

## REVIEW ARTICLE

**Colostrum avoidance and early infant feeding in Asian societies**

G. Dixon

*Department of Geography and Environmental Science, Monash University, Clayton, Victoria, Australia.*

A review of the literature on childbirth and early infant feeding in Asian societies indicates that the avoidance of colostrum and the introduction of other foods at a very early age are both widespread and persistent. These traditional attitudes should be recognized where there are attempts to reduce infant mortality and morbidity. Further research into these practices is suggested.

Many Asian infants are routinely denied colostrum, for what seem to be reasons of traditional preference. A corollary to colostrum avoidance is to delay the initiation of breastfeeding for up to three days. During this period, many infants are given fluids or other substances orally.

Against these apparently common practices is arrayed the weight of internationally accepted 'cosmopolitan' medicine<sup>20</sup>. First, health care professionals in these circles are unequivocal about the value of colostrum. It is rich in gamma globulins which protect the infant against viral, fungal, and bacterial infections and it prepares the intestinal tract for the later milk<sup>10,13,23,46,52,59,63,64,67</sup>. Second, breastfeeding, to have the greatest chance of success and to realize its recognized nutritional advantages, should commence within an hour of birth<sup>43,46,54</sup>. Finally, supplemental foods or fluids should not be given to infants, especially in situations where there is a risk that the substances may be contaminated<sup>51</sup>.

The body of literature surveyed for this study, all of it in English, leaves little doubt that colostrum avoidance in many Asian societies is widespread, is an old practice and is persisting to the present. Much of the literature is ethnographic, but other materials also have been consulted. The ethnographic material, that based on participant observation of a particular community rather than on rigorously executed surveys of a large population, frequently has two sorts of problems. First, the data may have been anecdotal or idiosyncratic to a specific family or group at a particular time and should not be extrapolated to a larger population. Second, until recently most anthropologists have been male, and the majority of their publications have ignored topics such as childbirth and infant feeding. In some cases these male researchers may have been too ill-informed or uninterested to ask the relevant questions about birth and its immediate aftermath. In other cases, a male anthropologist simply may have been denied access to reliable information on what is essentially female knowledge. Nevertheless, while individual items in the literature are vulnerable when subjected to detailed examination,

collectively they present an undoubtedly valid pattern of persistent and widespread attitudes and behaviour<sup>68</sup>.

With respect to peninsular Malaysia, Manderson says that breastfeeding does not commence until 'the let-down of milk proper'<sup>47</sup>. Amongst Malays in Singapore other liquids were given to an infant 'for a day or so until his mother would have milk to suckle him'<sup>18</sup>. In India in most cases infants are denied colostrum<sup>43</sup>. In Mysore, India, babies are bottle-fed sugar water until the mother's milk comes in<sup>59</sup>.

In Taiwan it was reported that for a Hokkien baby 'nursing begins . . . about the end of the second or third day, when lactation begins'<sup>25</sup>. Also referring to Taiwan Hokkien, Barnett found that nursing commenced one to three days after the birth as soon as lactation began<sup>4</sup>.

Amongst the Burmese it was found that the 'infant was fed after three days, when the milk appeared'<sup>58</sup>. In Vietnam colostrum is expelled before the baby is allowed to suckle<sup>31</sup>. In Indonesia 'colostrum is often discarded'<sup>58</sup>. In rural Java one survey reported that over half the mothers denied colostrum to their infants<sup>36</sup>. In Sulawesi the Toradja 'believe that the first milk is sourish (*maronoe*) and gives the child a stomach-ache' and is thus avoided<sup>1</sup>.

In the Philippines colostrum is thought of as 'dirty milk' which is discarded<sup>69</sup>.

In Thailand colostrum is considered useless and a cause of diarrhoea in the infant<sup>30</sup>. Hanks noted: 'A Muslim view of colostrum as "like pus from a sore" carried more negative overtones than the Buddhist's statement: "at first the mother's milk is too dilute to be useful"<sup>30</sup>, and, from another study of the same Thai village, it was observed that 'the newborn infant was not usually put to the mother's breast for about 3 days after birth'<sup>32</sup>.

Correspondence address: Dr Gale Dixon, Department of Geography and Environmental Science, Monash University, Clayton, Victoria 3168, Australia  
Fax (03) 565 2948

Even babies born in hospitals may have been denied colostrum. Based on recent studies in several Indian states, it was concluded that the 'dictates of custom' tend to delay breastfeeding so that colostrum is avoided, because it is generally regarded as impure, 'heavy' and potentially harmful to the infant<sup>43</sup>. Some health professionals apparently have advised mothers to delay the initiation of breastfeeding and, in hospitals, to separate the mother and infant for a day or two<sup>43</sup>. The general practice in India, excepting only some tribal areas, is that babies are breastfed 'for the first time only 48 to 72 hours after their birth'<sup>43</sup>.

In one study of hospital practices in Kuala Lumpur and Petaling Jaya 'most of the babies were put to the breast more than 24 hours after the delivery and . . . babies were given bottle feeding before the initiation of breast feeding'<sup>9</sup>.

A survey of health professionals in 15 teaching hospitals in eight Indonesian cities revealed that although 46% of the respondents believed that, 'in accordance with the practice recommended by lactation experts', breastfeeding should commence within an hour of a normal birth only 7% of the mothers in the sample hospitals actually did so<sup>37</sup>. It was also clear that the health professionals overwhelmingly (89%) believed that infants should be given colostrum<sup>37</sup>. But the tendency to postpone the initiation of breastfeeding, and some incomplete support for the infant 'rooming-in' with the mother, may indicate less than full commitment to providing colostrum to Indonesian infants in the most cosmopolitan of medical contexts.

A similar situation exists in Vietnam. A few health professionals attempt to support international and what has become official national policy, but even in major hospitals the weight of advice given to new mothers from professionals, from 'modern' culture (as interpreted by the infant formula suppliers) and from 'traditional' culture (as interpreted by family members) is likely to be to delay the initiation of breastfeeding for from one to three days post partum, or even indefinitely<sup>54</sup>.

In some Asian contexts it is difficult to determine whether colostrum is actively avoided or not. One old, but very well-known, source is equivocal about the situation in Bali: 'in easy cases the woman recovers [from the childbirth] on the same day and is able to walk and give the breast to the child. They believe that the first milk is "hard" and indigestible, and before feeding the baby, the mother milks her breast, making the first milk fall on the house wall'<sup>12</sup>.

A study in a Singapore hospital said that it was common to separate babies from their mothers for 24 hours, the 'traditional Chinese rest period', and that 58% of the mothers did not touch their babies in the first 24 hours, which implies at least partial avoidance of colostrum. But the author's report that 'around 80% of the mothers did not know that there exists a difference between colostrum and mature milk' does not imply strong feelings for avoidance<sup>11</sup>.

Against such evidence for the avoidance of colostrum, there are enough reports from several sources to suggest that some Asian babies routinely are, or have been, put to the breast during the time that colostrum would be present.

In Atimelong village on Alor, eastern Indonesia,

immediately after the birth the mother and baby join a group of visitors in the living room of the house. Names for the infant are proposed and 'if a child begins to urinate or to nurse after a name is suggested, that is the one adopted'<sup>19</sup>.

Amongst the Goro of Assam, India, babies were not expected 'to suckle much for the first day or two even if the nipple is put into their mouths; but, they say, since there is no milk this early, they could get nothing anyway. Some babies start trying to suckle from the time the midwife brings them back to the mother after the first sacrifice [apparently almost immediately after the birth]. In a day or so all of them want to suckle and all are able to'<sup>5</sup> (this may be an example of a male author being misinformed about the physiology of breastfeeding).

In poor urban neighbourhoods in Cebu City, Philippines, a survey of 197 new mothers revealed that the majority of women made 'sure that the baby gets the colostrum, although this is not universal throughout the Philippines'<sup>21</sup>. The 1986 study in a Singapore hospital, referred to above, reports that the common practice of separating mother and infant for 24 hours is changing, that more hospital staff are encouraging breastfeeding and that 'some doctors even put the babies to the breast right away'<sup>11</sup>.

During the period before the initiation of breastfeeding, and after, it is reported from numerous Asian societies that infants are given other foods or fluids. In peninsular Malaysia a paste of cornflour and water was given to Malay babies 'in the first few days of life'<sup>24</sup>. Manderson says that many breastfed babies are given supplemental foods before they are one month old and that Malay infants normally may have been given supplemental feeds of tinned milk since it was introduced around the turn of the century<sup>17</sup>. Amongst Malays in Singapore a type of honey known as *gula madu* was added to water and given to an infant 'for a day or so until his mother would have milk to suckle him'<sup>18</sup>. Millis confirms that supplemental feeding was introduced to Malay infants in Singapore at a very early age<sup>50</sup>.

In Sarawak, Land Dayak (or Bidayuh) babies were given salt and pre-masticated rice in the first four days<sup>26</sup>. And amongst the Iban of Sarawak, it is reported that infants are given a ritual taste of salt when the umbilical cord drops off three to five days after birth<sup>62</sup>. Another report on the Iban says that breastfeeding is almost universal but that rice is given early in the child's first year<sup>48</sup>. Also in Sarawak, Melanau babies' diet of breast milk was supplemented 'if necessary' in the first month with condensed milk and water and, after that they were introduced to sago, wheat or rice flour gruel<sup>53</sup>. In northern Sabah, Rungus infants were fed pre-masticated rice before the third week<sup>3</sup>.

In Burma infants 'were often suckled at the breast till they were well over a year old, but were given chewed rice to eat only a week or two after birth'<sup>60</sup>. And one very old source reported that infants were given solid food as soon as they would take it<sup>22</sup>.

In Thailand immediately after the birth the midwife dripped a little honey and boiled water from her fingers into the baby's mouth and whenever the baby cried it was given mashed banana, honey and water<sup>30</sup>. Also in Thailand one survey reported that almost all breastfed babies were given solid food before they were four months old<sup>8</sup>.

In Indonesia 'pre-lactal foods are commonly given'<sup>38</sup>. And in Bali, it was found that immediately after the birth 'the child is fed with a porridge of boiled rice flour (*bubur*) or a little palm sugar and meat from a young coconut'<sup>12</sup>.

In Taiwan it was reported that a Hokkien 'baby is fed "sugar water" (sugar boiled in water) immediately after birth'<sup>25</sup>. Ahern says that Chinese babies are given herbal tea for the first two or three days<sup>2</sup>.

In Mysore, India, babies are bottle-fed sugar water until the mother's milk comes in<sup>59</sup>. And in India generally, in most cases infants are given pre-lactal foods such as water with sugar or honey<sup>43</sup>.

If it is true that in Asian societies early supplemental feeding and colostrum avoidance are both widespread and persistent, this finding is of particular importance in attempts to reduce infant mortality and morbidity, especially for babies born in impoverished or remote circumstances. If Asian infants are normally denied colostrum, and they are given foods other than breast milk in the first few days, they are being systematically denied the substance best able to protect them from pathogens and are possibly being exposed to pathogens during the most vulnerable time.

'Early in life, the protective effects of colostrum are at the maximum'<sup>33</sup>. As infants grow older their resistance to fatal, especially enteric, pathogens increases, so despite increased exposure to infection with the introduction of foods other than breast milk, improvements to the environment in later months of infancy prevent fewer deaths<sup>7</sup>. But in the first month, it is especially critical that babies should be protected from pathogens.

The consequence of early supplemental feeding is clearly illustrated from studies derived from the 1976-1977 Malaysian Family Life Survey of 1262 mothers and involving 5583 infants from 52 localities in peninsular Malaysia<sup>16</sup>. Seven primary studies resulting from this survey have been consulted: Butz, Habicht and DaVanzo<sup>6,7</sup>; DaVanzo<sup>14</sup>, DaVanzo, Butz and Habicht<sup>15</sup>; DaVanzo, Habicht and Butz<sup>16</sup>, and Habicht, DaVanzo and Butz<sup>28,29</sup> (there are some other papers, but they have been unavailable to the author). In general, there seems little reason to doubt either the quality of the survey or the rigour of the analyses, but one should recall that the data are a generation old<sup>27</sup>.

From these studies it was clear that the duration of breastfeeding, and whether it was supplemented or not, was a statistically significant factor in infant mortality<sup>14</sup>. Further:

For children not fully breast-fed in the first months of life, the mortality rate in the next five months was 94.7 deaths per thousand if no toilet or piped water was available. The rate was reduced to 81.6 deaths per thousand if there was a toilet, and to 4.2 when both were present in the household<sup>35</sup>. [and] ... the infant who was never breast-fed is twelve times as likely to die as the infant who was breast-fed at some time<sup>33</sup>.

In households where hygiene is adequate (as measured by the presence of a toilet and piped water) supplemental feeding appears of little concern, but when household hygiene is questionable total breastfeeding becomes critical<sup>6,7,14</sup>. And DaVanzo suggested that breastfeeding in Malaysia did not reduce infant mortality as much as had been previously thought<sup>14</sup>. Perhaps avoidance of

colostrum and early introduction of supplemental foods negated to some degree the advantageous effects of breastfeeding.

Breastfeeding is clearly associated with fewer infant deaths in many societies<sup>10,28,34,39,40,41,44,56,61,66</sup>. But how and when breastfeeding is initiated has yet to attract the attention which would yield valuable information. Numerous studies focus on whether breastfeeding occurs and its duration<sup>42,65</sup>. But the issue of when breastfeeding starts and what else is given to the baby has not been thoroughly addressed.

'Fully breastfed' is a concept deserving further investigation<sup>28,45</sup>. In Singapore nearly two generations ago Millis was comparing breastfeeding preferences between southern Indians, poor Chinese, and wealthy or middle class Chinese and making the distinction between 'wholly' and 'partly' breastfeeding<sup>49</sup>. In the context of breastfeeding as one means of contraception, Ngin notes that in the Selangor Hokkien community she studied in 1979, very few babies were exclusively breastfed<sup>57</sup>. In a study admittedly flawed with problems of data collection, Manderson found that a large proportion (23.8%) of Malaysian women, especially young Malaysian women, were choosing not to breastfeed and that many who did breastfeed introduced supplemental foods before the infant was one month old<sup>47</sup>. She also pointed out the need for ethnographic studies if the reasons for various infant feeding practices were to be understood<sup>47</sup>.

The implications of these findings on colostrum avoidance and early supplemental feeding of children in Asian societies suggest that, at least in some cases, further research needs to be done and health care policies modified. That there is substantial evidence for widespread and persistent avoidance of colostrum and a corresponding predilection to give infants alternative substances in the first few hours after birth, suggests that there is an underlying 'little tradition' of child care, about which both health professionals and male ethnographers have been only remotely aware. Further research may reveal where and how strongly the attitudes favouring these practices are held.

There is some reason to suspect that such ideas, in the case of India, are being sustained by 'the advice from the elderly women of the family'<sup>43</sup>. In the case of Malaysia the traditional Malay midwife, or *bidan kampung*, and the baby amah, *p'ei yué*, in the Chinese communities, may be the carriers of the traditions<sup>17</sup>. Older, respected and loved women who may well be members of the household are likely to have a profound influence on the new mother's behaviour, possibly greater influence than a stranger who represents official health care. If so, attempts to change attitudes may have to be directed at the traditional opinion leaders in order to enlist their aid. By enlisting the aid of the traditional authorities, important messages about such matters as the value of colostrum, hand washing, breastfeeding, pure water and the dangers of supplemental feeding might be reinforced and the vital emotional support a new mother gains from following the advice of people she loves and respects might be preserved. It is in the interaction between traditional values and cosmopolitan health systems that directed changes in health practices usually succeed or fail<sup>55</sup>.

If the traditional authorities cannot assist, then clearer

and more frequent messages will need to be directed to the mothers before they have their first child. And the mothers to be targeted are likely to be young, poor, illiterate and living in remote places.

To conclude, it is very likely that a significant number of Asian infants are still denied colostrum, that the initiation of breastfeeding is delayed and that potentially contaminated substances are given to infants in the first few hours after birth. Further field and clinical studies are needed to substantiate these findings and assess their impact on child health.

## References

- 1 Adriani N, Kruyt AC. De Bare'e sprekende Toradjas van Midden-Celebes (de Oost-Toradjas), tweede deel. [The Bare'e speaking Toradja of central Celebes (the East Toraja), second volume.] Noord-Hollandchic Uitgevers, Amsterdam. Translated from the Dutch for the Human Relations Area Files by Jenni Karding Moulton. New Haven: Human Relations Area Files, 1951.
- 2 Ahern EM. The power and pollution of Chinese women. In: Wolf M, Witke R, eds. *Women in Chinese societies*. Stanford: Stanford University Press, 1975; 193-214.
- 3 Appell GN. The Rungus Dusun and other Dusunic groups. In: LeBar FM, comp. *Insular Southeast Asia: ethnographic studies*. Section 3: Borneo and Moluccas. New Haven: Human Relations Area Files, 1976; 1-26.
- 4 Barnett WK. An ethnographic description of Sanlei Ts'un, Taiwan, with emphasis on women's roles: overcoming research problems caused by the presence of a great tradition. PhD dissertation. East Lansing: Michigan State University, 1970.
- 5 Burling R. *Rengsanggr: family and kinship in a Goro village*. Philadelphia: University of Pennsylvania Press, 1963.
- 6 Butz WP, Habicht J-P, DaVanzo J. Improving infant nutrition, health and survival: policy and program implications from the Malaysian family life survey. *Malaysian J. Reproduct Hlth* 1983; 1:127-38.
- 7 Butz WP, Habicht J-P, DaVanzo J. Environmental factors in the relationship between breastfeeding and infant mortality: the role of water and sanitation in Malaysia. *Am J Epidem* 1984; 119:516-25.
- 8 Chayovan N, Knodel J, Kau Wongboonsin. Infant feeding practices in Thailand: an update from the 1987 demographic and health survey. *Stud Fam Plan* 1990; 21:40-50.
- 9 Chen ST. Infant feeding practices in Malaysia. *Med J Malaysia* 1978; 33:120-24.
- 10 Clavano NR. Mode of feeding and its effect on infant mortality and morbidity. *Trop Pedi* 1982; 28:287-93.
- 11 Counsilman JJ. Ethnic differences in breast-feeding among well-to-do Singaporeans. In: Visser HKA, Bindels JG, eds. *Child nutrition in South East Asia*. Dordrecht: Kluwer Academic Publishers, 1990; 95-100, 119-20.
- 12 Covarrubias M. *Island of Bali*. New York: Knopf, 1938.
- 13 Cruz JR, et al. Studies in human milk III. Secretory IgA quantity and antibody levels against *Escherichia coli* in colostrum and milk from underprivileged and privileged mothers. *Pediatric Res* 1982; 16:272-6.
- 14 DaVanzo J. A household survey of child mortality determinants in Malaysia. In: Mosley WH, Chen LC, eds. *Child survival: strategies for research*. Cambridge: Cambridge University Press, 1984; 307-22.
- 15 DaVanzo J, Butz WP, Habicht J-P. How biological and behavioural influences on mortality in Malaysia vary during the first year of life. *Pop Stud* 1983; 37:381-402.
- 16 DaVanzo J, Habicht J-P, Butz WP. Assessing socio-economic correlates of birth-weight in peninsular Malaysia: ethnic differences and changes over time. *Soc Sci Med* 1984; 18:387-404.
- 17 Dixon G. Development, ethnicity and infant mortality in Malaysia. In: *Conference on Geography in the ASEAN Region*. University of Brunei Darussalam, Bandar Seri Begawan, 27-30 June 1990, Volume II: 397-435.
- 18 Djamour J. *Malay kinship and marriage in Singapore*. Monograph on social anthropology No. 21. London: Athlone, 1959.
- 19 DuBois C. *The people of Alor: a social-psychological study of an East Indian island with analysis by Abram Kordiner and Emil Oberholzer*. Minneapolis: University of Minnesota Press, 1944.
- 20 Dunn FL. Medical care in the Chinese communities of peninsular Malaysia. In: Kleinman A, et al, eds. *Medicine in Chinese cultures: comparative studies of health care in Chinese and other societies*. Washington DC: US DHEW 1975; 297-326.
- 21 Fernandez EL, Guthrie GM. Belief systems and breast feeding among Filipino urban poor. *Soc Sci Med* 1984; 19:991-5.
- 22 Ferrars M, Ferrars B. *Burma*. London: Sampson Low, Morston, 1901.
- 23 Fildes VA. *Breasts, bottles and babies: a history of infant feeding*. Edinburgh: Edinburgh University Press, 1986.
- 24 Firth R. *Housekeeping among Malay peasants*. Monographs on Social Anthropology No. 7. London: London School of Economics and Political Science, 1943.
- 25 Gallin B. *Hsin Hsing, Taiwan: a Chinese village in change*. Berkeley and Los Angeles: University of California Press, 1966.
- 26 Geddes WR. *The Land Dayaks of Sarawak. A report on the social economic survey of the Land Dayaks of Sarawak presented to the Colonial Social Science Research Council*. London: Colonial Office, 1954.
- 27 Haaga JG. Reliability of retrospective survey data on infant feeding. *Demography* 1988; 25:307-14.
- 28 Habicht J-P, DaVanzo J, Butz WP. Does breast-feeding really save lives or are apparent benefits due to biases? *Am J Epidem* 1986; 123:279-89.
- 29 Habicht J-P, DaVanzo J, Butz WP. Mother's milk and sewage: their interactive effects on infant mortality. *Pediatrics* 1988; 18:456-61.
- 30 Hanks JR. *Maternity and its rituals in Bang Chan*. Southeast Asia Program, Department of Asian Studies, Data Paper No. 51. Ithaca: Cornell University, 1963.
- 31 Hart DV, Rajadon PA, Coughlin RJ. *Southeast Asian birth customs: three studies in human reproduction*. New Haven: HRAF Press, 1965.
- 32 Hauck HM, et al. Food habits and nutrient intakes in a Siamese rice village: studies in Bang Chan, 1952-1954. Ithaca: Cornell University, Southeast Asia Program, Data Paper 29 (Cornell Thailand Project, Interim Report Series 4), 1958.
- 33 Holland B. Breast-feeding, social variables and infant mortality: a hazards model analysis of the case of Malaysia. *Soc Biol* 1987; 34:78-93.
- 34 Howie PW, et al. Protective effect of breast-feeding against infection. *Br Med J* 1990; 300:11-16.
- 35 Huffman SL, Lamphere BB. Breastfeeding performance and child survival. In: Mosley WH, Chen LC, eds. *Child survival: strategies for research*. Cambridge: Cambridge University Press, 1984; 93-116.
- 36 Hull VJ. Dietary taboos in Java: myths, mysteries and methodology. In: Manderson L, ed. *Shared wealth and symbol: food, culture and society in Oceania and Southeast Asia*. Cambridge: Cambridge University Press, 1986; 237-58.
- 37 Hull VJ, Thapa S, Wiknjosastro G. Breast-feeding and health professionals: a study in hospitals in Indonesia. *Soc Sci Med* 1989; 28:355-64.
- 38 Iskandar MB, Costello C, Nasution Y. Initiation and duration of breast-feeding in Indonesia. *Asia Pacific Population J* 1990; 5:89-112.
- 39 Jelliffe DB, Jelliffe EFP. Human milk, nutrition and the world resource crisis. *Science* 1975; 188:557-61.

- 40 Jelliffe DB, Jelliffe EFP. 'Breast is best': modern meanings. *New Engl J Med* 1977; 297:912-15.
- 41 Jelliffe EFP. Maternal nutrition and lactation. In: Ciba Foundation Symposium 45. Breast-feeding and the mother. Amsterdam: Elsevier; 1976:119-43.
- 42 Kennedy KI. Breast-feeding and return to fertility: clinical evidence from Pakistan, Philippines, and Thailand. *Asia Pacific Population J* 1990; 5:45-56.
- 43 Khan ME. Breast-feeding and weaning practices in India. *Asia Pacific Population J* 1990; 5:71-88.
- 44 Knodel J. Breast feeding and population growth. *Science* 1977; 198:1111-15.
- 45 Labbok M, Krasovec K. Towards consistency in breast-feeding definitions. *Stud Fam Plan* 1990; 21:226-30.
- 46 Lawrence RA. Breastfeeding: a guide for the medical profession, second edition. St. Louis: Mosby, 1985.
- 47 Manderson L. 'These are modern times': infant feeding practice in peninsular Malaysia. *Soc Sci Med* 1984; 18:47-57.
- 48 McKay DA, Wade TL. Nutrition, environment and health in the Iban longhouse. *Southeast Asian J Trop Med Pub Hlth* 1970; 1:68-77.
- 49 Millis J. Some aspects of breast feeding in Singapore. *Med Jour Malaya* 1955; 10:157-61.
- 50 Millis J. Infant feeding among Malays. *Med Jour Malaya* 1958; 13:145-52.
- 51 Milman S. Breastfeeding and infant mortality: untangling the complex web of causality. *Soc Quart* 1985; 26:65-79.
- 52 Montagu A. Breastfeeding and its relation to morphological, behavioural and psychocultural development. In: Raphael D, ed. Breast feeding and food policy in a hungry world. New York: Academic Press, 1979; 189-97.
- 53 Morris HS. Report on a Melanau sago producing community in Sarawak. London: HMSO, 1953.
- 54 Morrow M. Poverty and infant feeding in Vietnam. *Vietnam Today* 1992; 6:3-7.
- 55 Mosley WH. Child survival: research and policy. In: Mosley WH, Chen LC, eds. Child survival: strategies for research. Cambridge: Cambridge University Press, 1984; 3-23.
- 56 Newland K. Infant mortality and the health of societies. Worldwatch paper No. 47. Washington DC: Worldwatch Institute, 1981.
- 57 Ngin C-S. Reproductive decisions and contraceptive use in a Chinese new village in Malaysia. PhD dissertation. Davis: University of California, 1985.
- 58 Orr KG. Field notes on the Burmese standard of living as seen by the case of a fisherman-refugee family. Notes of the Burma community research project. Rangoon: University of Rangoon, Department of Anthropology, 1951.
- 59 Raphael D, Davis F. Only mothers know: patterns of infant feeding in traditional cultures. Westport: Greenwood Press 1985.
- 60 Richards CJ. The Burman: an appreciation. Burma pamphlets No. 7. Calcutta: Longmans, Green, 1945.
- 61 Rohde JE. Mother's milk and the Indonesian economy: a major national resource. *J Trop Ped* 1982; 28:166-74.
- 62 Sather CA. Meri' anak mandi': the ritual first bathing of infants among the Iban. *Contrib SE Asian Ethno* 1988; 7:157-87.
- 63 Shah IH, Khanna J. Breast-feeding, infant health and child survival in the Asia-Pacific context. *Asia-Pac Pop Jour* 1990; 5:25-44.
- 64 Spiegel M. Infant feeding practice in Malaysia: the variable of choice. In: Manderson L, ed. Shared wealth and symbol: food culture and society in Oceania and Southeast Asia. Cambridge: Cambridge University Press, 1986; 165-90.
- 65 Tu P. Breast-feeding patterns and correlates in Shaanxi, China. *Asia-Pac Pop Jour* 1990; 5:57-70.
- 66 Victoria CG, et al. Evidence for protection by breast-feeding against infant death from infectious diseases in Brazil. *Lancet* 1987; 2(8554):319-22.
- 67 Walker WH. Antigen penetration across the immature gut: effect of immunologic and maturational factors in colostrum. In: Ogra PL, Dayton DH, eds. Immunology of breast milk: a monograph of the national institute of child health and human development. New York: Raven Press, 1979; 227-35.
- 68 Whyte RO. Rural nutrition in monsoon Asia. Kuala Lumpur: Oxford University Press, 1974.
- 69 Williamson NE. Breast-feeding trends and the breast-feeding promotion programme in the Philippines. *Asia-Pac Pop Jour* 1990; 5:113-24.

### Colostrum avoidance and early infant feeding in Asian societies

G. Dixon

*Asia Pacific Journal of Clinical Nutrition* 1992; 1: 225-229

## 摘要

### 亞洲社會的廢除初乳和早期的嬰兒喂養

這是一篇對亞洲社會婦女分娩和早期嬰兒喂養的文獻評論。作者指出了亞洲社會廢除初乳和很早採用其它食物喂養嬰兒是經常和普遍的。這種傳統的看法應被認為他們試圖減少嬰兒的死亡率和發病率。最後，作者並提出了對這種實踐的進一步研究。

