CULTURAL VALUES AND BIOMEDICAL KNOWLEDGE: CHOICES IN INFANT FEEDING

ANALYSIS OF A SURVEY

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Abstract—This paper presents a study of 313 parturient women and considers their choices to bottle or breast feed. It examines demographic and cultural factors statistically and focuses on the effect of knowledge or ignorance of benefits of either method of infant feeding. Most women are found to have some biomedical knowledge of the benefits of breast feeding. The choice of bottle or breast feeding is closely associated with several demographic factors and a number of cultural ideas. Women who bottle feed see some of their dietary and other health related practices as barriers to breast feeding.

It recommends that health practitioners who decide that individual women and/or their infants may benefit from breast feeding, should engage in a dialogue with the women. Such a dialogue should focus, not so much on information, but on the woman's views about her dietary and other health practices. If the woman is given compelling health reasons she may see herself as capable of changing some practices long enough to breast feed.

Key words—infant feeding, breast milk, parturient women, survey, cultural values, demographic factors, dietary practices

INTRODUCTION

"You are what you eat," said a woman who went on to present her view on the relationship between the mother's dietary habits and breast milk. 'Good eating habits' are necessary for breast feeding. 'Bad eating habits', as women phrased it, were viewed as barriers to breast feeding. These women, like others in our study who chose to bottle feed their newborn infants, talked about benefits of breast feeding; they did not think artificial formulas were superior to breast milk. However, they did not consider themselves capable of breast feeding because it required, in their view, the kinds of dietary practices which they did not follow. 'You are what you eat' is a phrase which reflects a cultural idea shared by women who choose to bottle feed as well as by women who choose to breast feed.

This paper presents a study of 313 consecutive parturient women delivering normal infants at a hospital in Upstate New York. It considers women's decisions to bottle or breast feed and the factors related to these decisions. In particular, it focuses on the possible effect of knowledge or ignorance of the benefits or hazards of either method of infant feeding. It shows that women believe there is a direct relationship between what they take into their body, the food they eat, and the breast milk they produce. Their decision to breast feed therefore depends on whether, in their view, they 'eat the right kind of food,' rather than on knowledge they have of the benefits of breast feeding. Women who are guided by the cultural value of self-reliance, who see themselves as capable of following certain dietary and other health related prescriptions and proscriptions, are the ones who are most likely to breast feed.

This century has witnessed a pattern of marked decline in the percentage of mothers who breast feed, followed by a considerable rise. National surveys record a decline from 65% of mothers who breast fed (including those supplementing with other food) in 1946 to a record low of 24% in 1970-72 [1-3]. Nationwide studies report a steady and consistent increase, from 33% breast feeding in 1975, to about 55% around 1980 [3, 4]. In less than 30 years, the pendulum has begun to swing back, if not all the way, at least to a point similar to 1946.

The recent increase in breast feeding is not manifested equally in all social groups in the United States or in all regions of the country [5-7]. Bryant [8] reports that in a group of low income women 35% of white women breast feed as compared to 10% among Puerto Rican and 12% among Cuban women. Similarly, Rassin *et al.* [5] found ethnic differences and noted that the highest increase was among white women. Income and education are two other factors which have been associated with a higher percentage of breast feeding [2, 9-11].

The decline in breast feeding has been examined in different terms, biomedical, psychological and social. Some writers identified the new developments in chemistry and bacteriology which resulted in the production of nutritionally adequate artificial formula as the main turning point. Furthermore, these developments began to cast doubt on human milk as the 'perfect nutrient' [12]. Other writers saw medical practitioners as the pioneers in promoting bottle feeding. "The Medical profession became convinced of the virtues of artificial milk; hospital routines shifted to favor bottle feeding; and mothers appeared

impressed with advances in 'scientific feeding'" [10]. Margaret Mead [13] saw pediatricians as promoters of bottle feeding. She offered a psychological explanation of male physicians who 'liked feeding children'. Artificial formula in bottles gave them the opportunity to control infant feeding.

One of the major explanations for the decline in breast feeding in the 1950s is that new ideas about women's emancipation resulted in mothers' rejection of their biological role [14]. Meyer [12] noted that those who promote breast feeding do so in psychological terms; breast feeding was seen to give the infant security and to make the mother feel that she is 'being needed'. Health practitioners in England attributed the decline in breast feeding to social factors such as "changing patterns of social behavior, early return of women to work, crowded living conditions (and) . . . a general lack of maternal desire to breast feed" [15].

An increase in breast feeding was noted by some writers as early as 1966, among what they called "educated middle class mothers" [16]. They saw the increase as part of a wider effort in America to change health habits, emphasize the natural and avoid the artificial. Winikoff and Baer [17] supported the view that the increase in breast feeding has to be seen in the context of a 'return to nature' in American society. They also proposed that the emergence of women's support groups and the advocacy by some health practitioners encouraged women to breast feed. Baer [10] argued that the re-emergence of the women's movement in the United States, and a growing acceptance of the view that women have a right to make decisions about their bodies, contributed to the rise in breast feeding. A similar view was expressed by Cox [18] who noted a pattern of changing expectation about child birth and parenting among American professional women and an emphasis on doing things the natural way.

In a recent study, Lawrence [19] found that medical professionals in the United States see it as a temporary phenomenon. They place it in a context of changing norms, such as social acceptance of breast feeding among better educated women and contemporary emphasis on return to nature. Lawrence found that many health practitioners do not see nutritional benefits to breast feeding; such benefits were mentioned only "by 27% of pediatricians, and by less than 15% of both obstetricians and family practitioners" [19].

A number of studies have attempted to interpret the differences between breast feeding and bottle feeding mothers. Brown *et al.* [14] presented psychological interpretations of these differences. They suggested that breast feeding mothers, in contrast to bottle feeding mothers, are less motivated by a wish for freedom, narcissism or convenience. Raphael [20] argued that the term 'convenience' is used by both bottle and breast feeding mothers; in each category women view the choice they make to be the convenient way of infant feeding. Various writers have noted that breast feeding women believe there are health and psychological benefits for the baby, and that breast feeding is the natural thing to do [17, 21, 22].

Other studies have discussed the reasons for bottle

feeding. Huntingford [15] suggested that "mothers are not fundamentally indifferent, but they are very easily persuaded and only too ready to accept what they think is the easy way out." Ignorance of the benefits of breast feeding was seen as very important in the choice to bottle feed [2, 17, 21, 23, 24]. Winikoff and Baer [17] saw fear of breast feeding as a major factor for bottle feeding. Earlier studies proposed that mothers who choose to bottle feed find breast feeding repulsive and embarrassing [14]. Yet, it was also noted that just because a woman says that breast feeding is better, she does not necessarily breast feed [8, 9, 25].

DESIGN OF STUDY

The study was designed to find out how women fed their newborn infants and why they chose one form of feeding rather than another. In addition to the demographic factors, it explores cultural differences and similarities between breast and bottle feeding women, identifies the extent of biomedical knowledge of the benefits of breast feeding and their influence on the women's choices. It considers it important to separate knowledge from practice by distinguishing women's views of benefits to the infant from their views of the benefits to the mother.

A questionnaire consisting of 49 items was designed for *post partum* women. Demographic questions included age, parity, education, religion, ethnicity, household composition, as well as parallel questions about the husband or partner and a question about how the women had been fed by their own mothers. Other questions included extent and source of knowledge about infant feeding and relative benefits to mother and to baby. The women were also asked what they thought about breasts and breast feeding and how happy they were about their pregnancy.

Every woman was asked to participate if she had had a normal labor and delivery and a normal infant during June, July and August 1983 at Strong Memorial Hospital, The University of Rochester Medical Center, in Upstate New York. Of 317 consecutive deliveries, 313 women responded. The women were interviewed the day after delivery, by one of three female medical student research fellows who had been trained in interviewing techniques during a pilot project. The interviewers did not hand the questionnaire to the women but asked the questions verbally, so the women's reading skills did not matter. The questions were asked in an open-ended way without prompting by a choice of possible answers. Each interview required about 45 min to complete. The form granting permission to participate in the study, as required by the Human Investigation Committee of the University, was signed by the women prior to the interview.

The interviewers recorded the replies in detail and coded them into categories; they introduced new categories when the women's answers required this. For example, in response to the question: Why do you think that bottle is better for the baby? several women mentioned that they smoked; this led to the definition of a new category.

RESULTS: DEMOGRAPHIC FACTORS IN RELATION TO EARLIER FINDINGS

Out of the 313 women surveyed, 174 (56%) breast fed (with or without supplements) and the other 139 (44%) bottle fed exclusively.

The incidence of breast feeding was found to be closely associated with several demographic factors. The strongest associations were with the age of the women at first birth and with the women's education (Table 1). Thus, breast feeding was much more prevalent—at least 80%—among women who first gave birth after the age of 24 and had more than a high school education. Breast feeding was much less prevalent (24%) among women who had their first child before the age of 19, and had no more than a high school education. Associations with education had also been found in other studies (Switzky *et al.*, Martinez and Dodd, Eckhardt and Hendershot, and Martinez, reporting figures for the U.S. [1, 3, 7, 11], and Hally *et al.* [9] reporting for England). The evidence of other studies on associations with age of mother was more equivocal (Switzky *et al.* and Rassin *et al.* [5, 11] (U.S.) and Eastham *et al.* [24] (England) found only small and non-significant increases in breast feeding with age, but Martinez [7] (U.S.) and Hally *et al.* [9] (England) did find clear increases). The present study found age of mother at first birth to be a better predictor of breast feeding than age at present birth—which had been used in most other studies. That may account for the stronger association revealed here.

There also was a very strong association with marital status and household composition (Table 2). Among married women as many as 69% breast fed, whereas among the unmarried only 24% did so. This association was found to prevail even when age at first birth and education were held constant, which parallels other findings [4, 9].

When household composition was examined as an additional factor in infant feeding choice, it was found that among unmarried women breast feeding was least frequent (15%) among those who lived alone or with a partner. For married women, by contrast, no clear association was found with household composition. This may be due to the fact that almost all married women lived in nuclear families. (It is difficult to trace parallel findings in other studies because their definitions of households were not the same or were not mentioned.)

Another important association was with how the

Table 2. Marriage and household composition: percent breast feeding (number of women given in parentheses)

Composition of household	Married	Unmarried
w/husband	78 (73)	15 (20)*
w/children	64 (130)	23 (35)
w/others	71 (17)	29 (38)
Total	69 (220)	24 (93)

*Note: w/partner or without.

Table 3. Ethnicity: percent breast feeding

Ethnicity	
Black*	25 (61)
Hispanic*	42 (12)
White*	66 (210)
Other	53 (30)

*Note: These were women whose partners were of the same ethnic group as they were. The small number of mixed couples were included in the 'others' category.

women had themselves been fed by their mothers (Table 3). Much more breast feeding (76%) was found among women who themselves had been breast fed than among women who had been bottle fed (46%). Again, similar associations have been observed in other studies (Switzky *et al.* [11] (U.S.) and Eastham *et al.* [26] (England)). It is possible that this association is caused by mothers influencing their daughters to repeat their own feeding practice.

The present study did not show association of breast feeding with other demographic factors, such as birth parity and religion. Some other studies did, however, find more breast feeding among primiparous than among multiparous women [5, 7].

Ethnicity was found to be an important factor (Table 4). Among Black women breast feeding was much less common (25%) than among Hispanic (42%) and White women (66%). This agrees with the studies of Eckhardt and Hendershot [1], Rassin *et al.* [5] and Martinez [7], all of whom also found a much

Table 1. Age at first birth and education: percent breast feeding (number of women given in parentheses)

Age at first birth	Education				Total
	L.t.HS	HS	m.t.HS, no degree	Degree	
Below 18	24 (50)	23 (13)	20 (5)	— (0)	24 (68)
19-23	56 (16)	40 (63)	53 (32)	71 (7)	48 (118)
24-29	— (2)	47 (17)	76 (25)	89 (56)	78 (100)
30+	— (0)	— (1)	88 (8)	94 (18)	89 (27)
Total	32 (68)	38 (94)	63 (70)	89 (81)	56 (313)

Note: Percentages are not shown in cells with fewer than five women.

Table 4. How their mother fed them: percent breast feeding

Their mothers fed them by	
Bottle	46 (198)
Breast	76 (92)*

Notes: (1) *Includes women who were fed or feed by both bottle and breast. (2) For 23 women data were not available. (3) In the preceding generation 32% (=92/290) were breast fed.

lower frequency of breast feeding among Black than among White women.

The data of this study suggest that most, though not all, of these ethnic differences may be attributed to other demographic classifications and primarily to age, education, marital status and the way the mother herself was fed. This differs from Rassin *et al.* [5] who found that ethnicity was more important than any other demographic factor. For example, where this study found (Table 1) the percentage breast feeding to differ by 57% (=89 - 32%) between the most educated and the least educated group, Rassin *et al.* [5] found a difference of only 10% (=39 - 29%). By contrast, the present study's White-Black difference of 43% (=66 - 23%) barely exceeds the other study's 35% (=44 - 9%) difference. The discrepancy between these results, as well as between the two

studies' overall rates of breast feeding—27% in Rassin's study versus 56% in this study—may be due to the relatively young age and generally low socio-economic status of the Texas population. The national figures of the Ross Laboratories' Mothers' Survey [7] agree much more closely with those of the present study, and show a national breast feeding rate of 61% for 1983, a White-Black difference of 32% (=64 - 32%) and a College-Grade School difference of 37% (=78 - 41%).

After the demographic factors to which breast feeding was related were identified, they were summarized by an index which included all the above demographic factors, except parity and religion. This index was defined (using logistic regression methods [27], see Table 5) so that women with high index values were more likely to breast feed and those with low index values were more likely to bottle feed. It was then used to divide the women into five demographic categories of roughly equal sizes. Table 6 shows that the percentage of breast feeding decreases dramatically from 95% in the highest index category, all the way down to only 12% in the lowest index category. Within each of these five categories, the women are fairly homogeneous as to demographic factors. Examination of the association of breast feeding with cultural factors was therefore carried out separately within each of these demographic categories. This would show if cultural factors have associations with breast feeding beyond what could be explained by demographic differences.

Table 5. Demographic index for breast feeding

Factor	Logistic regression weight (standard error)	Deviance reduction
<i>Age at first birth</i>		
Age below 18		
Age 19-24	-0.089 (1.246)	
Age 25-29	0.997 (0.926)	
Age 30+	1.823 (0.986)	
<i>Regression on education</i>	1.752 (1.185)	68.3 (3 df)
For age below 18		
For age 19-24	-0.388 (0.542)	
For age 25-29	0.134 (0.289)	
For age 30+	1.148 (0.324)	
<i>Marriage and household composition</i>	1.548 (1.134)	17.4 (4 df)
Unmarried		
w/partner or without	-2.553 (0.918)	
w/children	-1.546 (0.796)	
w/others	-1.565 (0.779)	
Married		
w/husband	-0.184 (0.688)	
w/children	-0.973 (0.650)	
w/others	0 (0)	
<i>Women were fed by</i>		14.4 (5 df)
Bottle	-1.954 (0.583)	
Breast	0.427 (0.590)	
<i>Ethnicity (compared to Blacks)</i>		30.5 (2 df)
White	1.136 (0.475)	
Hispanic	0.756 (0.846)	
Other	0.768 (0.600)	
		6.1 (2 df)

Note: Correlation of breast feeding with index = 0.598.

Note on method: The technique of logistic regression [27] is analogous to ordinary multiple regression except that the dependent variable, i.e. the choice to breast feed (=1 for breast feeders, =0 bottle feeders) is transformed to a logit (=log {choice/(1-choice)}) and suitable weights are introduced in fitting the regression equation. The factor variables were introduced successively and their contribution to prediction of choice judged by the reduction they caused in the deviance (which measures deviations from logistic regression much as a sum of squared residuals measures deviations from an ordinary multiple regression). Thus, when introduction of the age at first birth factor reduced the deviance by 68.3, this is judged to be significant by comparison with the chi-square distribution with 3 df. Factors which were not found significant by this type of test were excluded from the index and are not shown.

Table 6. Demographic index categories: percent breast feeding

Demographic category	
Highest index	95 (66)
High index	79 (68)
Middle index	50 (72)
Low index	27 (55)
Lowest index	12 (52)

RESULTS: CULTURAL FACTORS

The questions most pertinent to cultural factors were found to be the ones which ask what kind of feeding women think is best for the baby and what kind they think is best for the mother. The answers to these two questions differentiated most strongly between breast and bottle feeding women. Tables 7 and 8 show that the incidence of breast feeding was negligible among the women who said that bottle feeding was best for the baby, and it was very small among women who said that both methods were equally good for the baby. The incidence of breast feeding was higher among women who said that it was best for the baby; but for these women there was a great difference between those who responded that breast feeding was also best for the mother (of whom

85% breast fed) and those who thought that bottle feeding was better for the mother (of whom only 25% breast fed).

The association between the women's actual feeding choice and their responses to what is best for the baby and the mother, was not due only to demographic factors. Table 8 shows that this association persists within each demographic index category. For example, in the middle category the percentages breast feeding increased from 0%, through 31%, to 82% according to the women's answers. Similar patterns are evident in the other categories.

For a better understanding of women's choices of infant feeding practices, two categories of women were examined in more detail. These were (1) women who said that bottle is best for both the baby and the mother, and, by contrast, (2) women who said that breast feeding is best both for the baby and for the mother.

The first category includes 29 women, all of whom chose to bottle feed. The question Why is bottle better for the baby? was included in the questionnaire to see what benefits women attribute to bottle feeding. Do women, for example, consider artificial feeding to be better than breast milk? Do they attach nutrition and health benefits to bottle feeding? A close examination of the responses to this question showed a complex pattern. Only four women said that bottle feeding was healthier for the baby. None said that it is best because "it is easy to know how much the baby eats" or because it is more filling and the baby is less hungry. One woman said that it was more pleasant, eight said that they did not know why it was better. Sixteen women mentioned a variety of views which focused mainly on the mother's dietary practices and other habits among which 'a bad diet' and 'smoking' were prominent. As one woman phrased it: "I don't feel like eating proper things so baby gets them." Other women simply said that they have a 'bad diet' or that they are 'smokers.' (The above list of responses exceeds 29 because some women gave more than one response.)

Clearly a shift of focus has taken place here. The study's question had been about the best feeding

Table 7. What is best for baby and what for mother: percent breast feeding

What is best for mother	What is best for baby				Total
	Bottle	Breast	Both	n.k.	
Bottle	0 (29)	25 (61)	0 (22)	— (1)	13 (113)
Breast	10 (10)	85 (172)	— (4)	— (1)	80 (187)
Both	— (0)	100 (6)	60 (5)	— (0)	82 (11)
n.k.	— (0)	— (1)	— (1)	— (0)	— (2)
Total	3 (39)	70 (240)	12 (32)	— (2)	56 (313)

Table 8. What is thought best for baby and/or mother: percent breast feeding

What is thought best	Bottle for baby. Bottle or breast for mother	Either for baby. Bottle or breast for mother	Breast for baby. Bottle for mother	Breast for baby. Breast for mother
All women	3 (39)	12 (32)	25 (61)	85 (178)
Demographic index:				
Highest	— (2)	— (2)	— (3)	100 (59)
High	— (3)	40 (5)	57 (7)	90 (52)
Middle	0 (9)	0 (9)	31 (16)	82 (38)
Low	0 (10)	18 (11)	18 (17)	56 (16)
Lowest	0 (15)	0 (5)	0 (18)	46 (13)

Notes: (1) Percentages are not shown in cells with fewer than 5 women. (2) For three women there were no answers on the questions. (3) Of the women who thought that bottle was best for babies, or that either was best, most (51 of 71) also thought that bottle was best for mother. There were too few who thought otherwise to allow significant subdivisions. (4) The last column of the table includes women who thought breast was best for mother as well as those who thought either method of feeding was best for mother.

practice for the baby but the women phrased their answers in terms of the mother's habits. The interviewers became aware of this shift and checked that it was not due to misunderstanding the question.

These 29 women's responses to the question Why is bottle feeding better for the mother? were also of interest. None of them responded that a mother can feed in public. The response that the mother knows how much the baby eats was mentioned by only two women; five women said it was more pleasant and five that it was more convenient. In contrast, 12 women said that bottle was best for the mother because others can participate in infant feeding. Other responses included two who said that bottle feeding was 'easy', three who mentioned dietary and health habits which they thought would interfere with breast feeding, one who said "I can't breast feed because I work" and another who said "I have less time than some other mothers who can just sit home and breast feed. For them breast feeding is fine. It's just not for me." Only one woman talked about the quality of the food and said that bottle feeding is better for the mother because "it contains the right amount of vitamins and minerals." And only one expressed antipathy to breast feeding: a 16-year old who responded, "I don't want anything sucking on my breast."

These responses are significant as much for what was not said as for what was said. Women in this category do not say that bottle feeding is better because they believe in the unique benefits of artificial formula; instead, they go beyond the question and talk about why they cannot breast feed.

The other category examined in detail consisted of the 172 women who said that breast feeding was best

both for baby and for mother. Most (85%), but not all, of them actually breast fed. Table 9 classifies them according to the reasons they gave for thinking breast feeding was better for the mother and for the baby. All but three came up with biomedical and/or psychological reasons why breast feeding has benefits for the baby, but as many as 22 said 'don't know' why it is better for the mother. Classification of these women by the reasons they gave did not produce significant differences in frequency of breast feeding, though it is interesting to note that there were somewhat fewer breast feeders (73%) among the 22 'don't knows.'

Other questions involving cultural factors were also examined. Responses to the question what are breasts for? (Table 10) were found to be related to the percentage breast feeding. Of women who did not mention that breasts are for feeding babies, only 27% breast fed, as compared to 66% among women who did mention that breasts were for babies. Some of this association persists within each demographic category, and thus is not accounted for merely by demographic differences.

Table 11 shows several other questions whose responses were found to be associated with breast feeding. However, when each of these responses was analyzed within demographic categories, little of these associations remained. Apparently, such questions are closely associated with demographic factors. These questions were (1) whether women talked to their husbands or partners about the choice of infant feeding method; (2) whether or not they sought advice on infant feeding from female relatives or from others, including professionals; (3) whether they knew who their baby's pediatrician was going to be;

Table 9. Women who said breast was best for both baby and mother. Reasons for saying so and percent breast feeding

Reasons why best for baby	Reasons why best for mother				Total
	Bonding	Other	Both	Neither	
Psychological only	— (2)	83 (18)	— (2)	— (4)	77 (26)
Biomedical only	100 (9)	85 (39)	83 (12)	82 (11)	86 (71)
Both	86 (14)	85 (41)	100 (12)	60 (5)	86 (72)
Neither	— (0)	— (1)	— (0)	— (2)	— (3)
Total	92 (25)	85 (99)	88 (26)	73 (22)	85 (172)

Table 10. Mentioned that breasts are for babies: percent breast feeding

	Breasts for babies	
	Mentioned	Not mentioned
All women	66 (229)	27 (84)
In demographic categories:		
Highest index	97 (59)	85 (7)
High index	85 (58)	50 (10)
Middle index	54 (57)	33 (15)
Low index	30 (33)	23 (22)
Lowest index	18 (22)	7 (30)

Table 11. Various culturally related questions: percent breast feeding

Talked to husband or partner about infant feeding	
Talked	Did not
60	23
(273)	(40)
Who they sought advice about infant feeding from	
Professionals	Female
or partner	relatives
61	38
(236)	(77)
Did they know who their baby's pediatrician was	
Knew	Did not
60	29
(265)	(48)
Had they attended childbirth classes	
Attended	Did not
66	33
(218)	(95)
Had the pregnancy been planned	
Planned	Unplanned
65	46
(164)	(149)

(4) whether they participated in childbirth education classes; and finally, (5) whether or not the pregnancy was planned. All these questions were associated with the choice of feeding method only through the different demographic characteristics of the women giving different answers.

DISCUSSION

The decision to breast feed involves more than demographic factors, as is evident from our findings. This is clear from the associations with the women's answers about the method of feeding they thought is best for the mother and for the baby. These answers were examined in detail to determine how choices are affected by demographic factors, biomedical knowledge and other cultural factors.

Most women (77%) actually answered that breast feeding is best for the baby and only a few (10%) believed that breast and bottle are equally good or that bottle is best (12%). What factors beyond the demographic can be said to differentiate women who choose to breast feed from those who choose to bottle feed? Knowledge of the benefits of breast feeding is not a major factor since most women in this study, including the 12% who said that bottle feeding is best for the baby, had some knowledge of the value of breast feeding. These 12% did not mention the qualities of bottle milk or formula; instead, they talked about why they could not or would not breast feed. They saw some of their practices, such as smoking, or eating foods that lack nutritional value, as barriers to breast feeding. Some chose the bottle because they saw it as a way to share the responsibility of feeding the infant with others.

Other studies amplify that which is suggested here, namely that a cultural value of self-reliance guides the choice to breast feed. In a study of women who choose careers and motherhood, Gabriel [28] and Gabriel and McAnarney [29] found that for these women self-reliance was a guiding value in their choice of breast feeding. The writers noted that women saw a relationship between their dietary and other health practices and breast feeding. These

women believed that they could make the necessary change in their dietary and other daily habits; Gabriel [28] argued that they believed that it was the mothers' duty to breast feed and to take on whatever dietary and other prescriptions and prohibitions were required. These included a proper diet, avoidance of smoking or drinking alcoholic beverages, and in general an adherence to practices which are believed to promote health. The writer noted that all of these were seen by the women as practices which they could and, indeed, should take on.

Gabriel [28] found that the women who chose careers and motherhood viewed breast milk as superior to artificial feeding and saw themselves as capable of taking on dietary and other practices necessary to breast feed. These women did not see work and breast feeding as incompatible. Some arranged their work and breast feeding so that the two did not conflict. Others pumped breast milk which was given to the infants by others. These caretakers were seen as helping the mother to achieve the goal of breast feeding. (These views are shared by the La Leche League [30].)

We propose that a cultural value of self-reliance guides the different choices that women make about infant feeding. In American society self-reliance is a value which is expected to guide most adult acts and choices. Yet, in certain contexts in adulthood, reliance-on-others is viewed as appropriate, as for example, reliance of the aged on others, financial reliance of adult women on their husbands or patients' reliance on physicians.

In the last few decades the value of self-reliance has begun to emerge in contexts in which it was previously absent or de-emphasized. These include the aged, women and patients [31, 32]. Infant feeding choices have to be examined in this larger framework of a change in American culture, a change in which the value of self-reliance is called upon to guide adult decisions, including the medical domain and health issues. The value of self-reliance, for example, underlies changes in daily habits and practices which are believed to promote health, as well as recent changes in birth customs in American society. These changes in customs and habits are expressed in cultural idioms such as 'return to nature' and 'control over one's body.'

These two cultural values, of self-reliance and of reliance-on-others, underlie the decline as well as the increase in breast feeding. The decline took place at a time when patients' reliance on physicians was emphasized and the idea of women's (or for that matter any patient's) 'control over their bodies' was minimal, as was the idea of 'return to nature.' The increase in breast feeding took place when the value of self-reliance became relevant for women in various areas of their lives. It took place at the time in which American folk culture maintained that people ought to turn from the artificial to the natural and from the expert to the self. This was also the time of increasing emphasis on women's right to make their own choices about their bodies [10, 18]. The return to breast feeding was an expression of such a choice [13, 31].

What about women who bottle fed? A value of reliance-on-others guided them in choosing artificial foods for their infants and including others to share

in infant feeding. They were less likely to use cultural idioms such as to 'control the body' or 'return to nature.'

The cultural idiom 'you are what you eat' was shared by all women. Both women who breast fed and those who bottle fed saw a relationship between dietary and other health practices and infant feeding. Women who believed that they could and should 'control their bodies' adhered to the required health practices for breast feeding. Women who bottle fed did not believe that they could, or should, adhere to the kinds of practices which are seen to be required for breast feeding.

IMPLICATIONS FOR HEALTH PRACTITIONERS

What are some of the implications of this study for health practitioners? That depends, first of all, on the practitioners' own concept of their role vis-a-vis women's choices. Parturient women and health practitioners are both part of American culture. While it is well known that there is diversity among women, it needs to be recognized that there also is diversity among health practitioners, not all of whom favor breast feeding. There are those in the scientific community who see infant formula as being as good as or better than breast milk [10, 15, 19]. Indeed, the percentage who advocate breast feeding may be higher among women than among health practitioners in present day U.S.A. [19].

There are also those who think that health practitioners should avoid any interference with the choices which women make. Crediting the choice to bottle feed to emotional factors, Brown *et al.* [14] advocated a neutral approach by health practitioners, and contended that hospitals should not attempt to affect choices. Hally *et al.* [9] took a more pragmatic view and argued that any attempts to influence choices should be limited to women who are prenatally undecided. They believed that other women are committed to their choices anyway. Similarly, Raphael and Davis [25] argue that women will choose to do what they themselves believe is best in their particular circumstances.

Among those who believe that health practitioners should actively encourage the choice to breast feed, several writers have called for dispensing more information about the benefits of breast feeding [2, 17, 21, 23, 24]. They assumed that women are ignorant of such advantages. Thus, Winikoff and Baer [18] argued that it is the physicians' duty to inform expectant mothers of the benefits of breast feeding. Similarly, Weinstein [24] called for educating women and said "we, as health practitioners, must make a great effort by education and support to have mothers 'get off the bottle and on the breast'."

The findings of the present study and of others [25] suggest that such policies would have little effect on the rate of breast feeding. It was found that most women already have some biomedical information of the value of breast feeding. Providing more information is therefore unlikely to be sufficient to influence their choices. Parenthetically, it should be said that providing such information in ways that are accessible to all women may well be desirable for other

reasons, but it should not be expected to do much to raise the rate of breast feeding.

If changing patterns of infant feeding practices is not merely a matter of providing information, then what can be done? What are some of the implications of this study for those health practitioners who judge that individual women and/or their infants could greatly benefit from breast feeding?

We propose an approach that is based on understanding the woman's demographic background and attempts to provide information that may allow her to revise her choice within the context of her own cultural values. We argue that knowledge of demographic differences and an awareness of cultural factors can aid health practitioners in their approach to infant feeding choices. Practitioners who have demographic information, such as age at first birth, education, marital status or ethnicity, can of course not change these 'givens', but may use them to predict the likelihood that an individual woman will choose to breast or bottle feed. This prediction, in conjunction with the woman's response to questions about what kind of feeding is better for the baby, should guide the practitioner in choosing the kind of information that would be most relevant to her.

Information should be imparted in the context of a dialogue which includes cultural factors. Health practitioners can find out a woman's views about dietary and other practices and habits and whether she thinks that she can and should restrict these practices. The dialogue can be directed to see if a woman who is guided in her choice by the value of reliance-on-others may come to believe that she could indeed change certain practices for the duration of her pregnancy and lactation. If the woman is given compelling health reasons, she may see herself as capable of changing some practices long enough to breast feed. An important aspect of the dialogue is to understand what a woman sees as barriers to breast feeding, such as smoking and certain dietary habits. We believe that health practitioners would do well to avoid challenging the woman's values; instead, they should focus on assisting the woman to change relevant dietary and other health related habits that are relevant to the choice of infant feeding practices.

We are convinced that the clinical situation will be more amenable to a dialogue if it is not viewed as 'them' who lack knowledge vs 'us' who possess it. The approach we propose is based on respect for the women's own choices and avoids an authoritarian attitude toward them.

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