Introducing Complementary Foods to Infants in Central Mali

Research Summary

BACKGROUND

The Demographic and Health Surveys (DHS) nutrition reports for West African countries show persistently high rates of malnutrition among children under two years of age. A study of the complementary feeding of infants age 3-12 months was undertaken to improve the understanding and interpretation of findings on the nutritional status of children in Mali from the Demographic and Health Survey carried out in 1995-1996. The DHS survey found that most infants were given water or other liquids from birth, that few children were exclusively breastfed for four to six months, and that only half of mothers gave solid foods to their children age 6-9 months. These data suggested that the lack of complementary feeding after six months may explain the high rates of stunting and wasting among infants in Mali.

The study was conducted in the Mopti region where 27 percent of children under three were wasted, 28 percent were stunted, and 41 percent were underweight in 1996. Fieldwork was conducted in urban and rural areas of the Mopti region, which has one of the highest rates of malnutrition in the country. The research focused on mother-child interactions. Data were collected through in-depth interviews with 76 mothers of well-nourished and malnourished children, structured observation of 32 mother-child or caretaker-child interactions, several group discussions, and collection of anthropometric data on children. Mothers of well-nourished children were compared with mothers of malnourished children. Nutritional status was assessed by using Z-scores for height-for-age (stunting).

FINDINGS

General practice: All infants

Women had positive views of breastfeeding and saw it as a cheap, nutritious way of nourishing their children and a way of quieting their infants. According to mothers' reports, all children received breast milk except for one child whose mother had died. Most mothers breastfed on demand, usually in response to the child's crying. The study's hypothesis that mothers of well-nourished children respond more often to their infants' crying than mothers of malnourished infants do was supported by the evidence.

From an early age, all children received water, and most received traditional medicines. Although no child was truly exclusively breastfed, many of the younger infants did not receive "food" (rice, *to*, sauce) until they were age six months or older.

Most children were given *cobal* (millet gruel) at 6-8 months of age. *Cobal* is of low caloric value unless sour milk is added. The rationale given for offering *cobal* is that breast milk by itself will no longer satisfy the child. *Cobal* is considered the appropriate bridging liquid between breast milk and real food (rice, *to*, sauce). At about 9-10 months, infants were given rice or *to,* a thick millet paste eaten with a sauce of dried baobab leaves.

The data show little difference between urban and rural children. However, in urban areas, malnourished children received a greater variety of foods and liquids than children who exhibited better nutritional outcomes.

Mothers sometimes call on their own older daughters, their sisters, their cowives, or their mother-in-law to assist them with child care or other household chores. Where present, the mother-in-law plays a critical role in all aspects of child care. In particular, mothers-in-law take responsibility for much of the day-to-day care of the child, for giving traditional medicines, treating illnesses, and advising on feeding for young and first-time mothers.

Contrasting practice: Good and poor nutritional status

Infants and their caretakers were observed for six hours in one day with observers noting each minute what the child and the caretaker were doing. Analyses were carried out to test for statistical differences in feeding practices using minute-by-minute observations as units. Virtually no differences were found in the type of feeding experienced by well-nourished and malnourished children. However, differences were observed in the care they received, in the type of surrogate caretakers employed, and in the social support available to their mother.

Younger, better-nourished children spent more time breastfeeding but then appeared to reduce breast milk consumption and to take in additional liquids and solids by at least six months of age. Those who were malnourished breastfed for less time in the early months but for more time in the later months, compared with their well-nourished peers.

The mothers of well-nourished children placed more emphasis on hygiene and cleanliness than mothers of malnourished children did. The mothers of malnourished children placed a greater emphasis on the role of traditional medicines and benedictions in ensuring a child's good health. Generally, and not only when their children were sick, mothers of malnourished infants did not encourage them to eat if the children did not want to.

Mothers of malnourished children tended to give complementary food earlier than mothers of well-nourished children. Mothers would give other foods when they noticed that their breast milk was insufficient or of poor quality. This reaction set up a cycle of breast milk insufficiency as the frequency and intensity of infant suckling was diminished by the child's consumption of complementary foods.

Over

CONCLUSIONS

No associations were found between the standard demographic variables such as the mother's age, marital status, level of education, or occupation and the nutritional status of her child. Only a few differences were found in the mother-child interactions between mothers of well-nourished and malnourished children.

One of the major determinants of mothers' ability to care for and monitor their children is the social support available to them in their household, particularly the availability of older daughters who can act as child minders. Women who had younger relatives (daughter, niece) were able to instruct them on how to care for their child. Women who could not draw on younger relatives for child care or to help with other household tasks were obliged to carry out child care and domestic duties simultaneously. It is likely that this practice leads to increased fatigue and serves to limit their ability to interact with their children.

Mothers did not report being given instructions by health workers on how to breastfeed their children or how to introduce complementary foods. Mothers' infant feeding practices were different from the standard feeding practices recommended by international agencies in two ways: virtually all mothers gave infants water daily soon after birth, and many mothers did not begin complementary feeding until the child was nine or ten months old. The interaction of these factors in this economically marginal environment characterized by food insecurity means that vulnerable infants easily run the risk of becoming malnourished.

RECOMMENDATIONS

- Health workers should be taught the recommendations on exclusive breastfeeding and the correct age for giving complementary foods, including water and traditional medicines. They also need to be trained to advise women to continue and even increase breastfeeding if their milk appears to be insufficient because milk production is related to the frequency and intensity of infant suckling.

- Because of their key role in child care with young mothers, older women (mothers-in-law) should be integrated into child health education programmes, which often focus only on women of reproductive age. They could be sensitively educated using "griots" (praise-singers) or other traditional methods of communication that emphasize their positive role as well as information about complementary foods.

- Opportunities for the development of women's social support and social networks should be increased to provide them with opportunities for social interaction, economic collaboration, and child care. Neighborhood associations could be involved in setting up child care services for those who live in the same neighborhood.

- Since the main weaning food *(cobal)* is so widely given as a complementary food, it could be usefully fortified, perhaps with peanut oil or ground peanuts, to increase its energy content.

- The association between good hygiene in the household and well-nourished status among infants suggests that ways should be found to improve environmental sanitation around the household.

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