9%; OR, 0.98; 95% CI, 0.97-0.99).

Despite acknowledging the need for additional education and training, pediatricians reported high levels of confidence in managing common breastfeeding problems. Furthermore, 87% of pediatricians in 2004 reported confidence in addressing parents' questions about breastfeeding. In contrast, only 37% of the respondents reported teaching mothers breastfeeding techniques at least 5 times during the previous year. Most pediatricians in 2004 reported counseling mothers about lactation problems (56%), observing breastfeeding in the hospital or clinic (61%), and counseling mothers about infant feeding choices (81%) at least 5 times during the previous year. Although most pediatricians reported answering telephone inquiries about breastfeeding (76%), many pediatricians deferred breastfeeding questions to office staff members or other health care professionals. Significantly more pediatricians in 2004 than 1995 reported not knowing how their staff members were trained in breastfeeding management (22.1% vs 13.0%; OR, 1.02; 95% CI,

Table 4. Comparison of Pediatricians' Advice and Their Hospitals' Policies to the "Ten Steps to Successful Breastfeeding" and AAP Policy on Breastfeeding and the Use of Human Milk, 2004 vs 1995 (Percent Compliance)

Compliance With "Ten Steps to Successful Breastfeeding"	2004 (n=852)	1995 (n=1081)	OR (CI)
Maintain written hospital policy that is available to all staff ^a	40.3	38.4	1.08 (9.90 to 1.30)
Train all health care staff to follow policy	...	...
Inform all pregnant women about breastfeeding so they can make an informed decision, mean % of parents seen in prenatal visits	10.4	11.3	-9.92 (-2.96 to 1.13)
Breastfeed within 1 h of delivery	67.0	43.5	2.64 (2.13 to 3.27)
Demonstrate proper breastfeeding technique to mothers	37.4	...	
Give nothing but breast milk unless medically indicated	74.0	64.9	1.55 (1.23 to 1.94)
Rooming-in 24 h/d	70.8	51.0	2.33 (1.87 to 2.91)
Unrestricted breastfeeding	67.7	59.0	1.46 (1.17 to 1.81)
No pacifiers in hospital	34.2	23.2	1.72 (1.37 to 2.16)
Establish support groups for parents within the community	47.6	46.9	1.03 (0.84 to 1.27)

Abbreviations: AAP, American Academy of Pediatricians; CI, confidence interval; OR, odds ratio; ellipses, data not collected.

^aAlthough 40.3% report that their hospital maintains a policy, 53.3% do not know if their hospital has a policy (an increase from 1995, when 46.3% were unaware of their hospital policies about breastfeeding; $P < .001$).

Table 5. Pediatricians' Opinions on Issues of Breastfeeding Promotion and Benefits, 2004 vs 1995 (Percentage of Respondents)

Opinion (% Agree) ^a	2004 (n=669)	1995 (n=817)	AOR (CI)
Almost any mother can be successful at breastfeeding if she keeps trying	62.2	69.2	0.75 (0.59-0.95)
Breastfeeding and formula feeding are equally acceptable methods for feeding infants	45.1	45.0	1.02 (0.81-1.28)
Benefits of breastfeeding outweigh the difficulties or inconvenience mothers may encounter	58.0	68.2	0.60 (0.47-0.76)
In the long run, formula-fed babies are just as healthy as breastfed babies	26.0	34.5	0.70 (0.55-0.90)
Advice from family and friends is the most important influence in the decision to breastfeed	55.1	72.6	0.50 (0.40-0.64)
Pediatricians have little influence on whether mothers initiate breastfeeding	5.8	18.2	0.27 (0.18-0.40)

Abbreviations: AOR, adjusted odds ratio (included in the model: survey year, sex, personal breastfeeding experience, practicing general pediatrics $\geq 50\%$ of time, mean hours worked per week, and percentage of infants aged birth to 2 years); CI, confidence interval.

^aResponses are given on a scale of 1 (agree) to 3 (disagree). Disagree and neutral responses are not given.

1.01-1.04), and fewer pediatricians in 2004 participated in training their staff (57.4% vs 63.7%; 0.99; 0.98-0.10).

ATTITUDES ABOUT BREASTFEEDING

In 2004 compared with 1995, fewer pediatricians thought the benefits of breastfeeding outweigh any difficulties or inconvenience (58.0% vs 68.2%; adjusted OR [AOR], 0.60; 95% CI, 0.47-0.76), and fewer believed that almost all mothers are able to be successful (**Table 5**). In contrast, fewer pediatricians in 2004 than in 1995 thought formula-fed babies were just as healthy as breastfed babies.

PERSONAL EXPERIENCE WITH BREASTFEEDING

Compared with 1995, in 2004, almost twice as many pediatricians had personal experience with exclusive breastfeeding (Table 1). Among pediatricians who cared for children younger than 2 years, 64% had some breastfeeding experience. Pediatricians with any personal experience with breastfeeding, either themselves or their spouses, were much more likely to counsel new mothers about infant feeding choices and teach new mothers breastfeeding techniques such as latching on and positioning the infant at the breast (**Table 6**).

Personal experience had less effect on pediatricians' attitudes about breastfeeding. Those with experience were

more likely to disagree that formula feeding and breastfeeding are equally acceptable methods of feeding. Nevertheless, even among respondents with breastfeeding experience, compared with 1995, fewer reported in 2004 that almost any mother can be successful at breastfeeding and that the benefits of breastfeeding outweigh the difficulties or inconvenience.

Pediatricians' recommendations regarding the "Ten Steps to Successful Breastfeeding" guidelines were analyzed after controlling for personal experience with breastfeeding. Overall, 66% of pediatricians in 2004 recommended at least 4 of the 8 steps queried compared with 49% of those in 1995 (AOR, 2.03; 95% CI, 1.66-2.49). Among respondents with personal breastfeeding experience, 71.1% in 2004 vs 51.5% in 1995 recommended at least 4 steps (AOR, 2.3; 95% CI, 1.74-3.08). Those with no breastfeeding experience were also slightly more likely in 2004 to recommend at least 4 steps (AOR, 1.49; 95% CI, 1.09-2.03).

COMMENT

Despite improvement in some areas, more pediatricians in 2004 than in 1995 were likely to have negative opinions and attitudes about breastfeeding. Although knowledge about optimal duration of exclusive and overall breastfeed-

Table 6. Breastfeeding Management and Opinions on Breastfeeding Promotion Based on Personal Experience^a (Percentage of Respondents)

Breastfeeding Management in 2004 ^b	Personal Experience (n=423)	No Experience (n=236)	AOR (CI)
Confident or very confident			
Adequately address mother's concerns about breastfeeding ≥5 Times in the last year	95.0	72.0	6.01 (3.40-10.64)
Manage breastfeeding problems	89.0	63.5	3.54 (2.28-5.50)
Observed breastfeeding	66.2	53.4	1.97 (1.36-2.86)
Counseled an expectant or new mother about infant feeding choices	86.5	72.0	2.00 (1.29-3.13)
Taught a new mother breastfeeding techniques	46.8	20.4	3.98 (2.63-6.03)
Counseled mothers about breastfeeding problems	66.0	38.4	2.76 (1.93-3.96)
Asked a breastfeeding mother whether she is using herbal agents	24.2	16.3	1.62 (1.05-2.52)
Considered cultural beliefs before observing breastfeeding	29.3	19.4	1.57 (1.04-2.37)
Taught a new mother how to use a breast pump	10.4	2.1	6.07 (2.29-16.07)
Opinions on Breastfeeding in 2004 (% Agree)^{b,c}	Personal Experience (n=419)	No Experience (n=235)	
Almost any mother can be successful at breastfeeding if she keeps trying	64.0	57.9	1.18 (0.83-1.69)
Breastfeeding and formula feeding are equally acceptable methods of feeding infants	41.0	53.2	0.64 (0.45-0.91)
The benefits of breastfeeding outweigh any difficulties or inconvenience mothers may encounter	60.3	53.6	1.30 (0.92-1.84)
In the long run, formula-fed babies are just as healthy as breastfed babies	24.1	29.4	0.74 (0.50-1.09)

Abbreviations: AOR, adjusted odds ratio (variables included in the model: sex, personal breastfeeding experience, practicing general pediatrics ≥50% of time, mean hours worked per week, and percentage of infants aged birth to 2 years); CI, confidence interval.

^aPersonal experience includes all respondents who had any experience with breastfeeding; no personal experience included respondents with no children and those who exclusively formula fed. Data for both subgroups were similar, and the results were combined.

^bPediatricians reporting that they were either confident or very confident (combined) or provided certain care 5 times or more during the last year.

^cResponses are given on a scale of 1 (agree) to 3 (disagree). Disagree and neutral responses are not given.

ing improved during the period studied, more pediatricians recommended that mothers of full-term infants not breastfeed or that they discontinue breastfeeding for unnecessary reasons. Even more pediatricians in 2004 than in 1995 reported issues such as immaturity of the mother, inconvenience, low milk supply, and infected nipples as reasons to recommend against breastfeeding. Fewer pediatricians in 2004 believed that the benefits of breastfeeding outweighed the difficulties or inconvenience. These trends reflect pediatricians' ambivalence about whether breastfeeding goals can be met and a readiness to recommend formula feeding over breastfeeding.¹³ The decline in attitudes may reflect poor knowledge about how to overcome barriers and challenges or may simply reflect the opinion that the risks of not breastfeeding are outweighed by any concerns about the sustainability of breastfeeding. The AAP activities aimed to enhance office-based promotion of breastfeeding resulted in improvement in pediatrician knowledge and practices but were ineffective in changing attitudes. These activities may have used the wrong model or strategy to change attitudes and commitment to breastfeeding. Our results suggest that pediatricians may be less likely to provide effective breastfeeding promotion despite improved knowledge. These data are particularly concerning because respondents in 2004 had more personal breastfeeding experience, a factor known to be associated with increased breastfeeding attitudes and practices.

Evidence is good that educating mothers about how to breastfeed and enhancing their knowledge and skills will increase the likelihood of breastfeeding.¹⁴ Our data show that few pediatricians had the opportunity to promote breastfeeding in the prenatal period; however, there may be missed opportunities in the immediate postpartum setting as well. Many pediatricians do not function

in the role of the person educating mothers about breastfeeding and have little experience in the clinical setting with breastfeeding management.¹⁵ There is evidence that a short training program for practicing physicians followed by breastfeeding support through an early, routine, preventive visit might contribute to improving breastfeeding outcomes.¹⁶ However, many pediatricians in 2004 did not follow the AAP recommendation for a 3- to 5-day follow-up visit for breastfeeding neonates. Given that only 38% of pediatricians surveyed in 2004 scheduled early postpartum visits, education and management of breastfeeding during this critical period would be missed. If education of primary care practitioners is to be successful, early postnatal follow-up visits must be scheduled.

Personal experience continues to have a tremendous effect on the advice to breastfeed and the clinical experience with breastfeeding management.^{2,17} Having personal breastfeeding experience in 2004, even more than in 1995, was associated with more optimal breastfeeding management. Given the changing demographics of pediatricians and new work hours for pediatric residents, more pediatricians may be starting families early in their careers and attending to the needs of their children.^{18,19} Providing worksite accommodations for residents and young pediatricians to facilitate a positive experience with breastfeeding may be one method to enhance future attitudes and skills about breastfeeding. Pediatricians may also serve as role models for mothers contemplating infant feeding decisions.

Pediatricians' opinions about breastfeeding promotion have deteriorated since 1995, but having personal experience is an attenuating factor. Poor attitudes about whether mothers can be successful in breastfeeding are in conflict with pediatricians' recommendations for

exclusive breastfeeding. Mothers may hear messages such as “Exclusive breastfeeding is best, but if you can’t . . .” and assume that they will be unable to meet their infant’s needs. Competing demands make it difficult for many mothers to exclusively breastfeed. The cultural norm in the United States continues to be breastfeeding in combination with formula feeding, with fewer than 1 in 6 infants being exclusively breastfed at 6 months.⁴ Given that only 37% of pediatricians in 2004 had children who were breastfed exclusively for the first 6 months, it is not surprising that many of the pediatricians surveyed doubted that mothers could be successful if they tried. Therefore, knowing the AAP recommendation for exclusive breastfeeding is only the first step in being able to support mothers to breastfeed according to AAP policy. Creative strategies need to be developed to enable more pediatricians, regardless of personal experience, to adopt practice behaviors that support exclusive breastfeeding.

Pediatricians need to become comfortable promoting and supporting breastfeeding in many cultural groups.⁹ In our study, respondents reported that about one-fifth of their patients younger than 2 years are black and one-fourth include Hispanics and Asians. These data indicate even more diversity than reported in the 2000 US census, in which 64% of the pediatric population were white, 15% were black, 16% were Hispanic, 4% were Asian, and 1% of other race/ethnicity.²⁰ Despite this diversity, our data indicate that pediatricians rarely consider the cultural beliefs of mothers when observing and evaluating breastfeeding. The rate of breastfeeding among the US black population is lower than overall US rates.^{3,4} More recent studies suggest that foreign-born mothers have higher rates of breastfeeding compared with overall rates in the United States.^{21,22} On closer examination, these groups are most likely in the United States to supplement breastfeeding their first child but exclusively breastfeed subsequent children.²² Thus, acculturation has an immediate negative effect on breastfeeding; however, there is opportunity to restore the cultural norm to exclusively breastfeed. Cultural competency is important to provide optimal breastfeeding care and may attenuate the negative effects of acculturation.²³

Certain limitations in this comparison of surveys should be mentioned. Although more than half of the pediatricians surveyed in 2004 completed the survey, this was substantially lower than the 71% response rate in 1995. Despite the lower response rate, we believe there is a lack of bias based on the comparisons with other Periodic Surveys of Fellows conducted at about the same time. Although the effect of nonresponse bias is unknown, a recent analysis of AAP surveys suggests that such bias is minimal.²⁴ There is also the limitation of not knowing how pediatricians support breastfeeding in practice beyond what is self-reported in this survey. Many of the pediatricians surveyed provide direct patient care less than 40 hours per week and may have limited contact with families and mothers who may be breastfeeding. Despite these limitations, the comparison of surveys can aid organizations in developing future educational programs and policies on breastfeeding. This study reaffirms the need to continue efforts to enhance pediatri-

cians’ knowledge, skills, and, in particular, attitudes to promote and support breastfeeding and may provide evidence that new strategies need to be developed.

Since the 2004 survey was conducted, additional resources and educational materials have been developed to aid physician support for breastfeeding, including the *Breastfeeding Handbook for Physicians*, a joint publication by the AAP and the American College of Obstetricians and Gynecologists.²⁵ Multiple educational sessions were offered at national meetings of the AAP, American College of Obstetricians and Gynecologists, American Academy of Family Physicians, and other organizations. In addition, there were 2 large national campaigns to promote breastfeeding targeted to low-income and black mothers, groups that continue to have the lowest breastfeeding initiation and continuation rates.²⁶ After the 2004 survey, a multispecialty breastfeeding residency curriculum was implemented as a component of the final phase of the Breastfeeding Promotion in Physicians’ Office Practices Program III.⁸ Future studies may be able to demonstrate whether these activities affected pediatricians’ knowledge, attitudes, and practices. Pediatricians may be more likely to effectively promote and support breastfeeding if they are surrounded by a culture in which breastfeeding is the norm and they are affected early in their training years with knowledge, skills, and personal support. With continued educational efforts by organizations that promote and support breastfeeding, we anticipate enhanced attitudes and skills among pediatricians in the future.

CONCLUSIONS

This study provides evidence for the need to continually enhance pediatricians’ knowledge, attitudes, and practices about breastfeeding. Practical solutions must be developed to improve pediatricians’ beliefs so that mothers can successfully meet their breastfeeding goals.

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Announcement

Topic Collections. The Archives offers collections of articles in specific topic areas to make it easier for physicians to find the most recent publications in a field. These are available by subspecialty, study type, disease, or problem. In addition, you can sign up to receive a Collection E-Mail Alert when new articles on specific topics are published. Go to <http://archpedi.ama-assn.org/collections> to see these collections of articles.

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Correction

Data Errors in Tables. In the article titled “Pediatricians and the Promotion and Support of Breastfeeding,” by Feldman-Winter et al, published in the December issue of the *Archives* (2008;162[12]:1142-1149), a total of 3 errors were introduced in Tables 2 and 4 on pages 1144 and 1146, respectively. On page 1144, in Table 2 the confidence interval in the first line should have been (0.93-2.01). On page 1146, in Table 4 the confidence interval in the first line should have been (0.90-1.30), and the odds ratio in the second line should have been -0.92.