Maternal and Infant Nutrition Reviews

INDONESIA

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MATERNAL AND INFANT NUTRITION REVIEWS

INDONESIA

A Guide to the Literature

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INTRODUCTION

MATERNAL AND INFANT NUTRITION REVIEWS: A RESOURCE FOR NUTRITION PLANNERS AND EDUCATORS

The MATERNAL AND INFANT NUTRITION REVIEWS (MINR) profile existing data on nutritional status and nutrition-related beliefs and practices of mothers and children in developing countries. MINRs also contain information on current nutrition policies and programs of governments, the United States Agency for International Development, and other bilateral, international agencies and Private Voluntary Organizations (PVO). There are thirty-five MINRs in all, profiling forty-four different countries. (See list on next page.)

Maternal and Infant Nutrition Reviews summarize important information obtained from available literature, government documents, consultant reports, and personal correspondence. The data is presented in bulleted form under six major headings: nutrition and health status, dietary beliefs, dietary practices, nutrition status correlations, nutrition and health policies and programs, and commentaries. A bibliography at the back of each monograph describes the listed documents in terms of type of study, methodology, sample characteristics and location, and a summary. Special thanks are extended to Dr. David Pyle for his assistance in reviewing this report, and to Marcia Griffiths of Manoff International, Inc. who provided assistance in identifying and obtaining documents to abstract, as well as reviewing this report. Ms. Griffiths assisted in the development of several nutrition projects in Indonesia. We have relied heavily on her documentation of these efforts because they represent an exceptionally detailed and well-designed study of food habits and beliefs, as well as a presentation of the details of the development of a meticulously designed nutrition campaign.

Nutrition planners and policy makers can use MINRs to help identify a given country's data base. For example, the information contained in each review enables the reader to identify key planning factors such as problem areas of malnutrition, prevailing beliefs about breast feeding, the extent of bottle feeding, types of weaning foods, the government's inter-agency five-year nutrition plan, the amount of donated food being distributed at MCH centers, and major PVOs involved in administering food and nutrition programs.

MINRs can be used as background documents for consultants going into the field and for program developers in-country. They can provide a frame of reference for an in-country workshop aimed at developing a national nutrition strategy. Technical assistance in organizing a workshop of this kind is available through the International Nutrition Communication Service. MINRs can also be used as a resource document in the development of journal articles and textbooks.

MINR data is stored on a computerized word processing system that allows for updates and individualized literature searches on specific topics. Patterns in a particular country or group of countries can be analyzed in accordance with user needs. A nutrition information retrieval service is

available free to those working in developing countries and for a small fee to all others. Orders, inquiries, and comments should be addressed to:

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International Nutrition Communication Service
Education Development Center
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Newton, Massachusetts 02160, USA

MINR Country Reports:

AFRICA:	NEAR EAST:	ASIA:	LATIN AMERICA AND CARIBBEAN:
Cameroon	Egypt	Bangladesh	Bolivia
Gambia and Senegal	Jordan	Burma	Costa Rica
Ghana	Morocco	India	Dominican Republic
Kenya	Tunisia	Indonesia	Ecuador
Lesotho	Yemen	Nepal	Guatemala
Liberia		Pakistan	Haiti
Mali		Philippines	Honduras
Sudan		South Pacific*	Jamaica
Tanzania		Sri Lanka	Panama
Zaire		Thailand	Peru

*South Pacific Region includes the nations of Cook Islands, Fiji, Kiribati, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Western Samoa

MATERNAL AND INFANT NUTRITION REVIEWS

CLASSIFICATION SYSTEM

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   1.3 Women, Lactating
   1.4 Infants 0-6 Months
   1.5 Infants 6-24 Months

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   2.2 About Pregnancy
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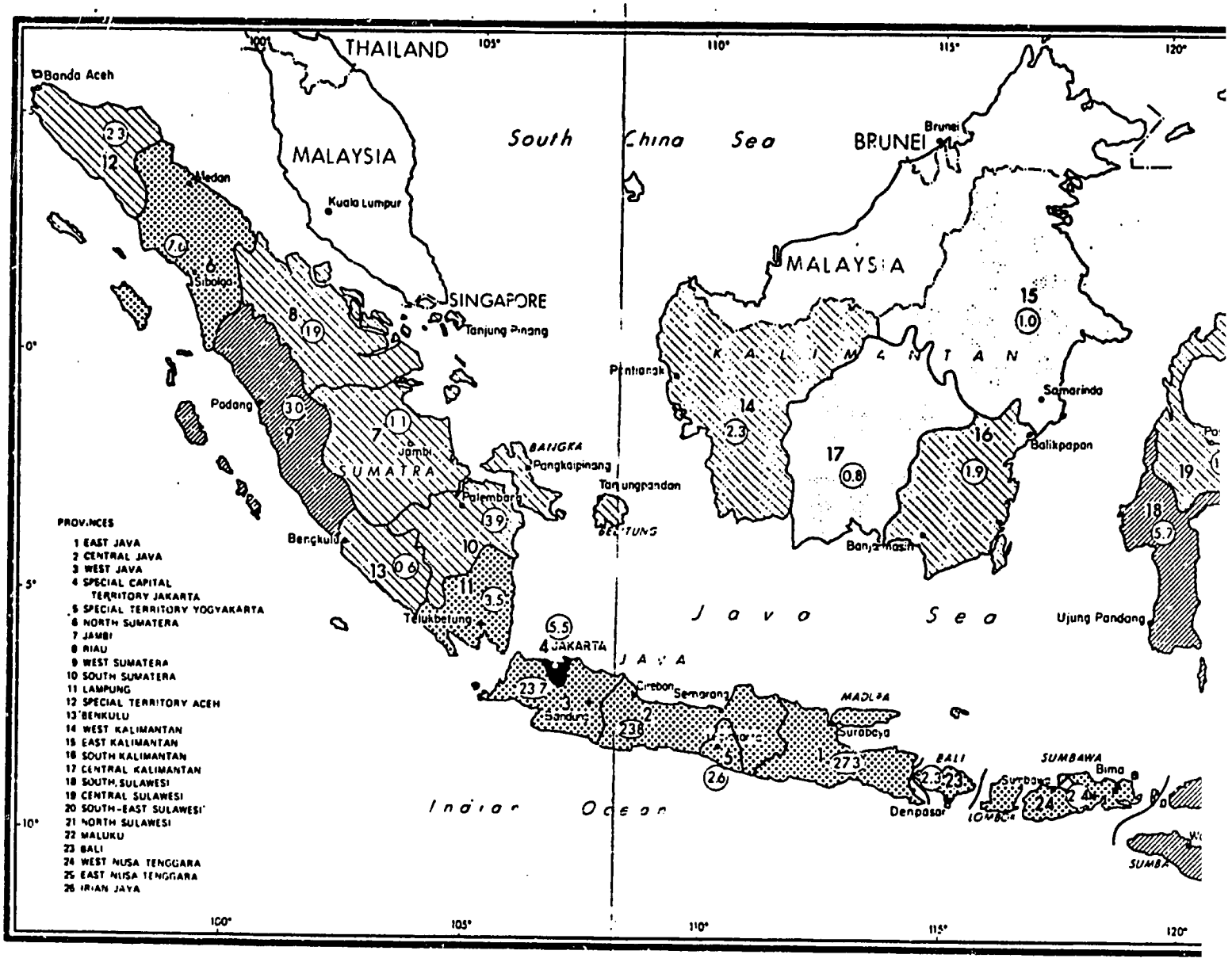
Bibliography


THAILAND
MALAYSIA
SINGAPORE
BRUNEI
MALAYSIA
South China Sea
Java Sea
Indian Ocean
Banda Aceh
Medan
Kuala Lumpur
Sibolga
Padang
Tanjung Pinang
Pontianak
Samarinda
Balikpapan
Banjarmasin
Jambi
SUMATRA
BANGKA
Pangkalpinang
Tanjungpandan
BELITUNG
Palembang
Bengkulu
Teluknetung
JAKARTA
JAVA
Cirebon
Semarang
MADURA
Surabaya
BALI
Denpasar
SUMBAWA
Bima
Ujung Pandang
PROVINCES
1 EAST JAVA
2 CENTRAL JAVA
3 WEST JAVA
4 SPECIAL CAPITAL TERRITORY JAKARTA
5 SPECIAL TERRITORY YOGYAKARTA
6 NORTH SUMATERA
7 JAMBI
8 RIAU
9 WEST SUMATERA
10 SOUTH SUMATERA
11 LAMPUNG
12 SPECIAL TERRITORY ACEH
13 BENKULU
14 WEST KALIMANTAN
15 EAST KALIMANTAN
16 SOUTH KALIMANTAN
17 CENTRAL KALIMANTAN
18 SOUTH SULAWESI
19 CENTRAL SULAWESI
20 SOUTH-EAST SULAWESI
21 NORTH SULAWESI
22 MALUKU
23 BALI
24 WEST NUSA TENGGARA
25 EAST NUSA TENGGARA
26 IRIAN JAYA

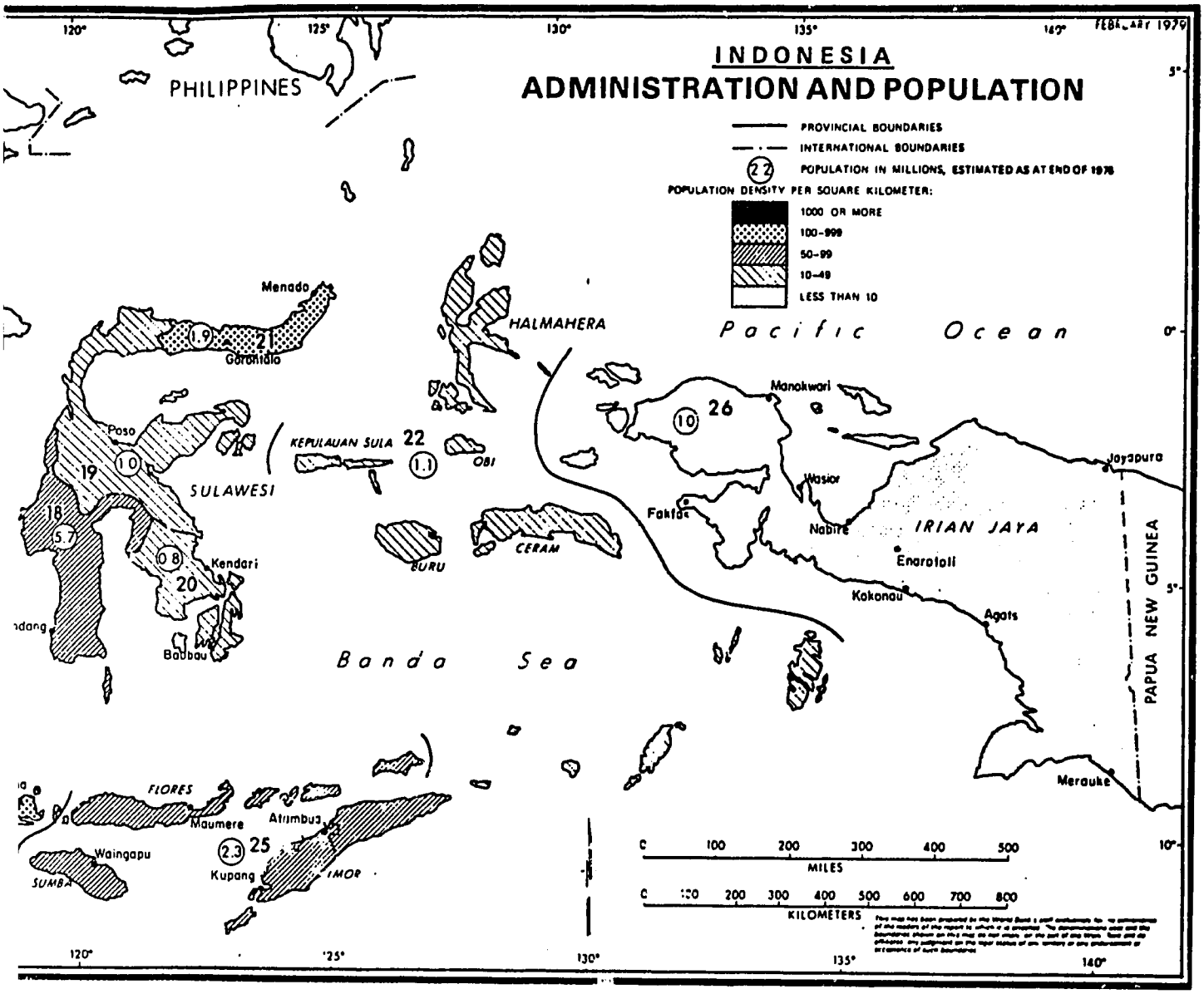

INDONESIA
ADMINISTRATION AND POPULATION
FEBRUARY 1979
PROVINCIAL BOUNDARIES
INTERNATIONAL BOUNDARIES
(22) POPULATION IN MILLIONS, ESTIMATED AS AT END OF 1978
POPULATION DENSITY PER SQUARE KILOMETER:
1000 OR MORE
100-999
50-99
10-49
LESS THAN 10
PHILIPPINES
Pacific Ocean
Menado
Gorontalo
Poso
KEPULAUAN SULA
OBI
HALMAHERA
SULAWESI
BURU
CERAM
Kendari
Baubau
Banda Sea
Manokwari
Jayapura
Wasior
Fakfak
Nabire
IRIAN JAYA
Enarotali
Kokonau
Agats
PAPUA NEW GUINEA
Merauke
FLORES
Maumere
Atambua
Waingapu
SUMBA
Kupang
TIMOR
MILES
KILOMETERS

Table I

Locations Studied

PROVINCES	A.F.O.B., 1975	Boediman et al., 1979	Chapman, 1980	Eng, 1982a	Eng, 1982b	G.O.I. and H.K.I., 1980	Gracey, 1978	Griffiths and Pyle, 1982	Griffiths et al., 1980	Hull, 1979	Hull, 1977	Kardjati et al., 1978	Kusin et al., 1979	Kusin et al., 1977	Pierce Colfer, 1981	Sajogyo, 1974	Soenarto et al., 1979	Sommer et al., 1981	Sugiono, 1979	Susanto, 1980	Sutjipto et al., 1981	Terreri et al., n.d.				
East Java												X	X							X						
Central Java	X		X						X	X	X					X				X						
West Java						X												X		X						
Jakarta							X																			
Yogyakarta		X							X								X									
North Sumatra														X		X			X		X					
Jambi																										
Riau																										
West Sumatra								X								X			X							
South Sumatra									X							X			X	X						
Lampung																										
Aceh								X														X				
Benkulu																										
West Kalimantan																			X							
East Kalimantan															X											
South Kalimantan																										
Central Kalimantan																				X						
South Sulawesi																			X							
Central Sulawesi																										
South-East Sulawesi																										
North Sulawesi																				X						
Maluku																										
Bali																X				X						
West Nusa Tenggara																X			X							
East Nusa Tenggara								X																		
Irian Jaya				X	X																					

HIGHLIGHTS

1. **NUTRITION AND HEALTH STATUS:** Protein calorie malnutrition is widespread among children under age seven in both "food adequate" and "food deficit" households, because of existing patterns of food distribution among family members. Xerophthalmia appears to be endemic in Indonesia. The highest incidence is found in children 3 to 5 years old. July and August are thought to be the peak months. Xerophthalmia is reported to be especially prevalent in the provinces of Aceh, Lombok, Bengkulu, West Sumatra, South Sumatra, West Java, and Central Java.

The Infant mortality rate is 100 deaths per 1000 live births. An estimated 40-50% of all mortality occurs in the under-five group. About 33% of all children under 5 suffer from moderate to severe protein energy malnutrition. Severe PEM affects 2 to 5% of young children.

2. DIETARY BELIEFS: Half of all pregnant women do not believe in a relationship between food they eat and the baby growing inside them. Some believe that it is not desireable to gain weight during pregnancy, because the mother will have a difficult delivery. Some lactating women believe that they cannot produce enough milk, because they cannot calm their children, or the babies are weak, always hungry, or always sleeping. Many mothers believe colostrum is dirty and will make their babies sick. Most mothers using non-breast milk said that they were doing so on the advice of personnel at a health center or a well baby clinic; others said they used supplements on the advice of husbands or parents. Most mothers want to nurse until their babies are 18 to 24 months of age. Makanan lunak (soft food) is a common phrase for foods that are believed to be appropriate for young children; often the phrase is identified with mashed rice and bubur (rice porridge).

3. DIETARY PRACTICES: Boiled rice is the main staple food. When it is insufficiently available, it is supplemented with corn, cassava, or sweet potatoes. Dried salted fish also often serves as a rice supplement. Bananas are the most frequently eaten fruit. A very high percentage of children do not consume fish. Monosodium glutamate is the most widely consumed commercially-produced food product in Indonesia and therefore is being investigated as a medium for fortification with vitamin A. The median household income is too low for many families who rely on commerical markets to comply with nutrition recommendations. The average food deficit in 1974 was 400 calories and 13 grams of protein a day.

Breast feeding often stops when the mother becomes pregnant again. 51% of pregnant women reported receiving no advice about diet during pregnancy. 75% of mothers delay nursing after birth and give their babies prelactal feeds consisting of water mixed with honey, mashed banana with honey, or rice flour porridge with sugar. The average duration for breast feeding is 20 months; mixed feeding is commonly practiced as early as one month of age. A variety of milk substitutes are often used including powdered milk, full fat milk, skim milk, sweetened condensed milk, and infant formula. Reasons given by mothers for bottle feeding include insufficient milk, mother out of the house, breast milk never came, mother ill, or child hospitalized. Examinations of milk dilution practices found that only 50% of the samples of milk were within 20% of the manufacturer's recommended concentration; most were overdiluted. 50% of children receiving milk supplements are old enough to drink from a glass, but most received their milk from a bottle. 62% of mothers who offered both breast milk and food to their infants gave food first, then milk. Many

mothers introduced food, usually honey mixed with bananas, during the first week of life. Half of the mothers who prepare food for their infants at home cook food once a day. The foods given to infants vary by region. Rice flour porridge and/or banana is common in Central Java; in South Sumatra babies are given only breast milk. Once weaning takes place, usually between the first and second year, the child shares the normal family food, often too bulky (low in calories) for a child to consume in quantities sufficient to meet its nutritional needs.

4. NUTRITION STATUS CORRELATIONS: Correlations exist between normal nutritional status among children and regular weight monitoring; bottle feeding and upper income, well educated mothers; and breast feeding and non-working mothers. Xerophthalmia does not always correlate with dietary patterns, i.e. consumption of green leafy vegetables, fruits, eggs, and fish; other factors such as disorders of the absorption system, digestibility of food, and the presence of infectious diseases and parasites may inhibit the body's ability to utilize carotene and vitamin A. Xerophthalmia is more prevalent in boys than girls. Children with Bitot's spots are less likely to breast feed than their matched controls. Wasting (inadequate weight for height) is extrememly common in the presence of active corneal diseases.

5. NUTRITION AND HEALTH POLICIES AND PROGRAMS: REPELITA III, the national 5-year plan for 1979-1984 has the following nutrition-related goals: development of an institution for nutrition and food technology research; a program to promote breast feeding, infant weighing, oral rehydration, distribution of vitamin A, and iron supplementation; fortification programs for iodine and iron; analysis of the impact of agricultural policies on nutrition status; a pilot anemia intervention program; and a plan to monitor government transmigration schemes. Rice has been demoted from its role as a "cultural superfood," and the goal of self-sufficiency in rice has disappeared. Production of substitutes such as corn, cassava, and wheat is being encouraged to reduce the necessity for rice imports, saving foreign exchange, and reducing dependence on an uncertain world supply.

The government's principal nutrition program is UPGK (Family Nutrition Improvement Program), which is a combined effort of the Ministries of Health, Agriculture, and Religion; village volunteers are trained to monitor children's nutrition status through regular weighing and growth monitoring. Agencies supporting government nutrition activities include IBRD, USAID, UNICEF, and FAO. A joint program of the Ministry of Health and the World Bank includes a nutrition education component, developed with technical assistance from INCS member agency Manoff International, which succeeded in raising the growth curves of a target population of low-income children using education alone.

The Badan Kerga Peningkatan Penggunaan Air Susu Ibu (BKPPASI) is a voluntary organization working to promote the use of breast milk. The Indonesian vitamin A deficiency control project is trying to achieve a 70% reduction of vitamin A deficiency by the year 2000. Foreign private voluntary organizations with nutrition related programs include CARE, Helen Keller International, Catholic Relief Services, Save the Children, Foster Parents Plan Inc., and the Carr Foundation. Indonesia has a population of 140 million people, but as of 1979 only 6,000 doctors and 14,000 paramedics, mostly concentrated in cities. Recent development plans place emphasis on rural outreach through PUSKESMAS (subdistrict health centers).

1. NUTRITION AND HEALTH STATUS

1.1 NUTRITION AND HEALTH STATUS, GENERAL

NATIONAL

PROTEIN CALORIE MALNUTRITION: Protein calorie malnutrition is widespread among children under age seven in both "food adequate" and "food deficit" households, because of the existing patterns of food distribution among family members. (Sajogyo, 1974)

XEROPHTHALMIA: Xerophthalmia appears to be endemic in Indonesia. Hospital and clinical records suggest that incidence peaks in certain season, but the precipitating or causative factors have not been identified. July and August are thought to be the peak months for the study area. (A.F.O.B., 1975)

XEROPHTHALMIA--PREVALENCE: The highest incidence of xerophthalmia is found in children 3 to 5 years old. There is no meaningful sex-specific difference in patterns of food consumption in this age group. (Susanto, 1980)

DIARRHEA MORTALITY: The number of deaths caused by diarrhea is estimated to be 600,000 each year. (Sugiono, 1979)

COMMON DISEASES: The most common diseases are respiratory tract infections, diarrhea, and skin diseases with a history of malnutrition. (Sugiono, 1979)

REGIONAL

XEROPHTHALMIA BY REGION: Xerophthalmia was especially prevalent in the following 15 of the 27 provinces (from highest prevalence to lowest), based on small survey samples: Aceh, Lombok, Bengkulu, West Sumatra, South Sumatra, West Java, Central Java, Central Kalimantan, Bali, South Sulawesi, Ambon, South Kalimantan, West Kalimantan, North Sumatra, and Southeast Sulawesi. (GOI and HKI, 1980)

XEROPHTHALMIA: Regional differences in the prevalence of xerophthalmia were noted. Children in Medan, unlike children from four rural villages and a rubber estate, appeared to have received UNICEF capsules of vitamins A and D more or less regularly. Those attending kindergarten received a glass of skimmed milk twice a week and a snack or lunch, usually containing leafy vegetables or yellow fruit, every day. (Kusin et al., 1977)

XEROPHTHALMIA: Many of the cases of xerophthalmia detected in the point prevalence survey were from the Tiga Panah/Suka area, an area that produces significant quantities of fruits and vegetables for export. (Kusin et al., 1977)

NUTRITION PROBLEMS--D. I. ACEH: The major nutrition problems in the province of D.I. Aceh are said to be the same as those for Indonesia in general: a deficiency of calories, protein, vitamin A, iodine, and iron. (Griffiths and Pyle, 1982)

1.1 NUTRITION AND HEALTH STATUS, GENERAL (Cont.)

VITAMIN A DEFICIENCY—D.I. ACEH: Aceh was identified as the province with the highest prevalence of xerophthalmia. Night blindness is presumed high all over the province. (Griffiths and Pyle, 1982)

GOITER--D.I. ACEH: Goiter is prevalent in D.I. Aceh, particularly in the mountain areas. In Beutong everyone is presumed to have some degree of goiter. A 1981 survey covering 29 subdistricts showed that 25.5% of the children had a palpable goiter. A program is underway to give lipiodal injections; 109,239 have been administered. Iodized salt is not widely used because of the availability of low cost uniodized salt. (Griffiths and Pyle, 1982)

PARASITES—D.I. ACEH: A survey of parasitosis was conducted in 1979. The sample included people of all ages from a plantation in Aceh Utara. Prevalence of parasites was a follows: ascaris (96%), trichuris (67%), hookworm (47%). (Griffiths and Pyle, 1982)

HAIR DYING—IRIAN JAYA: It was not possible to complete nutrition assessments for the Bird's Head area, but women especially seemed to understand that "orange-colored" hair is bad. Some women and children were observed to have hair that looked as if dyed. Black hair dye is available in stores in Manokwari. (Eng, 1982a)

VITAMIN A DEFICIENCY--CENTRAL JAVA: Conjunctival dryness, wrinkling, or thickening, or all of these signs in combination were noted in 65% of the cases overall, including both urban and rural residents. Bitot's spots were noted in 90%, and conjunctival injection in 0.075% of all cases. (A.F.O.B., 1975)

VITAMIN A DEFICIENCY—CENTRAL JAVA: Conjunctival dryness, wrinkling, or thickening, or all of these signs in combination were noted in all of the rural cases of xerophthalmia diagnosed. Bitot's spots were noted in 93% and conjunctival injection in 0.07% of the cases. (A.F.O.B., 1975)

VITAMIN A DEFICIENCY—CENTRAL JAVA: Conjunctival dryness, wrinkling, or thickening, or all of these signs in combination were noted in 24% of all urban cases of xerophthalmia diagnosed. Bitot's spots were noted in 87%, and conjunctival injection in 0.08% of the cases. (A.F.O.B., 1975)

XEROPHTHALMIA AND AGE—CENTRAL JAVA: Clinical records and field surveys have shown that on the island of Java, the highest incidence of ocular lesions related to a deficiency of vitamin A occurs in children between the ages of 12 and 48 months. (A.F.O.B., 1975)

XEROPHTHALMIA PREVALENCE—CENTRAL JAVA: The 4.7% overall prevalence rate of xerophthalmia found in the baseline examination was unexpectedly low. The true prevalence rate is likely to be higher since children most at risk were more likely not to have participated in the study. (A.F.O.B., 1975)

XEROPHTHALMIA PREVALENCE—CENTRAL JAVA: The baseline prevalence of xerophthalmia in the five rural villages was 6.8% for males, 3.5% for females, and 5.1% overall, for children aged 12-60 months. (A.F.O.B., 1975)

XEROPHTHALMIA PREVALENCE--CENTRAL JAVA: The baseline prevalence of xerophthalmia in the seven urban villages was 5.1% for males, 3.4% for females, and 4.3% overall for children aged 12-60 months. (A.F.O.B., 1975)

VITAMIN A DEFICIENCY BLINDNESS—CENTRAL JAVA: No cases of blindness, new or old, were found in the study. This could, however, be due to the high mortality rate of blind children. (A.F.O.B., 1975)

GOITER—HIGHLAND JAVA: Prevalence of goiter was very high in the highland area of Central Java. In one research village the prevalence was 68% with considerable incidence of cretinism. Javanese soils are of recent volcanic origin and, therefore, low in iodine, probably a major cause of the goiter endemic there. (Chapman, 1980)

WOMEN'S HEIGHT AND WEIGHT--EAST JAVA: The average height of rural women in East Java was 149 cm., and the average weight of non-pregnant women was 42 kg. (Kusin et al., 1979)

GOITER—NUSA TENGGARA TIMUR: Goiter is a severe problem in Nusa Tenggara Timur. A survey of school-age children indicated that prevalence may be as high as 95%. A funded program was established to administer lipiodol injections, but extent of coverage is unknown. Use of iodized salt is not widespread. (Griffiths and Pyle, 1982)

VITAMIN A--NUSA TENGGARA TIMUR: Vitamin A deficiency is thought not to be as severe a problem in Nusa Tenggara Timur as in other parts of Indonesia because corn is the traditional staple food. This may change, as the diet shifts to rice consumption. (Griffiths and Pyle, 1982)

GOITER--SUMATERA BARAT: Endemic goiter is prevalent in Sumatera Barat. A 1980 study reported a 30% prevalence rate in the majority of subdistricts. (Griffiths and Pyle, 1982)

VITAMIN A—SUMATERA BARAT: No specific data are available, but vitamin A deficiency is thought to be prevalent. About 250 villages in the districts of Solok, Lima Puluh, Kota, and Sawahluto/Silungjung receive vitamin A capsules through the special distribution program. (Griffiths and Pyle, 1982)

URBAN

BACTERIAL CONTAMINATION: Children in urban Jakarta suffering from diarrhea were found to have a variety of enterobacteria present in their upper intestines as well as in their throats and mouths. These microorganisms, which included Klebsiella, E . cloacae, Salmonella, and Shigella, were also found in water samples from the Ciliwung River. (Gracey, 1978)

1.2 NUTRITION AND HEALTH STATUS, WOMEN, PREGNANT

REGIONAL

DIET AND NAUSEA: In general, women who reported eating less during pregnancy than before pregnancy also reported experiencing more nausea throughout their pregnancies. (Griffiths et al., 1980)

1.2 NUTRITION AND HEALTH STATUS, WOMEN, PREGNANT (Cont.)

FATIGUE: Many pregnant women who had initially reported feeling well admitted, after probing, to dizziness, weakness, or fatigue. (Griffiths et al., 1980)

NO HEALTH PROBLEMS: Forty-five percent of the women reported no discomfort during pregnancy. (Griffiths et al., 1980)

STILLBIRTHS AND MISCARRIAGES: Twelve out of 40 pregnant women (30%) had had one stillbirth or spontaneous abortion. (Griffiths et al., 1980)

HEALTH PROBLEMS: The majority of pregnant women in SidoMoyo, Krikilan, Tempur Sari, and Tempura Duwur reported that they felt well, whereas in Dawungen, Sakatiga, and Parit almost all women reported discomfort during pregnancy. Thirty-three percent cited aching bones, 30% reported nausea during the first few months, and 13% reported nausea and swelling throughout the pregnancy. In addition, 47% reported feeling tired or weak during pregnancy. (Griffiths et al., 1980)

MALNUTRITION--SOUTH SUMATRA: Thirty-seven percent of the pregnant women in South Sumatra had arm circumferences of less than 23.5 centimeters, indicating some degree of malnutrition. (Griffiths et al., 1980)

HAIR DYSPIGMENTATION—IRIAN JAYA: Nutritional assessments for the Bird's Head area were not carried out. It was observed, however, that many unmarried girls had black hair but that many pregnant and lactating women had dyspigmented ("orange colored") hair. This was not true of adult males. This is a question that has not been thoroughly investigated. (Eng, 1982a)

WEIGHT GAIN IN PREGNANCY—EAST JAVA: Average weight gain in pregnancy ranged from 5 kilograms in Sidoarjo to 7.4 kilograms in Blitar and Trenggalek. (Kusin et al., 1979)

UPPER ARM CIRCUMFERENCE—CENTRAL JAVA: Fewer women in Ngaglik were below 80% of the standard than in East Java, but the number of women who fell below 80% of the standard increased during the third trimester of pregnancy. (Hull, 1977)

PREVALENCE OF PREGNANCY—CENTRAL JAVA: In rural Java, birth intervals average about three years with long durations of lactation, postpartum amenorrhea, and abstinence. There is also evidence of differential child spacing patterns across socioeconomic groups. (Hull, 1977)

1.3 NUTRITION AND HEALTH STATUS, WOMEN, LACTATING

REGIONAL

UPPER ARM CIRCUMFERENCE—CENTRAL JAVA: Twenty-four percent of the lactating women fell below 80% of the standard, the highest percentage of all groups surveyed. (Hull, 1977)

LACTATION DURING PREGNANCY--EAST JAVA: 37% of rural mothers in East Java were lactating; 6.7% were pregnant. About 10% of the pregnant mothers were still nursing their youngest child. (Kusin et al., 1979)

UNDERWEIGHT WOMEN--EAST JAVA: 13 to 35% of lactating women fell below 90% of standard weight for height. (Kusin et al., 1979)

1.4 NUTRITION AND HEALTH STATUS, INFANTS 0-6 MONTHS

NATIONAL

INFANT MORTALITY RATE: The infant mortality rate was 100 deaths per 1000 live births. (Winarno and Bushan, 1981)

PERINATAL MORTALITY: A national sample of 1,048 mothers, average age 39 years, had experienced 60 miscarriages per 1000 live births, 17 still births, and 45 infant deaths in the first month of life, a total of 122 infants lost. The mothers' poor nutritional status was thought to be the cause. (Sajogyo, 1974)

REGIONAL

WEIGHT FOR AGE: Fifty-seven percent of the infants 0-4 months old surveyed were weighed monthly. Seventy-eight percent were in the normal range on the weight/age chart, and 17% showed some degree of malnutrition, though none of them severely. (Griffiths et al., 1980)

MALNUTRITION--IRIAN JAYA: The nutritional status of children 0-6 months in Syuru was as follows, using Waterlow's classification: normal (73.3%); wasted (13.3%); stunted (1.3.%); wasted and stunted (0). (Eng, 1982b)

MALNUTRITION--IRIAN JAYA: The nutritional status of children 0-6 months of age in Sawaer was as follows, using Waterlow's classification: normal (84.6%); wasted (15.4%); stunted (0); wasted and stunted (0). (Eng, 1982b)

INFANT MORTALITY--IRIAN JAYA: Most families in Catabou have lost at least one child, and 21% of all babies born presumably die within a month. (Eng, 1982a)

GROWTH--CENTRAL JAVA: The mean weight of infants follows the Harvard Standard up to 5 or 6 months, then drops sharply. Average skinfold measurements and are circumference show the same pattern. (Hull, 1977)

BIRTH WEIGHT--CENTRAL JAVA: Of the babies born during the time of the survey, eight out of forty-two (19%) were under 2.5 kilograms. The mean birth weight was 2.9 kilograms. (Hull, 1977)

SEASONAL ILLNESS--CENTRAL JAVA: There is a slight tendency for more infants to become ill in October, at the start of the rainy season. Fifty-one percent of infants surveyed suffered from respiratory complaints. Fevers are also commonly reported. (Hull, 1977)

UNDERWEIGHT--EAST JAVA: Among children birth to 5 months old, 1% were severely underweight, below 60% of the Harvard standard weight for age. (Kardjati et al., 1978)

1.5 NUTRITION AND HEALTH STATUS, INFANTS 6-24 MONTHS

NATIONAL

WEIGHT GAIN—BREAST FED: The pattern of weight gain of breast fed infants in 1978 was: birth weight 3100 gr.; at five months of age, 7000 gr.; at 7 months, 7400 gr.; and at 12 months, 8400 gr. (Sugiono, 1979)

WEIGHT GAIN--BOTTLE FED: The pattern of weight gain of artificially fed infants in 1978 was: birth weight 3000 gr.; at 5 months, 6070 gr.; at 7 months, 7040 gr.; and at one year, 8510 gr. (Sugiono, 1979)

REGIONAL

CHILD MORTALITY: Accurate age-specific mortality data are lacking, but an estimated 40-50% of all mortality occurs in the under-five group. (Griffiths and Pyle, 1982)

CHILD MORTALITY: About 62% of total child mortality ("under seven") occurs in the 0-24 month age group; it is associated with protein-calorie malnutrition. (Sajogyo, 1974)

XEROPHTHALMIA: Xerophthalmia was a serious problem. More than 60,000 children developed gross corneal involvement each year; at least one third of them were left permanently blind or visually impaired in both eyes. (GOI and HKI, 1980)

XEROPHTHALMIA: Only a small proportion of xerophthalmia cases occurred during the first two years of life, but these cases were often the most severe. Few children under two years of age ate green leafy vegetables. Important dietary determinants of xerophthalmia in this age group were the frequency of consumption of papaya and breast feeding practices. (GOI and HKI, 1980)

MALNUTRITION: According to a World Bank estimate, about 33% of all children under the age of 5 suffer from moderate to severe protein energy malnutrition. The severe form, affecting 2 to 5% of young children, ranges from PEM or kwashiorkor type, due to inadequate protein intake, to marasmus resulting from continued restriction of both calories and protein. The majority of severe PEM cases belong to the latter category. The mortality rate in severe cases is significant. Moderate cases are only underweight and/or undersized, but they always run the risk of turning into severe ones since they have little resistence to infection and easily become prone to gastrointestinal and respiratory diseases. (Winaro and Bushan, 1981)

MALNUTRITION: Out of 41 infants 5 to 8 months old, 63% were normal, using the Indonesian weight for age standards; 27% were mildly malnourished; 10% were moderately malnourished; and 0% were severely malnourished. (Griffiths et al., 1980)

MALNUTRITION: In a sample of 41 infants 5-8 months, the proportion of normal to malnourished children was roughly the same for all villages,

except Parit. Eighty percent of the children from Parit in the sample were malnourished to some degree. (Griffiths et al., 1980)

MALNUTRITION: Twenty percent of all children surveyed, aged 9 months and older, were classified as normal, using the Indonesian weight for age standards; 45% mildly malnourished; 25% moderately malnourished; and 9% severely malnourished. Within this group, the statistics are worse for children 18 months and older, compared to children between 9 and 17 months. (Griffiths et al., 1980)

MALNUTRITION AND DIARRHEA: The nutritional status of the children surveyed who were suffering from diarrhea or had recently suffered from diarrhea is as follows: normal (31%), mildly malnourished (44%), moderately malnourished (15%), severely malnourished (10%). (Griffiths et al., 1980)

DIARRHEA—PREVALENCE: Forty-three mothers were questioned about health and nutrition practices during diarrheal illness of their children. Fifty percent of the children had diarrhea at the time of the investigation, and the other 50% suffered frequently from diarrhea, or had had it recently. (Griffiths et al, 1980)

WEIGHT FOR AGE: The children of the 70 lactating women interviewed were evaluated using Indonesian weight-for-age criteria, as follows: 59% normal, 32% mildly malnourished, 8% moderately malnourished, 1% severely malnourished. The moderately and severely malnourished children were all from Tempuran Duwur and Parit. (Griffiths et al., 1980)

NUTRITION STATUS AND MILK SUPPLEMENTS: The nutritional status of children receiving milk supplements was as follows: normal (28%), mildly malnourished (45%), moderately malnourished (17%), severely malnourished (10%). (Griffiths et al., 1980)

MALNUTRITION AND INCOME: SidoMoyo and Parit, two of the villages with the highest family incomes, had the highest percentages of malnourished children, aged nine months and older. (Griffiths et al., 1980)

NUTRIENT INTAKE: The median scores for nutrient intake of children 5 to 8 months old, measured by recall during an investigation were between 60% and 80% of the requirements in Godean, Karangmojo, and Masaran. Scores in Sapuran were between 80% and 100%, and scores for Indralaya were the lowest, between 40% and 60% for protein and calories, and 28% of adequacy for vitamin A, due to complete reliance on breast milk and reluctance to feed green vegetables to children in this age group. (Griffiths et al., 1980)

MALNUTRITION—IRIAN JAYA: The nutritional status of children 7-12 months of age in Sawaer was as follows, using Waterlow's Classification: normal (76.5%), wasted (7.7%), stunted (15.4%), wasted and stunted (0). (Eng, 1982b)

MALNUTRITION—IRIAN JAYA: The nutritional status of children 7-12 months of age in Syuru was as follows, using Waterlow's Classification: normal (72.2%), wasted (27.7%), stunted (0), wasted and stunted (0). (Eng, 1982b)

1.5 NUTRITION AND HEALTH STATUS, INFANTS 6-24 MONTHS (Cont.)

MALNUTRITION--IRIAN JAYA: The nutritional status of children 13-24 months of age in Sawaer was as follows, using Waterlow's Classification: normal (54.5%), wasted (9.1%), stunted (27.3%), wasted and stunted (9.1%). (Eng, 1982b)

MALNUTRITION--IRIAN JAYA: The nutritional status of children 13-24 months of age in Syuru was as follows, using Waterlow's Classification: normal (62.1%), wasted (27.6%), stunted (10.3%), wasted and stunted (0). (Eng, 1982b)

MALNUTRITION--IRIAN JAYA: Based on information from nutritional assessments of children under 5 years of age in Syuru and Sawaer (Irian Jaya), using Waterlow's Classification, it appears that intake of both protein and energy was inadequate, although energy was the more limiting of the two based on the amounts of sago known to be consumed each day. (Eng, 1982b)

STUNTING--IRIAN JAYA: In both Sawaer and Syuru, stunting increased with time but was more prominent in Sawaer. The Syuru children grew taller but were not able to eat enough to maintain adequate weight for height. Children in Sawaer grew less in height but were mostly able to eat enough to maintain their smaller stature. (Eng, 1982b)

WEIGHT FOR HEIGHT--IRIAN JAYA: The weight for height of thirteen children sampled in Catabou, expressed as a percentage of the standard, and divided by sex was as follows: males (86.1, 76.2, 95.4, 74.2, 96.7, 91.7, 93.3, and 91.0), respectively, and females (84.0, 78.4, 92.0, 77.4, and 76.0). (Eng, 1982a)

ILLNESSES--IRIAN JAYA: Common diseases among children in Catabou and Ujgek are pneumonia and diarrhea. (Eng, 1982a)

VITAMIN A DEFICIENCY--CENTRAL JAVA: In the study, there was a strong correlation between the conjunctival signs of dryness, wrinkling, and thickening, and the presence of Bitot's spots. Only 2 out of 47 children with Bitot's spots did not show other conjunctival signs, and only 1 out of 46 children with conjunctival signs did not have Bitot's spots. In all 46 cases, children were affected in both eyes. Pigmentation was rarely observed. The seven cases of night blindness, based on parental reporting, were all in the control group. (A.F.O.B., 1975)

BITOT'S SPOTS--CENTRAL JAVA: The prevalence of Bitot's spots among children 12-23 months of age was 0.6% overall, 0.9% for the rural villages, and 0.3% for the urban villages studied. It was not possible to study night blindness objectively. (A.F.O.B., 1975)

XEROPHTHALMIA PREVALENCE--CENTRAL JAVA: The overall prevalence rate was 4.7%, considerably less than the original estimate of 7%. There was a significant overall male/female differential, 6.0% to 3.4%, but no significant difference between rural and urban villages, holding sex constant. Prevalence rates increased with increasing age. (A.F.O.B., 1975)

XEROPHTHALMIA PREVALENCE--CENTRAL JAVA: The prevalence of xerophthalmia among children 12-23 months was 0.3% for children from urban villages, 0.9% for the rural villages, and 0.6% overall. (A.F.O.B., 1975)

CHILD MORTALITY--EAST JAVA: Child mortality, expressed as the number of children who died as a percentage of children ever born to each mother, varied from 25% in Madura to 10% in Blitar and Trenggalek. (Kusin et al., 1979)

MORTALITY AND DIARRHEA--JAVA: It has been estimated that 500,000 children less than five years of age die annually in Java due to acute diarrhea. (Soenarto et al., 1979)

UNDERWEIGHT--EAST JAVA: The percentage of children severely underweight increased with age. Among children birth to 5 months of age, 1% were below 60% of the Harvard standard weight for age; among children 6 to 11 months, 4%; and among children 1 to 3 years of age 10% were below 60% of standard. (Kardjati et al., 1978)

XEROPHTHALMIA--WEST JAVA: The incidence of active corneal xerophthalmia in rural West Java was 5 per 1000, and the average prevalence was 12 per 10,000. (Sommer et al., 1981)

VITAMIN A DEFICIENCY--NORTH SUMATRA: It was most prevalent in the four villages studied in North Sumatra (in contrast to a town and a rubber estate). The incidence of clinical signs was as follows: conjunctival xerosis, 0-1 year of age: boys (8.8%), girls (3.7%). corneal ulceration with xerosis and keratomalacia: boys (1.1%), girls (0.9%). Corneal scars: girls only (0.9%). For both sexes together, the prevalence was a follows: conjunctival xerosis (5.8%), corneal ulceration with xerosis and keratomalacia (1.0%), corneal scars (0.5%). (Kusin et al., 1977)

VITAMIN A DEFICIENCY--NORTH SUMATRA: The minimum point prevalence rates calculated for both sexes were as follows: Bitot's spots with conjunctival xerosis (0.29%), corneal ulceration with xerosis and keratomalacia (0.16%), and corneal scars (0.45%), which are sufficient, using WHO standards, to consider xerophthalmia a public health problem in the village. Conjunctival xerosis was omitted as an indicator in computing minimum point prevalence rates because of its susceptibility to being misinterpreted; it is difficult to distinguish between a past, chronic, or incipient case. (Kusin et al., 1977)

VITAMIN A DEFICIENCY AND MALNUTRITION--NORTH SUMATRA: Three out of four cases from 4 rural villages showing signs of xerophthalmia with corneal involvement also showed signs of severe protein-energy malnutrition. One girl of eight months, no longer breast fed, had a case of corneal xerosis and haziness without ulceration. There were two cases of keratomalacia: a boy of 6 months not breast fed and a girl of 18 months still breast fed. (Kusin et al., 1977)

VITAMIN A DEFICIENCY--NORTH SUMATRA: For children 1-3 years of age in 4 rural villages, corneal ulceration with xerosis and keratomalacia were diagnosed as follows: boys (0), girls (1.3%), both sexes (0.6%). (Kusin et al., 1977)

1.5 NUTRITION AND HEALTH STATUS, INFANTS 6-24 MONTHS (Cont.)

CORNEAL SCARS--NORTH SUMATRA: For children aged 1-3 years in 4 rural villages, corneal scars were diagnosed as follows: boys (1.1%), girls (1.3%), both sexes (1.2%). (Kusin et al., 1977)

CONJUNCTIVAL XEROSIS--NORTH SUMATRA: Conjunctival xerosis, a symptom of vitamin A deficiency, was diagnosed in 28% of the boys and 11% of the girls from a rubber estate; 1.1% of the boys and 1% of the girls from Meda. AMong children aged less than one year from 4 rural villages it was 8.8% for boys and 3.7% for girls, and for children 1-3 years of age, 17.6% and 8.7%, respectively. (Kusin et al., 1977)

CONJUNCTIVAL XEROSIS--NORTH SUMATRA: For children aged 1-3 in 4 rural villages, conjunctival xerosis was diagnosed as follows: boys (17.6%), girls (8.9%), both sexes (13.4%). (Kusin et al., 1977)

BITOT'S SPOTS WITH CONJUNCTIVAL XEROSIS--NORTH SUMATRA: For children aged 1-3, Bitot's sptos with conjunctival xerosis were diagnosed as follows: boys (0), girls (0.6%), both sexes (0.3%). (Kusin et al., 1977)

XEROPHTHALMIA--NORTH SUMATRA: Twenty-eight percent of the boys and 11% of the girls from the rubber estate had conjunctival xerosis. There were no cases of Bitot's spots, corneal xerosis, corneal ulceration with xerosis, or keratomalacia. There was one case of corneal scars in a girl 3 years of age. (Kusin et al., 1977)

XEROPHTHALMIA--NORTH SUMATRA: In the group from Medan (North Sumatra), 1.1% of the boys and 1.0% of the girls suffered from conjunctival xerosis. There was no evidence that any of the children suffered from more serious stages of xerophthalmia. (Kusin et al., 1977)

MALNUTRITION--NUSA TENGGARA TIMUR: About 53% of the children in Nusa Tenggara Timur suffered from some degree of malnutrition, based on weight for height criteria. Approximately 9% suffer from severe malnutrition. (Griffiths and Pyle, 1982)

MALNUTRITION--SUMATERA BARAT: The prevalence of malnutrition in Sumatera Barat is 45.3%, based on a sample of 3700 children in 34 villages in 12 subdistricts. 38.3% fell below 80% of the standard; 7% suffered from third degree malnutrition. The worst conditions were found in the district of Pasaman, where 15% of the under-fives were reportedly severely malnourished, based on weight/height criteria. The lowest rate (1%) was in the district of Agam. (Griffiths and Pyle, 1982)

RURAL

CORNEAL XEROPHTHALMIA: The incidence of active corneal xerophthalmia in rural Indonesia was 2.7 per 1000. With a rural preschool population of 23.5 million, at least 63,000 new cases of corneal xerophthalmia occur in Indonesia every year. (Sommer et al., 1981)

URBAN

DIARRHEA--SEASONAL VARIATION: A longitudinal study in Yogyakarta found little variation throughout most months of the year in the number of

children admitted to the hospital and in the number of children infected with rotaviruses. Both decreased during November and December, the period of change from dry to wet conditions. (Soenarto et al., 1979)

DIARRHEA--ROTAVIRUS INFECTION: Rotavirus particles were identified by electron microscopy in fecal specimens from 126 of 334 (38%) infants and children with acute diarrhea. Rotavirus infections were most common in children aged 6 to 24 months. Rotavirus infection was a major cause of childnood diarrhea but was an uncommon cause of diarrhea in newborns. (Soenarto et al., 1979)

2. DIETARY BELIEFS

2.1 DIETARY BELIEFS, GENERAL

REGIONAL

FOOD CATEGORIES: Words such as halus, lunak, and keras are used frequently in nutrition education to describe foods appropriate for children at different ages, although they are not consistently understood by women when applied to food. (Griffiths et al., 1980)

KADER FOOD CATEGORIES: Kader (health workers), like mothers, appeared to have no clear understanding of which foods are designated by the phrases halus and lunak. (Griffiths et al., 1980)

LAUK-PAUK--PROTEIN FOODS: Lauk-pauk is a phrase used frequently in nutrition education to describe protein foods. Other people also use it to describe the condiments that are eaten with rice, some of which are protein foods, and some not. When asked for examples of lauk-pauk, only 55% of the respondents cited only protein foods. (Griffiths et al., 1980)

MAKANAN KERAS--HARD FOODS: Makanan keras is a phrase used frequently in nutrition education to describe a hard food. Examples of such foods in order of frequency are: hard rice, corn cooked like rice, peyek (a peanut cracker), fried foods, and fruits like guava and mango. (Griffiths et al., 1980)

MAKANAN HALUS--SMOOTH FOODS: Makanan halus is a phrase used frequently in nutrition education to describe a fine or smooth food thought to be appropriate to young children at a certain age. Although these was no consistency in its use, jenang and banana were the foods most frequently mentioned as exemplifying halus. (Griffiths et al., 1980)

MAKANAN LUNAK--SOFT FOODS: Makanan lunak is a phrase used frequently in nutrition education to describe a soft food appropriate for young children. Although there was no consistency in its application, mashed rice and bubur were the foods most frequently mentioned as exemplifying lunak. (Griffiths et al., 1980)

VITAMIN A: Fifty-seven mothers were asked whether they had ever heard of vitamin A. Sixty-one percent had not. Of those who had heard of it, 12% recognized it as being "for the eyes." Fifty percent of those who had heard of it said that vitamin A can be found in liver, carrots, green vegetables, papaya, and guava. These respondents were predominantly from Ngipak in Yogyakarta, and Krikilan and Dawungan in Central Java. (Griffiths et al., 1980)

VEGETABLES: Two-thirds of the respondents interviewed about vegetables said that vegetables contain vitamins. Some of the women said they thought vitamins helped to produce more blood. (Griffiths et al., 1980)

LEGUMES: All respondents said that legumes were expensive, but that they are "good for nutrition" or "have vitamins." (Griffiths et al., 1980)

2.1 DIETARY BELIEFS, GENERAL (Cont.)

LEGUMES—PREPARATION: Women in both Sakatiga and Parit (South Sumatra) reportedly prefer to cook legumes at home rather than buy them from street vendors, because they are "more delicious" and "more filling." (Griffiths et al., 1980)

FOOD PREFERENCES: Respondents expressed food preferences as follows: fish to tahu or tempe (75% to 25%); fish to any type of beans (80% to 20%). Tahu and/or tempe was preferred to other legumes (77% to 22%). (Griffiths et al., 1980)

FOOD PREFERENCES—BAYAM VS. CABBAGE: When women were given a choice between bayam greens and cabbage, 90% chose bayam over cabbage because they said it had more vitamins, tastes better, and is green. The women who preferred cabbage said it could be cooked with a greater variety of foods than bayam. (Griffiths et al., 1980)

FOOD PREFERENCES—GREEN, LEAFY VEGETABLES: When mothers were asked which one of two green leafy vegetables they preferred, 63% chose swamp cabbage (kangkung) over Chinese cabbage. Reasons for this preference included: swamp cabbage has more vitamins; it is cheaper; it tastes better. The women who preferred Chinese cabbage said it was soft, tasted better, was "clean," and more available. (Griffiths et al., 1980)

FOOD PREFERENCES—PAPAYA: When mothers were given a choice between ripe and young papaya, all but one of them chose the ripe papaya because of its sweetness. The women who chose green papaya said it could be used in more ways. (Griffiths et al., 1980)

FOOD PREFERENCES—BANANAS: When women were asked to choose between white bananas (pisang ambong) and yellow bananas (pisang raja), 87% of the women chose the white banana because it was reportedly softer, sweeter, better, and more nutritious for children. Women who chose the yellow banana said that it had more vitamins than the white banana. (Griffiths et al., 1980)

SPECIAL PROPERTIES OF FRUITS: Forty-three percent of the mothers interviewed said that fruits had no special properties; 33% said that fruits are good for health; 25% said that fruits contain vitamins that help produce more blood. (Griffiths et al., 1980)

RURAL

EDUCATION AND NUTRITION STATUS: Village girls aged 14-18 years of age, attending the St. Theresie training center in Asmat (Meranke District, Irian Jaya) enjoyed better health than other girls in the village and were, therefore, regarded as desirable marriage partners. When questioned, they perceived no relationship between their health status and food. They all received three regular meals each day at the school. They attributed their health status to the fact that they attended the school and thought that weight loss during pregnancy was normal. One girl said that she did not want to marry because she would become thin like her sister, who was the mother of several children. Courses of instruction at the school included: Health, Food Preparation, Nutrition, and Child Care. (Eng, 1982b)

2.2 DIETARY BELIEFS, ABOUT PREGNANCY

REGIONAL

PREGNANCY AND DIET: Forty-seven percent of the pregnant women said they did not know of any relationship between the food they ate and the baby growing inside them. (Griffiths et al., 1980)

ATTITUDES TOWARDS DIET CHANGES: When asked how they felt about modifications tried in their diets, most women responded positively. Characteristically, they reported feeling stronger, more energetic, and that green vegetables made them feel "fresh." These diets, however, still did not meet 100% of their requirements. (Griffiths et al., 1980)

WEIGHT GAIN: About 50% of the women reported believing that it was desirable to gain weight during pregnancy. Some could not provide an explanation. Others had reportedly heard it from a midwife. (Griffiths et al., 1980)

WEIGHT GAIN DURING PREGNANCY: Twenty-three percent of the women believed that it was not good to gain weight during pregnancy. Some offered no explanation for this. Others said that if the mother gained weight, the baby would be too big, and the mother would have a difficult delivery. (Griffiths et al., 1980)

VEGETABLES: In all 70 of the households investigated, mothers said that they thought green leafy vegetables were good for pregnant and lactating women and that it was important to eat more of them during pregnancy and lactation. (Griffiths et al., 1980)

FOOD AVOIDANCE: Sixty-seven percent reported no food avoidances during pregnancy. For the remainder, restrictions varied from region to region but were not judged to be nutritionally harmful. (Griffiths et al., 1980)

MIDWIVES' ADVICE ON DIET: Traditional midwives (dukun bayi) were asked what they advised pregnant women to eat. All but one reported giving advice. Of these, 38% said that there were no special foods for pregnant women; 62% said that pregnant women should eat more green vegetables. Those recommending green vegetables were all from Central Java. (Griffiths et al., 1980)

MIDWIVES' ADVICE ON FOODS TO AVOID: Fifty percent of the traditional midwives (dukun bayi) reported that there were no special foods that pregnant women should avoid. Of the remainder, women form Yogyakarta and South Sumatra mentioned foods such as: ice, durian, chili (Yogyakarta), and certain types of fish (South Sumatra). (Griffiths et al., 1980)

MIDWIVES' ADVICE ON "STRENGTH": Traditional midwives asked what pregnant women should do to "strengthen their blood" reported as follows: eat more (44%), drink jamu (25%), eat tahu or tempe (25%), or eat egg (19%). Others also advised eating liver or green bean porridge. (Griffiths et al., 1980)

DIETARY BELIEFS, ABOUT PREGNANCY (Cont.)

MIDWIVES' ADVICE ON INCREASED INTAKE: When traditional midwives were asked about advising that a pregnant woman eat more, 25% said that eating more would increase the baby's size at birth, which they did not consider to be a good thing. These midwives were from Godean and Duwungan. (Gracey, 1978)

NUTRITION ADVICE FROM KADER: Twenty-six percent of the kader (volunteer nutrition workers) reported that they would never give advice to pregnant women; 46% reported recommending that women eat more vegetables. Other advice was reported as follows: take iron pills (21%); eat more (18%); eat more fruit (13%); eat more protein food (13%); go to the Health Center for check-ups (13%). (Griffiths et al., 1980)

FOODS AVOIDED—CENTRAL JAVA: Sugar cane, ice, cucumber, chili, and ripe papya are avoided by pregnant women because they believe them to be harmful. (Griffiths et al., 1980)

FOOD AVOIDANCE--SOUTH SUMATRA: Women in South Sumatra believe that by avoiding the flowers of the banana tree, jackfruit, cempedek, and catfish, they can prevent difficult and/or excessively bloody deliveries. (Griffiths et al., 1980)

RURAL

ROLE OF FOOD IN PREGNANCY: When women were asked about the relationship between the food they eat and the child growing inside them, 47% responded that they did not know of any relationship; 16% believed there was no relationship; and the remainder thought there was a relationship, saying the child uses the "essence" of the food which the mother eats. (Griffiths et al., 1980)

FISH AVOIDED: Pregnant and nursing mothers avoided fried fish so that their milk would not be fishy. (Chapman, 1980)

FOODS AVOIDED—EAST JAVA: 10 to 15% of rural mothers reported avoiding certain foods when pregnant or lactating. The foods most frequently mentioned as harmful were mutton, eel-like fish, certain vegetables, bean sprouts, chilies, and pineapples. (Kusin et al., 1979)

2.3 DIETARY BELIEFS, ABOUT LACTATION

NATIONAL

COLOSTRUM: The National Commission on breast feeding found that there was a widespread belief that colostrum was poisonous. (IBFAN, 1981)

REGIONAL

FEW FOODS AVOIDED: Almost all women reported that there were no special foods they avoided during lactation. A few reported avoiding mango and fried foods but did not give a reason. (Griffiths et al., 1980)

HOT PEPPERS: Some women reported avoiding hot peppers during lactation, because the taste would pass into the milk and disturb the infant. (Griffiths et al., 1980)

SALTED FISH: Some women reported avoiding salted fish during lactation because they would give a bad taste to the milk and disturb the infant. (Griffiths et al., 1980)

INADEQUATE MILK PRODUCTION: Eighteen percent of lactating women thought they did not produce enough milk. Reasons cited were: 67% that they cannot clam their children; 33% that children were always hungry; 3% that babies were always sleeping; 17% that babies were weak. Also, several of them mentioned that taking birth control pills had caused the amount of breast milk they produced to decrease. (Griffiths et al., 1980)

ADEQUATE MILK PRODUCTION: Eighty-two percent of the lactating women believed that they produced enough milk. Reasons cited to support this statement were: 62% the fact that babies did not cry; 16% that milk seeps from their breasts; 11% that their babies were growing quickly; 8% that babies did not want any food; and 8% that their babies slept well. (Griffiths et al., 1980)

FOOD, DRINK, AND MILK PRODUCTION: Half of the women perceived a relationship between food, drink, and milk production; half did not. More women (47%) related food consumed to milk products. Fewer women (42%) noted the relationship between fluids consumed and milk produced. (Griffiths et al., 1980)

MILK PRODUCTION: Women who were asked what helped increase breast milk production reported as follows: 54% drinking jamu (herbal drinks); 14% eating green vegetables; 9% eating good food; 7% drinking more; and 29% said they did not know. (Griffiths et al., 1980)

BIRTH CONTROL PILLS AND MILK QUANTITY: Several women in a survey believed that taking birth control pills had caused the amount of breast milk they produced to decrease. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--VEGETABLES: Lactating women who were asked to increase their consumption of green vegetables were willing to do so, because they believed it would "freshen" their milk. Those who did not increase their consumption explained that green vegetables were hard to get during the dry season. (Griffiths et al., 1980)

COLOSTRUM: At a community meeting in Ngipak, women referred to colostrum as banyo olo, which means "bad water." (Griffiths et al., 1980)

COLOSTRUM: Sixty-one percent of 102 mothers did not give colostrum to their infants. Seventy percent said it was yellow and dirty. Others said that it would make their babies sick or that it was hot and bitter. Fourteen percent discarded it because it was customary to do so but offered no explanation. (Griffiths et al., 1980)

COLOSTRUM: Forty percent of the women who did not give colostrum to their infants (61% of 102 in the sample) were advised to discard it by

2.3 DIETARY BELIEFS, ABOUT LACTATION (Cont.)

parents or parents-in-law. Firty-three percent were advised to discard it by a midwife; 14% were advised both by parents and by a midwife, and one claimed it was her own idea. (Griffiths et al., 1980)

COLOSTRUM: Of the mothers who fed colostrum to their infants, 54% said it was their own idea; 23% were advised to do so by a trained midwife (Bidan); 14% were advised by their parents; 6% were advised by a village nutrition worker (kader); and 3% were advised by a doctor. (Griffiths et al., 1980)

COLOSTRUM: Of the mothers who fed colostrum to their infants, 51% gave no explanation; 14% reported giving it because the child cried; 14% because they were told it was good medicine; 11% because they wanted to produce more milk; 6% because it was nutritious,; and 3% because it would make the child smarter. (Griffiths et al., 1980)

COLOSTRUM: Of the women asked if colostrum could be purified, 70% said they did not know; 27% said it could not be purified; and one woman said it could be made clean enough for infants by washing the breasts ("cooling them"). (Griffiths et al., 1980)

COLOSTRUM: After an investigator briefly explained the advantages of colostrum to mothers, 87% said they would be willing to try it with their next child, and many of them were eager to do so; 6% were still doubtful; and 6% did not wish to disobey their parents. (Griffiths et al., 1980)

ADVICE ON MOTHER'S DIET; Twenty-nine percent of the women were advised to eat green vegetables to improve their breastmilk; 23% were advised to eat more while lactating. (Griffiths et al., 1980)

ADVICE ABOUT FEEDING: The most common advice given to mothers about feeding their babies is to give the baby food it if cries and to feed it banana. Other advice given was about when to introduce other foods. (Griffiths et al., 1980)

ADVICE ON FEEDING SCHEDULES: Sixty-three percent of the women reported making decisions themselves about the feeding schedules of their babies. Thirty-four percent were reportedly advised by their mothers or by midwives, and one was advised by her husband. (Griffiths et al., 1980)

MIDWIVES' ADVICE ON POSTNATAL DIET; Traditional midwives (dukun bayi) all agreed that women after delivery required no special foods. Two midwives said that women after delivery should begin to eat more. They also agreed about avoidances. These included hot, spicy foods and fishy-tasting foods. Three of them also mentioned avoiding beef, chicken, and fish. (Griffiths et al., 1980)

MIDWIVES' ADVICE ON COLOSTRUM: All traditional midwives (dukun bayi) give advice about breast feeding. Seventy-one percent advise mothers to discard the colostrum "because it is dirty." Of those giving this advice, the midwives who had received training were only slightly fewer than the others. (Griffiths et al., 1980)

MIDWIVES' ADVICE ON MILK PRODUCTION: Traditional midwives (dukun bayi) advise lactating women that by eating green vegetables (59%), drinking jamu (41%), or just eating and drinking more, mothers can produce more milk. (Griffiths et al., 1980)

NUTRITION ADVICE FROM KADER: Eighteen percent of the kader (volunteer nutrition workers) reported having no advice for lactating women. Fifty-eight percent reported recommending that lactating women eat more vegetables. Other recommendations were reported as follows: eat more food (24%), eat more protein food (10%), eat more fruit (8%), and do not eat meat and salted fish (8%). (Griffiths et al., 1980)

FLUID CONSUMPTION—CENTRAL JAVA: Some lactating women in Godean believe that drinking large quantities of fluids will cause their babies to catch cold. No explanation was given. (Griffiths et al., 1980)

COLOSTRUM—IRIAN JAYA: It was reported that colostrum is bad because "it pulls the baby's throat." However, babies are made to drink it because mothers believe that good milk will not come until the "bad milk" has come out. (Eng, 1982a)

FOOD INTAKE—IRIAN JAYA: Lactating women in Catabou know that if they eat more food, they will produce more milk. (Eng, 1982a)

SPECIAL FOODS—IRIAN JAYA: The following foods are thought to be good for lactating women: vegetables eaten with salt and oil, cucumbers, papaya, young squash, and bananas. (Eng, 1982a)

FOOD AVOIDANCE—IRIAN JAYA: There are apparently no food taboos for lactating women. (Eng, 1982a)

ATTITUDES—CENTRAL JAVA: Women have a positive attitude toward breast feeding, and it is almost universally practiced in Ngaglik; milk is considered to be very important for the infant's health. It is also thought to have curative powers for certain infections. (Hull, 1979)

COLOSTRUM—CENTRAL JAVA: Many women were reluctant to give colostrum to infants and delayed breast feeding until "true milk" appeared. They also expressed the belief that misfortune could result if the colostrum was eaten by insects or foraging animals. It therefore had to be carefully discarded. (Hull, 1977)

BELIEFS ABOUT BREAST—CENTRAL JAVA: Women believe that the left breast contains the "food," while the right breast contains the "water." They also explained their predominant use of the left breast by saying that it was best to give "food" first, then "water." This information, however, was only from observers' notes and was not uniformly asked throughout Java. (Griffiths et al., 1980)

ABSTINENCE DURING BREAST FEEDING—CENTRAL JAVA: Many women believe that it is cause for disgrace to become pregnant while breast feeding, although the notion is not universal. Some women believe that intercourse ruins the mother's milk and that it is particularly dangerous during the first twelve months of lactation. For some women, abstinence

2.3 DIETARY BELIEFS, ABOUT LACTATION (Cont.)

was not associated with taboo but was consciously practiced to space births. This practice is facilitated by the fact that abstinence and self-control are believed to increase a person's spiritual strength. However, the high value placed on abstinence and self-control may lead to over-reporting of abstinence in data from retrospective studies. (Hull, 1977)

BELIEFS ABOUT BREASTS--SOUTH SUMATRA: Women in south Sumatra believed that the right beast contains the "food," while the left breast contains the "water." (Griffiths et al., 1980)

BELIEFS ABOUT BREAST--SOUTH SUMATRA: Contrary to Java, women in South Sumatra always begin feeding with the right breast. Two-thirds of the mothers reported that they did not alternate, if the child seemed satisfied. The other third reportedly alternated during each feeding. (Griffiths et al., 1980)

MIDWIVES' ADVICE ON POSTNATAL DIET--SOUTH SUMATRA: Traditional midwives (dukun bayi) in South Sumatra all agreed that women after delivery should avoid fish, hot foods, and hard rice. (Griffiths et al., 1980)

SUFFICIENT MILK: 62% of women believed they produced sufficient milk because their babies did not cry, milk seeped from their breasts, or their babies grew quickly and slept well. 18% felt that they did not have enough milk because they could not calm their children and their children grew hungry, slept poorly, or were weak. (Griffiths et al., 1980)

RURAL

REASONS FOR NOT BREAST FEEDING--EAST JAVA: Mothers who did not nurse their infants birth to 6 months of age had special reasons. Some mothers said they were too weak. Others believed they did not produce sufficient milk. There was a belief that if the previous child died during infancy, a mother should not breast feed this baby, because the milk was considered not good. Such a baby was given to a foster parent. (Kardjati et al., 1978)

2.4 DIETARY BELIEFS, ABOUT BREAST MILK SUBSTITUTES (INCLUDING BOTTLE FEEDING)

REGIONAL

REASONS FOR USING MILK SUPPLEMENTS: Reasons for using milk supplements vary. Seventy-nine percent of the women using them do so on the advice of personnel at a Health Center or well baby clinic; 21% were reportedly advised to do so by their husbands or parents. (Griffiths et al., 1980)

OVERDILUTION: There is a widespread belief, even among women not using milk supplements, that one to two tablespoons of milk in a glass of water (about 240 cc.) is the correct amount. Instructions on milk cans and packets are difficult to understand, and in some cases packets come without instructions. Even the oral instructions given at Health Centers and well baby clinics are apparently often incorrect. (Griffiths et al., 1980)

ATTITUDE--CENTRAL JAVA: Women in Ngaglik asked researchers about powdered milk. They were aware of the distribution of milk supplies by the World Food Program. Infant formula is clearly seen as a high-status food. Ten to 15% of the infants studied, all under a year old, were receiving infant formula or skim milk supplements. (Hull, 1979)

2.5 DIETARY BELIEFS, ABOUT WEANING

NATIONAL

REASONS FOR WEANING: The reasons given for weaning among paramedical personnel were as follows: inadequate production (24.7%), child refusal (11.5%), mother employed or busy (48.3%), mother pregnant (1.7%), mother ill (2.9%), child grown up (0%), divorces (0%), no production (0%), and other (10.9%). (Sugiono, 1979)

VEGETABLES AND VITAMIN A: Two problems that are related to increasing consumption of vitamin-A-rich foods by young children are that: a) mothers of children under two years of age do not know how to cook the leaves, and b) mothers of children over two years of age report that their children do not like the vegetables. (Israel, 1980)

REGIONAL

REASONS FOR WEANING: Of the mothers who weaned their children after 18 months of age, 61% said that this was because the children were strong enough, big enough, or could eat by themselves. Other reasons included lack of milk production due to the use of birth control pills, parents' suggestion, or because the child would be stupid if weaned after the age of two. (Griffiths et al., 1980)

INTENDED AGE AT WEANING: Out of 137 mothers questioned, 88% indicated that they would nurse their children until they were between 18 and 24 months of age. Some mothers suggested that their children might not be weaned until they were three or four years old. Thirteen percent reportedly weaned their children before 18 months of age. (Griffiths et al., 1980)

EGGS: Eggs are sometimes used by mothers to wean their children, because they supposedly increase children's appetite for other foods while mothers are withholding the breast. It was reported in about 19% of the cases surveyed. (Griffiths et al., 1980)

SNACKS: All but two of the mothers questioned said that snacks were good for children over 9 months of age. The two mothers who said that snacks were not good for their children thought that snack food was dirty. (Griffiths et al., 1980)

PROPER AMOUNTS OF FOOD: Mothers of children 9-17 months of age and mothers of children over 18 months of age did not differ in their responses to questions concerning amounts of food for young children to eat. Fourteen percent said that children could eat half of an adult portion (in some cases specifying whether they were using the father's portion or the mother's portion as a reference); 44% reportedly said that

2.5 DIETARY BELIEFS, ABOUT WEANING (Cont.)

children should eat a lot, but in small portions, sometimes specifying that this was due to the size of the child's stomach; and 42% said that children could not, and should not, eat large amounts of food, in some cases specifying that they believed this would cause diarrhea or vomiting. (Griffiths et al., 1980)

FOODS TO BE AVOIDED: A little over half of the mothers said they did not know of any foods that should not be fed to children 5 to 8 months old. (Griffiths et al., 1980)

GOOD FOODS: The foods most frequently mentioned as being good for children 9-17 months of age were: rice porridge, green vegetables, bread, tahu and/or tempe, and banana. (Griffiths et al., 1980)

NO FOODS AVOIDED: Fifty-eight percent of the mothers said that there were no special food avoidances for children 9 months of age and over. (Griffiths et al., 1980)

FOOD AVOIDANCES: Forty-two percent of the mothers said that they should avoid feeding children nine months and older the following foods: acid and "fishy tasting" (amis) foods (55%), hot (spicy) foods (36%), hard foods (27%). (Griffiths et al., 1980)

MIDWIVES ADVICE: Traditional midwives (dukun bayi) advised mothers to introduce foods as follows: in the first five days (29%); before the end of the first month (12%); during the second month (40 days) (29%); during the third month (24%); during the fourth month (6%). (Griffiths et al., 1980)

MIDWIVES' ADVICE: The foods that traditional midwives (dukun bayi) recommend as first foods are: banana and rice flour porridge (18%); porridge only (29%); banana only (18%); bubur (12%); mashed rice with sugar (18%). (Griffiths et al., 1980)

MIDWIVES' ADVICE: The reason that traditional midwives (dukun bayi) offered for the early introduction of food is that when babies cry it is because they need food, and that mothers' milk is insufficient. (Griffiths et al., 1980)

MIDWIVES' ADVICE: All traditional midwives (dukun bayi) give advice about feeding young children, though they differ in what they advise concerning the introduction of food. However, they all recommend breast feeding and introducing food before the child is five months of age. (Griffiths et al., 1980)

VEGETABLES—INCREASING CONSUMPTION: When mothers were asked about ways to increase consumption of green leaves by their children less than 9 months of age, 83% said this could be done by chopping them in smaller pieces and boiling until soft. Fifty-four percent were skeptical about mixing green leaves with rice porridge. (Griffiths et al., 1980)

VEGETABLES: Sixty-four percent of the mothers said that babies less than 9 months of age could not eat more than three tablespoons of green, leafy vegetables per day. (Griffiths et al., 1980)

FEEDING PATTERNS: Half of the women interviewed thought it was better to give solid food after breast feeding, and half of them thought it better to give solid food first and breast feed afterwards. (Griffiths et al., 1980)

REASONS FOR INTRODUCING SUPPLEMENTS: Of the mothers who offered food to their babies in the first four months of life, 55% said it was to stop their babies from crying. This was the most frequent response. Other responses were that it would make the baby grow quickly, grow strong, grow fat, or feel full. Three mothers said that they gave food either because they had no milk or because their milk was inadequate. (Griffiths et al., 1980)

FRIED FOODS: Mothers in South Sumatra thought it acceptable to give their children already fried fish or tempe, while mothers in Java thought that, even mashed, already fried tempe would be too hard for children 5 to 8 months old. (Griffiths et al., 1980)

FOOD PREPARATION: In general, mothers attempting trial modifications of their children's diets preferred porridge made "from scratch" to pre-cooked food because in that way they were sure that the porridge was soft enough. Some women also believed that food prepared "from scratch" was more pure than pre-cooked food, even if it sat in the pot all day and was reheated at each feeding. (Griffiths et al., 1980)

FOODS TO BE AVOIDED: A little less than half of the mothers believed that certain foods are not good for children 5 to 8 months old. These included: sour foods (19%); cassava (tiwul), regular rice, and boiled corn (17%); vegetables (10%); fried foods (6%); salted fish (6%). They said that these foods would make their children sick. (Griffiths et al., 1980)

APPROPRIATE FOODS: Mothers believe that food for a baby 5-8 months old should be soft (halus or lumak) and easy to digest and generally mashed. (Griffiths et al., 1980)

FOOD SUPPLEMENTS AND AGE: South Sumatran mothers whose infants 5 to 8 months old had not been able to tolerate food supplements said they would try food again when their children were a year to a year and a half old. (Griffiths et al., 1980)

COCONUT AND FISH—SOUTH SUMATRA: All of the women in Sakatiga (South Sumatra) said that coconut and fish should not be fed to children 9-17 months of age because they would cause worms. These avoidances were not mentioned in Parit, another village in South Sumatra. (Griffiths et al., 1980)

FISH AVOIDED—SOUTH SUMATRA: The avoidance of giving fish to young children in South Sumatra appears to be potentially harmful because of the heavy reliance on fish as the primary source of protein in that area. (Griffiths et al., 1980)

2.5 DIETARY BELIEFS, ABOUT WEANING (Cont.)

RURAL

REASONS FOR WEANING: The reasons given by mothers for weaning (cessation of breast feeding) in 2 rural villages in 1977 were as follows: inadequate production (0), child refusal (27.3%), mother employed or busy (18.2%), mother pregnant (27.3%), mother ill (0), child grown up (24.3%), divorce (3.0%), no production (0), and other (0). (Sugiono, 1979)

FISH: Young children were not given fried fish until they were five years old. (Chapman, 1980)

URBAN

REASONS FOR WEANING—JAKARTA: The reasons given for weaning among mothers of high and middle income groups in Jakarta in 1978 were as follows: no production or milk too dilute (32.0%), mother working (28.)0, influenced by advertisement (16%), afraid of hurting the breast (16.0%), to be "modern" (4.0%), and other (4.0%). (Sugiono, 1979)

REASONS FOR WEANING--JAKARTA: The reasons given for weaning by mothers from a low income group in Jakarta in 1978 were as follows: no production (15.8%), child refusal (19.3%), mother pregnant (17.2%), child grown up (12.3%), given bottle milk since birth (7.4%), mother ill (6.2%), child sick (4.9%), new baby (3.8%), changed to solid food (2.5%), mother working (2.5%), breast milk too dilute (1.2%), teeth erupted (1.2%), and divorced (1.2%). (Sugiono, 1979)

2.6 DIETARY BELIEFS, ABOUT ILLNESS AND CURE

REGIONAL

EYE PROBLEMS: Women are generally very little aware of eye problems, except in Sido Moyo and Bejihardjo in Yogyakarta. In these villages, 92% of the women reported having seen eye problems in their communities but did not report any cases of "chicken" or night blindness. (Griffiths et al., 1980)

EYE PROBLEMS AND DIET: Women are generally unaware of the relationship between diet and eye problems. Two women (out of 57) said that eye problems were caused by a lack of vitamins; the rest had no idea. (Griffiths et al., 1980)

EYE PROBLEMS—REMEDIES: When questioned about how to remedy eye problems, 75% of the women said they had no idea. Of those offering ideas, 18% mentioned foods. The foods most frequently mentioned were: roasted liver (12%); fish oil (3%); and papaya, tomato, or sugar (3%). (Griffiths et al., 1980)

PERCEPTION OF HEALTH STATUS: Most mothers perceived their children as healthy. Ninety-three percent of the mothers with normal children said that they were healthy; 60% of all mothers with malnourished children also reported them to be healthy; 57% of mothers with moderately or severely malnourished children also thought that their children were healthy, in some cases despite regular attendance at weighing sessions. (Griffiths et al., 1980)

PERCEPTION OF HEALTH: Reasons reported for believing children to be healthy were broken down as follows: child wants to eat (52%); child is easy to manage (38%); child is never sick (35%); child does not cry (16%); child is gaining weight (12%); child is lively, plays frequently (7%). (Griffiths et al., 1980)

PERCEPTIONS OF ILLNESS: Reasons reported for believing children to be sick were broken down as follows: child concurrently has cold, fever, or diarrhea (49%); child will not eat (26%); child frequently cries (11%); child is not growing (11%); child is difficult to manage (8%). (Griffiths et al., 1980)

WEIGHT GAIN: Responses to questions about the mother's perception of illness of health in children showed that few mothers use weight gain as a criterion for judging their children's health status. (Griffiths et al., 1980)

IMPORTANCE OF WEIGHING: Women asked why it was important to weigh their children reported as follows: no idea or because told to do so (38%); no explanation (10%); to know whether children were growing and healthy (38%); because children not growing should be fed more food (14%). (Griffiths et al., 1980)

REASONS FOR NOT WEIGHING: Twenty-two percent of the 214 mothers sampled offered the following reasons for not weighing their children: weighing is not important (29%); child is too young (all under nine months of age) (24%); mother too busy (15%); not available at time of session (12%); other (child sick or malnourished, or weight does not change) (20%). (Griffiths et al., 1980)

DIARRHEA AND APPETITE: Mothers who could not feed their children with diarrhea as frequently as suggested blamed it on their children's reluctance to eat. (Griffiths et al., 1980)

DIARRHEA AND FOOD INTAKE: Mothers of children with diarrhea frequently said they knew that not feeding children with diarrhea would increase their weakness, but that these children often refused to eat. (Griffiths et al., 1980)

DIARRHEA AND FLUIDS: Some mothers felt that an increase in fluid intake would also increase diarrhea. (Griffiths et al., 1980)

CHILDREN'S FLUID INTAKE: Mothers were asked whether their children could drink six glasses of water a day. Half of them did not know; 47% said that six glasses are excessive; and only one woman said that she thought it was possible to drink that much. In general they felt that children were too small to drink so much liquid. (Griffiths et al., 1980)

CHILDREN'S FLUID INTAKE: Mothers in general expressed the opinion that children were too small to drink six glasses of fluid each day and that four glasses is the maximum that a child can drink. (Griffiths et al., 1980)

2.6 DIETARY BELIEFS, ABOUT ILLNESS AND CURE (Cont.)

FOODS GOOD FOR DIARRHEA: Fried chicken blood and bananas were food thought to be good for children with diarrhea. (Griffiths et al., 1980)

DESCRIPTION OF DIARRHEA: Diarrhea is described in a variety of ways. Fifty-two percent described it as liquid ("like rice water'); 33% said that it was foamy; 18% said "sticky." In addition to this, 2 people said that it was bloody, and one person said that it smelled terrible, (Griffiths et al., 1980)

DIARRHEA AS NORMAL CONDITION: Seventy-nine percent of the mothers responding to questions about diarrhea said that diarrhea was a normal occurence and not a severe illness. The term used to describe it (enteni-enteni) implies that it is part of the process of development. Only 21% of the mothers were worried or expressed concern about diarrhea. (Griffiths et al., 1980)

MIDWIVES' HEALTH CONCERNS: Although most traditional midwives (70%) do not advise mothers about sick children—a task usually left to the traditional healer-- they offered the following list of characteristics for recognizing sick children: child has fever (45%); child is weak (36%); child will not eat (18%); child cries and is difficult to manage (18%); child has cough (9%); or child has diarrhea (9%). Their advice was to feed the child soft foods or take it to the Health Center. (Griffiths et al., 1980)

MIDWIVES' DIARRHEA REMEDIES: Traditional midwives asked about treating children with diarrhea, in 82% of the cases, recommended jamu as a drink or as a poultice, placed on the stomach. They agreed that children with diarrhea should continue to be breast fed. Only 20% of them had heard of sugar-salt solutions, and none of them knew the correct method of preparation. (Griffiths et al., 1980)

DIARRHEA MEDICINES: Storeowners sell a variety of diarrhea medicines: norit, tabonal, and CIBA in Java; sulfa and Estri in South Sumatra; and sometimes oral rehydration salts in Yogyakarta. (Griffiths et al., 1980)

DIARRHEA MEDICINES: Fifty-five percent of the storeowners selling diarrhea medicines reported that mothers had occasionally sought their advice on health questions. If asked what they would recommend for diarrhea, 75% would reportedly recommend pills; 30% would recommend a local jamu; and 25%, going to the Health Center. Only one storeowner mentioned making a sugar-salt solution, although she did not know the correct way to prepare it. (Griffiths et al., 1980)

VITAMIN A CAPSULES: Of the mothers who had given their children vitamin A capsules, only a few could remember the dose administered, and 74% of them had no idea what the capsules were for. (Griffiths et al., 1980)

VITAMIN A CAPSULES: Mothers asked what the purpose of vitamin A capsules was said they thought they increased appetite, were intended for fat people, or were taken for health. Only one person said it was for better eyes. (Griffiths et al., 1980)

VITAMIN A CAPSULES: Investigators reported that in communities where vitamin A capsules are distributed, there is confusion about what the capsules contain, and how often they should be taken. Some mothers reportedly believe that the capsules contain fish oil and should be taken daily. (Griffiths et al., 1980)

WEIGHING: Often mothers said that newborns and very young children were not old enough to be weighed. (Griffiths et al., 1980)

CUCUMBERS AND DIARRHEA—IRIAN JAYA: Cucumbers are of the food crops grown in Catabou and believed to be good for treating diarrhea. (Eng, 1982a)

PAPAYA AND DIARRHEA—IRIAN JAYA: Papayas are grown in Ugjek and are traditionally thought to be good for treating diarrhea. (Eng, 1982a)

RURAL

SCALY SKIN: As a remedy for scaly skin, a child might be put on a fish-free diet by either traditional practitioners or public health nurses. (Chapman, 1980)

URBAN

FOOD AVOIDANCE WITH DIARRHEA: Mothers mentioned not giving the following foods to children with diarrhea: chili, salted fish, ripe papaya, fried foods, green vegetables. (Gracey, 1978)

3. DIETARY PRACTICES

3.1 DIETARY PRACTICES, GENERAL

NATIONAL

DIET: The typical diet is based on plain boiled rice. When rice is insufficiently available, it is supplemented with corn, cassava, or sweet potatoes. The main source of animal protein is fish, usually slated or dried. Fish consumption averages 23.5 grams per person per day. The consumption of other meats and eggs is low. Meat consumption averaged 3.02 grams per person per day; eggs, 2.3 grams. Legumes are a readily available source of vegetable proteins which are processed into foods such as tahu, tauco, tempe, and germinated beans, but these are not frequently consumed and do not constitute an average daily menu. Occasionally leaves of cassava, sweet potato, and papaya are eaten. (Winarno and Bushan, 1981)

DRIED SALTED FISH: Dried salted fish are one of the cheapest foods with which to supplement cereals to attain a higher calorie and protein intake. (Sajogyo, 1974)

PULSES: Pulses are one of the cheapest foods with which to supplement cereals to attain a higher calorie and protein intake. (Sajogyo, 1974)

TEMPE: Tempe is a food made from fermented soybeans. Due to fermentation, the soy beans require much less boiling (hence, less fuel) to cook. Also, the initial fermentation process doubles the riboflavin content, niacin increases nearly seven times, and vitamin B_{12}, absent in the soybean, is produced in nutritionally significant quantities. (Israel, 1981)

FRUITS--CHILDREN: A very high percentage of all children, male and female, with and without xerophthalmia, do not consume fruits. (Susanto, 1980)

FRUITS AND XEROPHTHALMIA: Thirty percent of families in Lombok with xerophthalmic children did not consume fruits at all, along with 5% of families in Ambon, 6% in West Java. However, this observation is not conclusive. (Susanto, 1980)

GREEN LEAFY VEGETABLES AND XEROPHTHALMIA: Widespread availability and consumption of green leafy vegetables were found both in families where xerophthalmia was present and in families where xerophthalmia was not present. Its pattern of use did not appear to differ between the two groups in a significant way. (Susanto, 1980)

EGGS--CHILDREN: Twenty to fifty percent of all children nationally do not consume eggs. (Susanto, 1980)

EGGS AND XEROPHTHALMIA: Many families in high-risk xerophthalmia areas cannot afford eggs. Such areas would include East Java, Bali, Lombok, Sulawesi, Ambon, and Central Java. (Susanto, 1980)

3.1 DIETARY PRACTICES, GENERAL (Cont.)

SUGAR: More than 90% of the people consume sugar as part of their daily diet, except in Bali, where most families do not use sugar. (Susanto, 1980)

BULK BUYING: Following a nutrition program in a village, some village women in East Java organized themselves during the dry season to go and buy red beans, soy beans, and salted fish in bulk from a larger market, where they could be gotten more cheaply. They would, in turn, resell these foods to other mothers who had participated in the nutrition circle at prices lower than the prevailing ones. (YIS, 1980)

CALORIE AND PROTEIN DEFICITS: The average food deficit was 400 calories and 13 grams of protein per person per day. (Sajogyo, 1974)

PROTEIN DEFICIT: Twelve out of 30 villages surveyed had dangerously low levels of intake based on 1971 FAO/WHO standards, which recommend a minimum protein consumption of 40 grams per person per day. (Sajogyo, 1974)

REGIONAL

RICE AND CORN--CENTRAL JAVA: Twenty-five out of the 30 villages surveyed had a rice and corn food pattern. (Sajogyo, 1974)

FRUITS--TYPES EATEN: The fruit most frequently eaten during the week prior to the investigation was bananas (85%). Papaya was mentioned by 58%. Other fruits mentioned by a few women were watermelon, pineapple, guava, and mango. Forty-seven percent of the homes had no fruits at the time of the investigation; 43% had only bananas; the remaining homes had oranges or sawo. (Griffiths et al., 1980)

FRUITS--ACCESS: Fruits were universally considered to be expensive to purchase. Sixty-three percent of the women said that the only fruits available in the home came from the yard. (Griffiths et al., 1980)

INTRAHOUSEHOLD DISTRIBUTION OF FRUITS: Ninety-five percent of the mothers said that fruit was for everyone in the family; 61% said that fruit is given preferentially to children. Children may eat it at any time; adults usually eat it after a meal. (Griffiths et al., 1980)

VEGETABLES--TYPES USED: Seventy households were included in an investigation of fruit and vegetable use. Ninety-two percent of the women reported serving some kind of green, leafy vegetable during the week. Forty-nine percent of these reported serving bayam (similar to spinach), and 41% used kangkung (swamp cabbage). Other vegetables used included cabbage (25%), long or green beans (buncis) (25%), jackfruit (21%), Chinese cabbage (sawi putih) (13%), white squash (13%), young papaya (11%). The use of green, leafy vegetables and long beans was universal; the use of cabbage was most frequent in Yogyakarta. (Griffiths et al., 1980)

VEGETABLES--TYPES USED: Investigators inventoried fruits and vegetables in the homes of women who reported using them. The ones they found most often were: green, leafy vegetables (43%), long beans (20%), cabbage

(14%), young papaya (11%), and others. Fourteen percent of the homes had no vegetables at the time of the investigation. (Griffiths et al., 1980)

VEGETABLES--ACCESS: Forty-nine percent of the women purchase their vegetables from local shops or the market. Thirty-four percent obtain theirs from the fields as well as stores; 10% obtain all their vegetables from gardens or fields. However, the investigation occurred during the dry season. Women in Ngipak, Krikilan, and Dawungan who reported buying vegetables said that in the rainy season all their vegetables come from the garden. Women in Bejihardjo, Ngipak, and Dawungan who rely on markets only purchase vegetables once every five days. Women in Sido Agung, SidoMoyo, and Krikilan complained that stores often run out of vegetables, and they are unable to purchase any for several days. (Griffiths et al., 1980)

GREEN LEAFY VEGETABLES--PREPARATION: Fifty-nine percent of the women prepare greens by themselves by boiling them until they are soft. Forty-one percent reported preparing greens together with other foods, such as coconut milk, tahu and/or tempe, long beans, and chili. (Griffiths et al., 1980)

GARDENS: Gardens are grown only during the rainy seasons. usually foods produced are for family consumption, although in some areas where families have large gardens, 50% of what is produced is sold. (Griffiths et al., 1980)

HOME GARDENS: Sixty-three women were interviewed about home gardens. Eighty-nine percent reported growing at least a few things around their homes. The major foods grown are: papaya (64%), banana (61%), cassava (43%), bayam (42%), beans (41%), kangkung (10%). Other foods grown are: tomatoes, squash, and eggplant. (Griffiths et al., 1980)

GARDENS: Villages where some people do not have gardens are SidoAgung, SidoMoyo, and Ngipak. (Griffiths et al., 1980)

COMPLAINTS ABOUT GARDENS: Most people had no complaints about gardens; others complained of animals eating their plants; 71% of the respondents claimed to have their gardens fenced. Only 7% of the families have received any help or advice with their gardens. (Griffiths et al., 1980)

HOUSEHOLD INCOME AND DIET: The median household income for 58 pregnant women surveyed is Rp.450, an amount that would impose difficulty in complying with nutrition recommendations. (Griffiths et al., 1980)

EXPENDITURES FOR SNACKS: The price of a snack is generally less than Rp.25 per day, broken down as follows: Rp. 0-10 (39%), Rp. 11-25 (48%), Rp. 26-50 (4%), Rp. 50+ (9%). Mothers spending more than Rp. 25 per day were all from South Sumatra. (Griffiths et al., 1980)

VITAMIN A--CENTRAL JAVA: High vitamin A intake in Sapuran may be the result of numerous home gardens in this area. (Griffiths et al., 1980)

MEALS--CENTRAL JAVA: Investigators observed that most women in Sapuran eat at least three large meals a day. (Griffiths et al., 1980)

MEALS BY REGION: Investigators observed that women in Godean, Karangmojo, and Masaran eat two full meals a day, or three small meals. (Griffiths et al., 1980)

WHEAT: Fifty percent of the families in Lombok, Bali, and East Java do not provide wheat in the daily diet, whereas in South Sumatra, Central Kalimantan, and Ambon, most families use it in their daily diet. (Susanto, 1980)

FISH: It is considered to be relatively cheap, and yet 40% of families living in Lombok, Bali, East Java, and Central Java cannot afford it. It is part of the daily diet in Kalimantan and Ambon. (Susanto, 1980)

MSG CONSUMPTION: In Lombok and South Sumatra, between one-fifth and one-third of the families do not include MSG (monosodium glutamate) in their daily diet. In West Java, Central and East Java, Bali, Ambon, Central Kalimantan, and North Sulawesi, more than 90% of the people use it. (Susanto, 1980)

CALORIE AND PROTEIN INTAKES--BALI AND WEST NUSA TENGGARA: Average calorie consumption for this area, from the ANP evaluation study was 1,693 calories/person/day, which included 42.8 grams of protein, 15% of which (6.5 grams) was of animal origin. Fat intake was 12 grams per day. (Sajogyo, 1974)

FOOD CROPS--IRIAN JAYA: Food crops in Catabou include green (string) beans (both the leaves and the pod are eaten), pumpkins, peanuts, corn, five varieties of taro, ten varieties of sweet potato, sugar cane, bananas, and cassava. (Eng, 1982a)

FOOD CROPS--IRIAN JAYA: Foods grown and eaten in Ugjek include: Andanmop, a short plant somewhat like bamboo, eggplant, soybeans, and cabbage. Pandanus fruit (buah merah), an oil fruit, is imported and is apparently well-liked. (Eng, 1982a)

CROPS--IRIAN JAYA: The principal food crops in the Bird's Head area, Irian Jaya, are: sweet potatoes (10 varieties), peanuts, sugarcane, bananas, taro (5 varieties), corn, pumpkin (leaves and fruit), stringbeans (leaves and pod), cucumbers, Labu siang, cabbage, sayur bedsi, cassava, adanmop, papaya, and eggplant. (Eng, 1982a)

CROPS--IRIAN JAYA: Several crops are grown in the Bird's Head area, here listed in the order in which they are harvested: corn, pumpkin leaves and fruit, and sweet potatoes. (Eng, 1982a)

FOOD PREPARATION AND CONSUMPTION--IRIAN JAYA: Brief house visits were made to observe food preparation and consumption patterns. Homes were selected on the basis of whether there was a fire going, since fire is required for roasting sago balls. Foods being prepared were as follows: sago balls only (83.3%), sago balls and fish (8.3%), sago and wild pig (8.3%). During a morning visit the following day, sago alone was being prepared in all homes visited. No one was observed eating lunch that day or the following day. The morning of the third day, sago alone was being prepared in 61.5% of the homes; sago and fish in 15.4%, and sago with

nipa, or with fish and termites in another 23.1% of the homes. (Eng, 1982b)

VEGETABLES--IRIAN JAYA: No vegetables were observed being consumed in Sawaer during the home visits. Only one home was observed to have fern, which was being saved for a future meal. (Eng, 1982b)

GREEN LEAFY VEGETABLES--IRIAN JAYA: The intake of green leafy vegetables in Syuru and Sawaer was thought to be minimal, based on observations and interviewing. (Eng, 1982b)

GREEN VEGETABLES--IRIAN JAYA Amaranthus (bayum) is a green vegetable that has been tried as a food crop in Cata, but it does not appear to grow well. (Eng, 1982a)

PINEAPPLES--IRIAN JAYA: Pineapples are one of the fruits grown in Catabou. They are usually planted where the soil is too poor to grow vegetables or sweet potatoes. (Eng, 1982a)

FRUIT TREES--IRIAN JAYA: Lemon, papaya, and mango trees grow in Yamesh, Irian Jaya. The village people also plant nipa and sago palms. (Eng, 1982b)

CHICKENS--IRIAN JAYA: In Ugjek, chickens are allowed to roam freely around the home area and the adjacent garden. (Eng, 1982a)

GOATS AND PIGS--IRIAN JAYA: Pigs and goats are raised in Catabou as a special food, killed only on special occasions. (Eng, 1982a)

FISH--IRIAN JAYA: Women in Yamesh were observed catching shrimp and other fish in the small ditches between the homes in the village. Fish are also plentiful in the river, and there is also a fish pond project stocked with Tilapia. (Eng, 1982b)

RECIPE FOR SAGO BALLS--IRIAN JAYA: To prepare sago balls, sago flour is mixed with a little water and kneaded into a ball, then it is put into the fire and roasted. Wooden forceps are used to turn it so that it cooks evenly. When it is lightly charred, it is brushed off to remove the charred bits. The cooked sago "skin" is then removed and eaten; the interior portion of the sago ball is returned to the fire to be charred again. (Eng, 1982b)

SAGO STORAGE--IRIAN JAYA: Large blocks of sago and parts of the nipa plant are usually stored on racks above the fire, where they become smoked. The large sago bola is said to last for one month. Sago and nipa are thought to go bad if stored in any other manner. (Eng, 1982b)

HUNGER PERIOD--IRIAN JAYA: There is a hunger period in the Bird's Head area about 3 months between the harvesting of pumpkins and the harvesting of sweet potatoes. (Eng, 1982a)

HUNGER PERIOD--IRIAN JAYA: The hunger period in Catabou village lasts from the harvest of pumpkin until the harvest of the sweet potato, usually about 3 months. During this period, people eat only once a day,

usually in the evening. Families sometimes go to their parents' homes or try to buy food if they have money. (Eng, 1982a)

HUNGER PERIOD--IRIAN JAYA: During this period, which lasts from the harvest of the pumpkin to the harvest of the sweet potato, people eat leaves from the forest (mising kapar), jambu, and a wild bush banana (bungputta). (Eng, 1982a)

FOOD MARKET--IRIAN JAYA: A fresh food market was only recently established in Miyambou to provide food for people working at the mission station, and to provide a source of income for the villagers. It is held on Tuesdays and Saturdays from 6:30 to 7:30 or 8:30 a.m. Foods available on a November 29-December 1 visit were as follows: sweet potatoes, taro, corn, Irish potatoes, pandanus fruit, coconut oil, cassava, garlic, lemon grass, red onions, eggs, chicken, kidney beans, papaya leaves, gedi (aibika), lettuce, pumpkin, cucumbers, young squash, celery, amaranthus (bayum), string beans, eggplant, chayote, tomatoes, mustard greens, tree tomatoes, purple passionfruit, pineapples, bananas, papaya, tangerines, packaged puffed rice, krupuks, and Ai-won meat tenderizer (Eng, 1982a)

GARDENS--IRIAN JAYA: There are 12 large public gardens for the village in Ugjek, in addition to private household gardens. (Eng, 1982a)

GARDEN RESPONSIBILITIES--IRIAN JAYA: In Catabou, men are responsible for clearing the land; and women, for burning the garden. Men and women both share the responsibility for planting and harvesting the crops. (Eng, 1982a)

SALT--IRIAN JAYA: Parts of the nipa plant are used to make salt. It is usually stored on racks above the fire until it is used. (Eng, 1982b)

COOKING--IRIAN JAYA: Fish and wild pig are prepared by putting them directly on the fire to be roasted. Termites are usually roasted in the over-ripe nipa fruit shells, or in the root-trunk of the nipa palm where they are often found. (Eng, 1982b)

CALORIE AND PROTEIN INTAKES--CENTRAL JAVA: Java households had the lowest average calorie consumption of all households surveyed in the ANP-evaluation study. Average calorie intake was 1,404 calories per day, of which 49% was from rice. Protein intake was 37.8 gram per day of which 12% (4.5 gram) was of animal origin. The remainder was from rice. (Sajogyo, 1974)

CORN AND RICE--NUSA TENGGARA TIMUR: The staple food in Nusa Tenggara Timur was traditionally corn, but people are switching to rice, even though corn is half the price of rice and has nutritional advantages. (Griffiths and Pyle, 1982)

HUNGRY SEASON--NUSA TENGGARA TIMUR: In many parts of Nusa Tenggara Timur, people experience a hunger season, and many suffer from protein-calorie malnutrition. (Griffiths and Pyle, 1982)

DIET ON RUBBER ESTATE--NORTH SUMATRA: The children sampled from the Gunung Pamela rubber estate were children of estate laborers, originally

from Central Java. their diet consisted primarily of yellow maize, which is a good source of carotene when eaten in sufficient quantities. Estate workers earn regular wages and receive medical care free of charge. (Kusin et al., 1977)

VITAMIN A--SOUTH SUMATRA: Vitamin A intake is high in Indralaya. This may be due to the abundance of home gardens in this area. (Griffiths et al., 1980)

LEGUMES--SOUTH SUMATRA: When questioned about legumes, respondents in Parit (South Sumatra) reported eating tahu, tempe, and mung beans. Respondents reported buying all legumes. (Griffiths et al., 1980)

LEGUMES--SOUTH SUMATRA: When questioned about legumes, respondents in Sakatiga (South Sumatra) reported consuming tahu, tempe, mung (hijau), red, green (buncis), and long beans, and peanuts. In Sakatiga, beans are both bought and grown at home. (Griffiths et al., 1980)

BEANS--SOUTH SUMATRA: Legumes are not frequently consumed in Sakatiga or Parit, although consumption is slightly higher in Parit. Eighty-four percent of all respondents reported consuming tahu or tempe 2-3 times a week; one respondent reported eating beans 4-7 times a week. Eighteen percent of the respondents had legumes in their homes at the time of the investigation. (Griffiths et al., 1980)

BEANS AND FISH--RELATIVE COST--SOUTH SUMATRA: During the season in which the investigation was conducted, beans were less expensive than an equivalent amount of fish. (Griffiths et al., 1980)

PREPARATION OF BEANS--SOUTH SUMATRA: All families in Sakatiga and Parit prepare bean porridge (bubur). In Sakatiga, half of the respondents also prepare boiled beans. (Griffiths et al., 1980)

PROTEIN INTAKE--SOUTH SUMATRA: In Indralaya protein intake is low. This may be due to exclusive reliance on fish for protein, rather than legumes. (Griffiths et al., 1980)

CALORIE AND PROTEIN INTAKES--SUMATRA: Sumatra had the highest average food intake of all households in the ANP evaluation study. The average calorie consumption was 1,700 calories per day, including 47.5 grams of protein, of which 29% or 13.9 grams was of animal origin. (Sajogyo, 1974)

RURAL

RICE: Rice was the favorite staple. It had very high status, and belief in its nutritional value was strong. Babies were weaned on it. Children were exhorted to clean up every grain of rice on their plate or else "the chickens will die." Those who could not afford rice, made corn and cassava into rice-like forms. Cultural allegiance to rice was very strong. (Chapman, 1980)

DIET AND INCOME: The diet of the rich showed a trend toward more variety in the use of a greater number of vegetable dishes and in the occasional use of eggs, chicken, and milk. The rich households averaged 7.6

3.1 DIETARY PRACTICES, GENERAL (Cont.)

vegetable dishes during a six-day period, the middle income households cooked six, and the poor 5.6 dishes. (Chapman, 1980)

TRASSI--DISTRIBUTION: Trassi, fermented fish paste, was used in 24% of households in rural Central Java. Foods containing trassi were given to adults but not to children under 10 years. The poor cooked without it. (Chapman, 1980)

MONOSODIUM GLUTAMATE: Monosodium glutamate has begun to compete with the traditional fish flake condiment. The rich tended to add MSG to recipes while the poor used it to replace fish flakes thus eliminating an important source of iodine in the diets of young children. (Chapman, 1980)

DIETARY PATTERNS--RURAL JAVA: Two meals were eaten each day, one at midday and one in the evening. Most of the calories in the diet were supplied by the staple foods (rice for the wealthy and corn and cassava for the poor) supplemented by small helpings of side dishes consisting of highly spiced locally grown vegetables or dried fish. Meat, eggs, or milk were rarely included in the diet. Fat intake was very low. Protein sources were largely the rice or leguminous vegetable. (Chapman, 1980)

STAPLE FOODS--EAST JAVA: Staple foods included rice, maize, and cassava. Tubers such as sweet potatoes were also eaten as well as breadfruit. Pulses and soybean products such as "tahu" and "tempe" were eaten frequently as well as leafy vegetables. (Kusin et al., 1979)

DAILY FOOD PATTERN--EAST JAVA: The daily menu of rural people consisted of the staple food of the area, a hot relish (sambal) or salt and a vegetable dish (sayur or urab). The main animal protein source was salted or fermented fish eaten in small amount a few times per week. Pulses and soybean products (tahu or tempe) were generally eaten irregularly. (Kardjati et al., 1978)

IODINE SOURCES--JAVA: The traditional iodine sources for interior rural Javanese populations were fish flakes, fish paste, and small dried fish. Young children and pregnant and nursing mothers were generally not given dried fish or fish paste. Fish flakes in the soupy portion of vegetable dishes known as kuah were considered very nutritious and were preferentially given to children. Unfortunately, these flakes are now often replaced by MSG. (Chapman, 1980)

3.2 DIETARY PRACTICES, WOMEN

3.2.1 DIETARY PRACTICES, WOMEN, DURING PREGNANCY

REGIONAL

BREAST FEEDING AND PREGNANCY: None of the women surveyed were breast feeding another child while pregnant. (Griffiths et al., 1980)

SOURCES OF DIETARY ADVICE: About half (51%) of the women reported receiving no advice about their diets during pregnancy. Of the half who had received advice, the majority (70%) reported being told to eat lots

of fruits and vegetables, and 30% reported being told to eat more food. (Griffiths et al., 1980)

AMOUNTS OF FOOD: In SidoAgung, all of the women reported eating less during pregnancy. In Ngipak, Tempur Sari, Tempuran Duwur, and Saka tiga, over 60% of the women reported eating more. (Griffiths et al., 1980)

AMOUNTS OF FOOD: Only 39% of the pregnant women said that they ate more food than before they were pregnant, compared to 59% who reported feeling hungry. Thirty-two percent claimed to eat the same amount; 29% reported eating less. (Griffiths et al., 1980)

EATING FOOD: Fifty-five percent of the women who reported increasing their food consumption during pregnancy reported eating more meals; 33% reported eating more snacks. Only a few women reported eating more at each meal. (Griffiths et al., 1980)

HUNGER DURING PREGNANCY: Fifty-nine percent of the women reported feeling hungry during pregnancy. Forty percent said they were often hungry, although responses varied from village to village. A large proportion of women in SidoAgung, Bejihardjo, and Krikilan reported no feelings of hunger. (Griffiths et al., 1980)

DIET AND FATIGUE: In some villages a high percentage of the women complained about their health and said they felt tired. These were the same women who claimed that they did not feel hungry during pregnancy, who only ate two meals a day, and had low recall scores when questioned by investigators. (Griffiths et al., 1980)

SNACKS: Sixty percent of the women reported eating snacks during pregnancy. (Griffiths et al., 1980)

INCREASED DIETS-INTAKE: When counselled about improving their diets, women generally did not change the normal food pattern but simply increased quantities. (Griffiths et al., 1980)

IMPROVED DIETS--BUDGET: The fact that many women complied with the recommendation to eat more snacks and protein food during pregnancy was taken as an indication of some elasticity in their budgets. A few women claimed that they did not have enough money, but the number of these women was less than expected. (Griffiths et al., 1980)

IMPROVED DIETS--VEGETABLES: When counselled about improving their diets, women generally were most enthusiastic about eating more vegetables. Some however could not comply due to the unavailability of green vegetables during the dry season, especially in Karangmojo and Masaran areas. Greens were available in Godean but had to be purchased. (Griffiths et al., 1980)

IMPROVED DIETS--MEALS: Women were counselled about improving their diets. Responses indicated that women would prefer to eat an extra meal during the day but that, in general, they were unable to do so because they could not cook fresh food in the morning or simply did not have the time to eat. Women generally found it easier to increase their portions

slightly at each meal, rather than preparing an extra meal. Others said they did not feel hungry. (Griffiths et al., 1980)

IRON SUPPLEMENTS: Eighty-three percent of the women said they had never seen the iron tablets supplied by UNICEF that are distributed through the government system. Only two of them knew why iron supplements should be taken. In cases where women received iron supplements through the government system, they reported only getting enough for four or five days. Dosages recommended were not uniform and ranged from one to three tablets a day. (Griffiths et al., 1980)

IRON SUPPLEMENTS: Reactions from taking iron pills during a trial varied. Forty-three women (88%) took them correctly for the duration of the trial. Fifty-seven percent did not notice an unusual taste; 43% claimed that it made them taste and smell "fishy." Some reported darker, black, or harder feces. The five women (12%) who did not participate claimed that the tablet caused them to vomit. (Griffiths et al., 1980)

BENEFITS OF IRON SUPPLEMENTS: Benefits reported by women participating in the iron supplement trials included: better sleep, feeling healthier, stronger and more energetic. Several mentioned experiencing less dizziness, and all women asked for more tablets. (Griffiths et al., 1980)

JAMU: Jamu, herbal drinks consumed by pregnant and lactating women, are reportedly used by 70% of the pregnant women surveyed in Java. In contrast, none of the women in South Sumatra reported drinking any. Of those drinking it, the majority used it at least once a week. No one reported drinking it every day. (Griffiths et al., 1980)

DIET--IRIAN JAYA: Pregnant women in Catabou reportedly crave chicken, eggs, pork, and other meats, but these are frequently no available. Pregnant women also like to eat pandanus fruit (buah merah) although this is only available in season. Women reportedly eat three times a day during pregnancy and are apparently not afraid of having large babies. (Eng, 1982a)

FOOD AVOIDANCE--IRIAN JAYA: According to the wife of the local pastor, foods that women in Catabou traditionally avoided during pregnancy were deer meat and wild pig, althoughd eer meat is not longer available, and in any case the tradition is disappearing. (Eng, 1982a)

STANDARD DIET--CENTRAL JAVA: The standard daily diet from pregnant women in Sapuran, based on recall, contains: corn (cooked like rice), cassava, salted fish, tempe, and greens. (Griffiths et al., 1980)

IMPROVED DIETS--CENTRAL JAVA: When counselled about improving their diets, women in Sapuran most frequently (50% of the women) incorporated coconut milk and banana into their diets. (Griffiths et al., 1980)

EXTRA FOOD--CENTRAL JAVA: A little over 10% of women interviewed during the prospective phase of the study reported increasing consumption of certain foods, especially green vegetables, sour fruits, and watery vegetables. They reported eating these foods to satisfy cravings rather than for health reasons. (Hull, 1977)

FOOD AVOIDANCE--CENTRAL JAVA: Less than 10% of the pregnant women reported avoiding or decreasing food because of pregnancy. (Hull, 1977)

COMPLICATIONS--CENTRAL JAVA: Symptoms of "morning sickness," unusual behavior, and food cravings were more likely to be found among younger, educated women. (Hull, 1979)

PREGNANCY AND WORK--CENTRAL JAVA: About 50% of rural women surveyed in the third trimester of pregnancy worked outside the home. Cross-sectional data on time spent in and out of the home indicated almost no change in this pattern for women in the later stages of pregnancy. (Hull, 1977)

STANDARD DIET--SOUTH SUMATRA: The standard daily diet for pregnant women in South Sumatra, based on recall, contains: rice, fish, greens, banana, and sugar. (Griffiths et al., 1980)

IMPROVED DIETS--SOUTH SUMATRA: When counselled about improving their diets, women in South Sumatra most frequently (50% of the women) incorporated sagu, tempe, and green (mung) bean porridge into their diets. (Griffiths et al., 1980)

STANDARD DIET--YOGYAKARTA AND CENTRAL JAVA: The standard daily diet for pregnant women in Yogyakarta Province and the subdistrict of Masaran, based on recall, contains: rice, tempe, greens, cabbage, coconut milk, and sugar. (Griffiths et al., 1980)

IMPROVED DIETS--YOGYAKARTA AND CENTRAL JAVA: When counselled about improving their diets, women in Yogyakarta Province and Masaran most frequently (50% of the women) incorporated cassava, tahu, and banana into their diets. (Griffiths et al., 1980)

FOOD INTAKE: 59% of women reported that they felt hungry during their pregnancies; 40% said they were hungry often. However, only 39% reported eating more food than before they were pregnant. 32% said they ate the same amount, and 29% said they ate less when pregnant. Those who ate less generally reported experiencing nausea during their pregnancy. Women who ate more reported eating more meals (55%) or more snacks (33%); only a small number reported eating more at each meal. (Griffiths et al., 1980)

FOODS RESTRICTED IN PREGNANCY: 67% of women reported no food avoidance during pregnancy. Foods believed to be harmful to pregnant women included kepel, chili, cucumber, ripe papaya, sugar cane, and ice which were mentioned in Java. In South Sumatra several women avoided the flower of the banana tree, jackfruit, cempedak, and catfish. Women avoided these foods in the belief they could prevent difficult or excessively bloody deliveries. (Griffiths et al., 1980)

JAMU--JAVA: Jamu, herbal drinks, were used by 70% of pregnant women in Java. No women in South Sumatra reported drinking jamu. The type of jamu varied by region. Women reported that jamu relieved feelings of fatigue and warmed their bodies, which was believed to be important during delivery for a healthy baby. (Griffiths et al., 1980)

3.2.1 DIETARY PRACTICES, WOMEN, DURING PREGNANCY (Cont.)

FLUID CONSUMPTION BY REGION: Fluid consumption is highest in South Sumatra (where no one drinks jamu) and lowest in the Godean villages, where women commonly drink jamu (herbal teas). (Griffiths et al., 1980)

3.2.2 DIETARY PRACTICES, WOMEN DURING LACTATION

NATIONAL

USE OF HEALTH CENTERS: The percentage of lactating mothers covered by Health Centers throughout Indonesia rose from 3.9% to 6.7% between 1974 and 1978. (Sugiono, 1979)

REGIONAL

FOOD AND DRINK CONSUMPTION: Women asked about eating and drinking more during lactation reported as follows: 75% felt hungry; 67% felt thirsty; 96% of those who felt thirsty reported drinking more; 76% of those who felt hungry reported eating more, usually rice and snacks. Those who were hungry but did not eat offered no explanation. (Griffiths et al., 1980)

FLUID CONSUMPTION DURING LACTATION: Lactating women asked about their daily fluid consumption reported as follows: 39% drank four glasses or less; 51% drank five to six glasses; 7% drank seven to eight glasses; 4% drank more than eight glasses. (Griffiths et al., 1980)

DIETARY IMPROVEMENTS: When dietary improvements were suggested to lactating women, fluid consumption increased by approximately three glasses. Consumption of green vegetables also increased. Protein and calorie sources were more problematic, although some women were able to increase each of them at regular meals. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--FLUIDS: The results of trials with lactating women indicated that they were willing to try to improve their diets. Ninety-four percent increased their consumption of fluids. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--EXTRA FOOD: Lactating women who tried were more successful in increasing their portions at regular meals than in trying to prepare an extra meal. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--VEGETABLES: Lactating women who were asked to increase their consumption of green vegetables were willing to do so, because they believed it would "freshen" their milk. Those who did not increase their consumption explained that green vegetables were hard to get during the dry season. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--RESULTS: The lactating women's comments after the trial modification of their diets were generally positive. They stated that they had more breast milk, that their breasts were fuller, that their breasts filled more quickly, and that infants drank more and seemed more satisfied. Some had to increase the number of times they breast fed their babies. (Griffiths et al., 1980)

DIETARY MODIFICATIONS AND BREAST MILK: After the trial modifications to their diets, only 3 of the 58 lactating women reported no difference in the amount of breast milk they produced. (Griffiths et al., 1980)

SWEET POTATOES: Sweet potatoes, which can be boiled or fried at home, are the most common snack. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--PROTEIN: The majority of lactating women asked to increase their consumption of protein foods, such as tahu, tempe, and fish, were able to do so. (Griffiths et al., 1980)

JAMU: These herbal drinks are common in Java, but they are not used in South Sumatra. In Java, 50% of the nursing women reportedly drink it at least once a day, 16% said they drank it several times a week, 26% said they drank it once a week (usually on market day), and 7% said they did not drink it at all. (Griffiths et al., 1980)

GREEN LEAFY VEGETABLES: Consumption of green leafy vegetables was very high in Sakatiga, Tempur Sari, and Tempuran Duwur. This is due, in part, to the popularity of home gardens. (Griffiths et al., 1980)

FOOD AVOIDANCE--CENTRAL JAVA: About one-third of mothers questioned reported changes in their diet during lactation, involving either reduction in quantity, or avoidance of certain foods. The foods most commonly reported included: sour fruits, chilis, and cold drinks. About half of them reported increased consumption of spinach, papaya leaves, watercress, and other green vegetables. Ninety-six to ninety-eight percent reported drinking herbal mixtures as an aid to breast feeding. (Hull, 1977)

LEFT BREAST FAVORED--CENTRAL JAVA: Investigators observed that women in Java always began feeding their babies with the left breast. Mothers seldom used the right breast, claiming that it did not have enough milk. Medical evidence showed that more women had breast problems in the right breast. (Griffiths et al., 1980)

PROBLEMS--CENTRAL JAVA: Some women had problems such as nipple soreness and variable milk supply. (Hull, 1979)

MILK SUPPLY--CENTRAL JAVA: Fewer than 10% of the women in Ngaglik reported inadequate milk supply. (Hull, 1979)

JAMU--CENTRAL JAVA: The majority of women drink jamu during pregnancy (85%) and during lactation (95%) to improve the quality and quantity of breast milk. Little is known about the value or harm of these mixtures. (Hull, 1979)

STANDARD DIET--CENTRAL JAVA: The standard daily diet (foods eaten by 50% of the women) for lactating women in Sapuran included: corn, cassava, tempe, salted fish, greens, sugar, and coconut milk. (Griffiths et al.,1980)

DIETARY IMPROVEMENT--CENTRAL JAVA: Dietary improvement in Sapuran was due to an increase in quantity with respect to the standard diet and not to different foods added. (Griffiths et al., 1980)

3.2.2 DIETARY PRACTICES, WOMEN DURING LACTATION (Cont.)

STANDARD DIET--SOUTH SUMATRA: The standard daily diet (foods eaten by 50% of the women) for lactating women in South Sumatra included: rice, salted fish, fresh fish, greens, oil, and banana. (Griffiths et al., 1980)

DIETARY IMPROVEMENTS--SOUTH SUMATRA: Dietary improvement in South Sumatra was partly due to the addition of tempe and two fruits to the diet: sawo and guava. (Griffiths et al., 1980)

JACKFRUIT--SOUTH SUMATRA: Some women in South Sumatra reported avoiding jackfruit, catfish, or sawo for the first forty days after delivery. (Griffiths et al., 1980)

STANDARD DIET--YOGYAKARTA AND MASARAN: The standard daily diet (foods eaten by 50% of the women) for lactating women in the Special Territory of Yogyakarta and the subdistrict of Masaran includes the following: rice, tiwul (cassava), tempe, greens, cabbage, sugar, and coconut milk. (Griffiths et al., 1980)

DIETARY IMPROVEMENTS--YOGYAKARTA AND MASARAN: Dietary improvement in Yogyakarta and Masaran was partly due to the addition of tahu, fried salted fish, and sweet potato and/or banana to the diet. (Griffiths et al., 1980)

3.3 DIETARY PRACTICES, INFANTS 0-24 MONTHS

3.3.1 DIETARY PRACTICES, INFANTS 0-24 MONTHS, BREAST FEEDING

NATIONAL

PREVALENCE, AGE, AND LOW INCOME: The percentage of infants of low socioeconomic level, breastfed, by age was: 0 to 3 months, 99.0%; 3 to 6 months, 72.7%; 6 to 9 months, 66.0%; 10 to 12 months, 32.1%; 13 to 18 months, 10.3%; 18 to 24 months, 2.1%; and over 24 months, 1.7%. (Sugiono, 1979)

PREVALENCE, AGE, AND MIDDLE INCOME: The percentage of infants of middle socioeconomic level, breastfed, by age was: 0 to 3 months, 83.1%; 3 to 6 months, 53.0%; 6 to 9 months, 36.1%; 10 to 12 months, 13.2%; 13 to 18 months, 1.2%; 18 to 24 months, 0; and over 24 months, 0. (Sugiono, 1979)

PREVALENCE, AGE, AND HIGH INCOME: The percentage of infants of high socioeconomic level, breastfed, by age was: 0 to 3 months, 81.4%; 3 to 6 months, 44.2%; 6 to 9 months, 44.2%; 10 to 12 months, 7.8%; 13 to 18 months, 6.2%; 18 to 24 months, 0; and over 24 months, 0. (Sugiono, 1979)

DURATION: The average duration of breast feeding was 20 months, with no data available on mothers' milk production or mothers' nutritional status. (Sajogyo, 1974)

ONE BREAST USED: The National Commission on Breastfeeding found that a significant number of mothers nurse with only one breast. (IBFAN, 1981)

REGIONAL

BEGINNING LACTATION: Twelve percent of the mothers began nursing their children on the day of birth; 45% began nursing on the second day; 38% began nursing on the third day; 4% began nursing on the fourth day; and 2%, on the fifth day. (Griffiths et al., 1980)

PRELACTAL FEEDS--HONEY: In Indonesia, 75% of the mothers delay nursing after birth. In the interim, 47% of them give their infants food or water that is mixed with honey. The danger of botulina toxin, resulting from feeding honey to newborns, has been studied in the U.S. but apparently not in Indonesia. (Griffiths et al., 1980)

PRELACTAL FEEDS: Most mothers did not begin nursing right after birth. Instead, 30% reported giving babies mashed banana with honey; 17% gave babies honey water; and 13%, rice flour porridge with sugar. (Griffiths et al., 1980)

PREVALENCE: Ninety-two percent of children aged 9 to 17 months were breast fed; of these, 90% were breast fed on demand. Sixty-seven percent of children aged 18 months and older were still breastfed, 88% of the 67% on demand. (Griffiths et al., 1980)

DEMAND FEEDING: Of the 51 infants age 0 to 4 months surveyed, all but one were fed on demand. Forty-three percent were exclusively breast fed. (Griffiths et al., 1980)

FREQUENCY: Out of a sample of 41 infants 5 to 8 months old, 97% were breast fed both during the day and at night, 77% were breast fed on demand, 17% were breastfed 5 to 8 times a day, and 5% were breast fed only a few times a day. (Griffiths et al., 1980)

NIGHT FEEDINGS: All women reported that they nursed their babies at night. Investigators found that 60% nursed four times; 30%, five times; and 10%, six times over the course of the night. (Griffiths et al., 1980)

DURATION: The lactating mothers sample had been nursing their infants from half a month to 29 months at the time of the interview. The median number of months was nine. (Griffiths et al., 1980)

DIETARY MODIFICATIONS: Trial modifications were attempted in the behavior of mothers to improve the diets of their children (0-4 months). The first modification involved convincing them to use both breasts each time they nursed their babies. Most mothers were able to make the modification without much resistance. (Griffiths et al., 1980)

CONTACT WITH NEWBORNS: Fifty-eight percent of the mothers held their babies on the day of birth; 32% did not hold their babies until the second or third day after birth; 10% delayed contact with the baby until four to seven days after birth. (Griffiths et al., 1980)

MOTHER'S ABSENCE: The general pattern of feeding when mothers have to leave their babies for a short time is as follows: 37% feed before leaving and immediately after returning; 44% breast feed before leaving,

immediately after returning, and in addition leave some sweet tea to be administered if the child cries; 17% simply leave food; 3% (1 woman) left mixed milk for the child. (Griffiths et al., 1980)

DURATION--BALI: The age at weaning in Bali was as follows: 0-1 year of age (1%); 1 to 2 years (26%); over 2 years (56%); unknown (18%). (Sugiono, 1979)

INITIATION--IRIAN JAYA: Once a child is born, it is sometimes given the breast immediately, once the placenta is expelled. Sometimes there is a delay of one or two hours while the placenta is buried, or because the mother is exhausted. Colostrum is thought to be bad, but the baby is made to drink it so that the good milk will come. (Eng, 1982a)

DURATION--IRIAN JAYA: Babies are usually breast fed until the next child is born, a periody lasts from two to four years. (Eng, 1982a)

DURATION--CENTRAL JAVA: The age at weaning in Central Java was as follows: 0 to 1 year of age (1%); 1 to 2 years (48%); over 2 years (20%); and unknown (7%). (Sugiono, 1979)

DURATION--EAST JAVA: The age at weaning in East Java was as follows: 0 to 1 year of age (5%); 1 to 2 years (69%); over 2 years (20%); and unknown (7%). (Sugiono, 1979)

INITIATION--CENTRAL JAVA: Breast feeding was delayed for several days by most women because of reluctance to feed colostrum to the infant. However, it was postponed for even longer periods in women who gave birth in hospitals, because of hospital practice of separating mothers from infants. During the intervening period, infants were bottle fed. (Hull, 1977)

INITIATION--CENTRAL JAVA: Breast feeding frequently does not begin until 2 or 3 days after birth. Some women reported waiting until the infant cried. Many women who delayed reported not wanting to feed colostrum to the infant. (Hull, 1977)

PRELACTAL FEEDS--CENTRAL JAVA: Many women were reluctant to give colostrum to infants and, therefore, delayed breast feeding until "true milk" appeared. During that period, infants were fed honey, lime juice, or coconut. (Hull, 1977)

COLOSTRUM DISCARDED--CENTRAL JAVA: Over half of the women reported discarding colostrum because it was dirty and could cause illness to the child. (Hull, 1979)

FREQUENCY OF BREAST FEEDING--CENTRAL JAVA: Women in the survey most commonly reported breast feeding five times during the day and three times at night, for an average of 7-8 minutes each. (Hull, 1977)

TIME SPENT BREAST FEEDING--CENTRAL JAVA: Average sessions lasted 7-8 minutes, according to mothers. (Hull, 1977)

SUCKING SUBSTITUTES--CENTRAL JAVA: One-fourth to one-third of mothers interviewed between August and December 1976 (with infants born since January 1976) reported giving their infants sucking substitutes. These included: bottles and/or pacifiers and grandmother's breast. Substitutes were usually given when the mother left to go to work, or had time-consuming tasks to do at home, or if the child cried after being breast fed. Working mothers interviewed during this period were more likely to give their infants sucking substitutes than non-working mothers. (Hull, 1977)

WORKING MOTHERS--CENTRAL JAVA: In interviews, women reported that they breast fed just before leaving and after returning home from work. Most working mothers left their babies at home. Only one woman reported being called home when her baby cried. (Hull, 1977)

DURATION--SUMATRA: The age at weaning in Sumatra was as follows: 0 to 1 year of age (7%); 1 to 2 years (51%); over 2 years (37%); and unknown (6%). (Sugiono, 1979)

TERMINATING BREAST FEEDING: Weaning generally occurred at about 2 years of age. The most frequently mentioned method of terminating breast feeding was abrupt weaning, when a woman rubbed a bitter substance on her breast to discourage a child from sucking. Other women took their children to the local healer, gave their children eggs to increase their appetites for other foods at the time when the breast was withheld, and a few said they gradually reduced the number of breast feedings each day. (Griffiths et al., 1980)

RURAL

COLOSTRUM: After birth the baby was often given banana and honey or another food until the woman's milk came in. Colostrum was often pumped out and discarded, a traditional practice encouraged by mothers and traditional midwives. (Griffiths et al., 1980)

MANAGEMENT OF BREAST FEEDING: All mothers reported nursing their children during the night. When mothers had to leave their suckling children, 37% breast fed the child just before leaving and immediately upon returning, 44% left sweet tea when away, 17% left food, and 3% left milk. Many mothers breast fed using only one breast. (Griffiths et al., 1980)

EXCLUSIVE BREAST FEEDING--EAST JAVA: Exclusive breast feeding was seldom practiced. 30% of infants birth to one month of age; 12% of infants 2 to 6 months of age; 11% of infants 7 to 12 months; and 1% of those 25 to 47 months of age were exclusively breast fed. (Kardjati et al., 1978)

BREAST FEEDING--EAST JAVA: Duration of breast feeding varied by regency. In the regencies of Blitar and Trenggalek 90% of children were still breast fed at 19 to 24 months of age; and 24%, at 25 to 47 months of age. In Tuban and Lamongan 94% and 54% were breast fed at each respective age; in Sida Sidoarjo 73% and 23%; and in Madura 51% and 15% were breast fed in each respective age category. (Kardjati et al., 1978)

3.3.1 DIETARY PRACTICES, INFANTS 0-24 MONTHS, BREAST FEEDING (Cont.)

URBAN

MILK SUPPLY--CENTRAL JAVA: Inadequate milk supply was one of the most common fears and frequent complaints of urban, educated women. (Hull, 1979)

FEEDING METHOD: Among 11 children below one month of age, 63% received only breast feeding, 18% breast and artificial feeding, and 185 only artificial milk. Among 5 children 1 to 3 months 40%, 20%, and 40% were in each respective category; among 9 children 4 to 6 months 66%, 33%, and 0%; among 15 childrn 7 to 12 months 40%, 20%, and 40%; and among 25 children 13 to 24 months 28%, 20%, and 40% were in each category. 12% of children 13 to 24 months of age received no milk at all. (Sutjipto, 1981)

FIRST BREAST FEED: On average, mothers first offered the breast at 36 hours. 12 of the 65 mothers interviewed reported that they first breast fed their children on the first day of life; 30 mothers began on the second day; 11 on the third day; 8 on the fourth day; and 4 on the fifth day. (Sutjipto, 1981)

NO BREAST FEEDING: In a sample of 65 infants, 23 had never been breast fed. (Sutjipto, 1981)

COMPOSITION OF BREAST MILK: The breast milk of mothers who had lactated for one to two years averaged 1.27 grams of protein per 100 ml., 4.89 grams of fat per 100 ml., 6.93 grams of lactose per 100 ml., and 16.32 mcg. of vitamin A per 100 ml. Mean concentrations of protein, fat, lactose, and vitamin A in the milk of women lactating for more than one year were the same as during the first year. The composition was not influenced by the nutritional status of the mother. (Boediman et al., 1979)

DURATION--JAKARTA: The age at weaning in the peri-urban area of jakarta in 1978 was as follows: less than one month of age (0); 1 to 3 months (3.4%); 4 to 6 months (8.6%); 7 to 9 months (4.1%); 10 to 12 months (11.8%). (Sugiono, 1979)

DURATION--JAKARTA: The age at weaning in urban Jakarta in 1978 was as follows: less than one month of age (4.2%); 1 to 3 months (11.0%); 4 to 6 months (23.2%); 7 to 9 months (23.7%); 10-12 months (34.1%). (Sugiono, 1979)

3.3.2 DIETARY PRACTICES, INFANTS, WEANING

NATIONAL

REASONS FOR BOTTLE FEEDING: Among 53 bottle fed infants, the reasons for bottle feeding included: insufficient breast milk (14), mother out of the house (12), breast milk never came (8), mother ill (5), child hospitalized (4), mother died (3), and other reasons (7). (Surjono, 1980)

BOTTLE FEEDING--BACTERIAL CONTAMINATION: Milk sampled from feeding bottles was highly contaminated by fecal organisms. Only 4 of 53 samples had fewer than 1000 organisms per ml. Three-fourths of the samples had

bacterial densities in excess of 10,000 per ml. and 10% exceeded 1 million per ml. Control samples mixed properly and fed to two infants showed fewer than 100 organisms per ml. after two hours of incubation. The authors concluded that gross contamination occurred in the preparation of the milk by the mothers. (Surjono, 1980)

REGIONAL

METHODS OF WEANING: Several techniques are used for weaning. The one most frequently mentioned involves rubbing a bitter substance on the breast to discourage the child from sucking. This is reportedly used by 37% of the women, primarily in South Sumatra. Another technique, used by 28% of the women, primarily in Yogyakarta and Masaran, involves taking the child to a local healer (dukun). The healer gives the child a blow of air on the head which is supposed to stop it from wanting the breast. Another 19% of the mothers reportedly give their children eggs. These are supposed to increase children's appetite for other foods, at the same time that mothers withold the breast. Fifteen percent of the women reported gradually decreasing the number of breast feedings. (Griffiths et al., 1980)

MILK SUPPLEMENTS: Thirty-one mothers (22%) reported using milk supplements. Milk supplementation occurs in all villages, but it is especially prevalent in Ngipak and Dawungan and moderately so in Sakatiga and Parit. (Griffiths et al., 1980)

MILK SUPPLEMENTS: Milk supplements are used by 60% of the mothers with infants aged 9 months and older in Dawungan, a percentage that is significantly higher than in other areas surveyed. Women reported receiving milk from the well baby clinic. (Griffiths et al., 1980)

MILK SUPPLEMENTS: Seventeen percent of children aged 9 months and older received a milk supplement. Of these, 88% received it on a daily basis. (Griffiths et al., 1980)

SUPPLEMENTAL MILK: Nine of the 70 lactating women interviewed used a milk supplement, but only one of the nine said that she did not have enough milk. (Griffiths et al., 1980)

USE OF MILK SUPPLEMENTS: In general, the use of milk supplements does not appear to be linked with children of any particular age, although in some areas it is more frequently found among children between 18 and 24 months of age. It is only used during a transition period and is later replaced by tea. (Griffiths et al., 1980)

MILK SUPPLEMENTS AND AGE: The percentages of children in each age group receiving milk supplements was as follows: 0-6 months (26%), 7-12 months (23%), 13-24 months (45%), 25 months and over (6%). (Griffiths et al., 1980)

MILK TYPES: Of the women using milk supplements, 79% use powdered milk. Sixty-one percent of these use a full fat milk, and 39% use skim milk. Twenty-one percent of the sample use sweetened condensed milk.

Evaporated milk was not mentioned and is apparently not available in rural areas. (Griffiths et al., 1980)

MILK SOURCES: Fifty-two percent of the women surveyed received powdered full fat or skim milk from the Health Center or well baby clinic, either free or at a reduced charge. All of this milk is presumably fortified with vitamin A. (Griffiths et al., 1980)

MILK SOURCES: Forty-eight percent of the women who use a milk supplement purchase it at a local store or market. (Griffiths et al., 1980)

BREAST FEEDING AND MILK SUPPLEMENTS: Fewer children are breast fed in the group aged 18 months and older, than in the 9-17 months age group, but the percentage using milk supplements is 17% for both groups. (Griffiths et al., 1980)

MILK SUPPLEMENTS AND BREAST FEEDING: Of the children receiving milk supplements, 79% were also being breast fed. (Griffiths et al., 1980)

MILK SUBSTITUTES: Two of the 31 women who reported using milk supplements used it as a substitute for breast milk. One woman had adopted a baby; the other had no milk. (Griffiths et al., 1980)

MILK OVERDILUTION: Examination of milk dilution in 52 samples of milk from baby bottles indicated that one-third of the samples were less than 50% of the proper strength and only 1/2 of the samples were within 20% of the recommended concentration according to manufacturer's instructions. (Surjono, 1980)

MILK OVERDILUTION: Eighty-one percent of the women using milk supplements mix them improperly, regardless of the type used. Recipes for preparing milk vary, but in general, the proportions of milk to water should be no less than 1:4. Results show that among Indonesian mothers, the proportions of milk to water varied but were about 1:6 in 19% of the cases and closer to 1:12 in the rest of the cases. (Griffiths et al., 1980)

MILK OVERDILUTION: The common way to prepare condensed milk for babies is to mix one or two tablespoons of milk in a glass with about 240 cc. of water. In this way, one can of condensed milk reportedly lasts for two weeks. The common way to prepared powdered milk is to mix one or two tablespoons of milk powder with up to a tablespoon of sugar in a glass of water. The milk-to-water proportions in this mixture are approximately 1:12. (Griffiths et al., 1980)

BOTTLE USE: Fifty percent of the children receiving milk supplements are old enough to drink from a glass, but 73% receive their milk in a bottle. (Griffiths et al., 1980)

BOTTLE HYGIENE: Milk bottles and nipples are usually washed in cold water. The bottle is scrubbed with soap and small stones. Soap and a coconut hair scrubber are used for the nipple. (Griffiths et al., 1980)

INTRODUCTION OF SUPPLEMENTS: Seven percent of the infants began receiving food in the second month of life. Only 15% had never been given any food by the end of the second month. Almost all of the children who began receiving food in the third month or later were from villages in South Sumatra. (Griffiths et al., 1980)

FOOD SUPPLEMENTS: Out of a sample of 41 infants 5 to 8 months old, 81% received a food supplement in addition to breast milk; 10 of the 81% received a milk supplement, in addition to breast milk. 19% received breast milk only. (Griffiths et al., 1980)

INTRODUCTION OF FOOD: When mothers were asked retrospectively about the introduction of food, 44% reported introducing it in the first week of life. Usually it was honey mixed with banana or coconut meat. Mothers in Sakatiga said they stopped giving food after the first day or two. Other women continued to give food, usually rice flour porridge or banana. Twenty-two percent were given food in the second week; 12% in the third and fourth weeks, for a total of 78% who were receiving food by the end of the first month of life. (Griffiths et al., 1980)

INTRODUCTION OF FOOD: Children who were offered food in the first four months of life generally appeared to tolerate it well. Sixty-five percent of the mothers reported no problems. The other 35% of the mothers thought that the food had caused vomiting or diarrhea in their children. Mothers stopped feeding their babies if the vomiting was severe. (Griffiths et al., 1980)

NO FOOD SUPPLEMENTS: Nineteen percent of infants 5 to 8 months old sampled did not receive a food supplement in addition to breast milk. The mothers attributed this to the fact that their children had either vomited or otherwise disliked whatever food had been previously offered. (Griffiths et al., 1980)

MIXED FEEDINGS: Sixty-two percent of the mothers who offered both breast milk and food to their infants gave food first, then milk. Fourteen percent said that they breastfed first, 9% said they did not know, and 14% reported alternating the order. (Griffiths et al., 1980)

FREQUENCY OF FEEDING: Sixty-one percent of the mothers offered food to their babies 5 to 8 months old 3to 4 times a day; 38% fed their babies 1 or 2 times a day. (Griffiths et al., 1980)

NUMBER OF MEALS: Only 12% of children aged 9 to 17 months ate 4-5 meals each day, and 61% of these are from SidoAgung. (Griffiths et al., 1980)

NUMBER OF MEALS: Sixty percent of children aged 9 months and older ate three meals a day; 22%, two meals a day; and 6%, one or no meals each day. The 6% in the latter group are all in the 9 to 17 month age group and are still almost exclusively breast fed. (Griffiths et al., 1980)

FEEDING PATTERN: Twenty-eight percent of the mothers with children aged 18 months and older reported giving breast milk before food, in contrast to 36% of mothers with babies aged 9 to 17 months old. One-third said

they were not sure or that they always offer the breast first. (Griffiths et al., 1980)

SNACKS: Fifty-eight percent of children aged 9 months and older eat snacks. Ninety-two percent of these eat one or two snacks each day. They are used universally in SidoMoyo and Sakatiga and by most mothers in Parit. These are three of the villages with the highest incomes; two of them also have the highest incidences of malnutrition. (Griffiths et al., 1980)

SNACKS: Fifty-eight percent of mothers gave snacks to their young children. Questioned about the origins of snacks they fed their children, they reported as follows: purchased at store or market (43%), made at home (28%), both purchased and made at home (28%). These proportions vary when broken down by regions. In Yogyakarta and Masaran, snacks are almost always purchased, whereas in Sapuran and South Sumatra they are more commonly made at home. (Griffiths et al., 1980)

UTENSILS: Sixty-seven percent of children over 9 months of age have their own utensils (spoons and plates); 33% share their mothers' utensils. (Griffiths et al., 1980)

FEEDING SUPERVISION: Feeding practices vary according to the age of children. For children 9 to 17 months of age, 74% of the mothers reported feeding their children regularly themselves; 6% said they sometimes fed their children; and 20% said that they children generally fed themselves, with occasional supervision. Among children over 18 months of age, 50% are regularly fed by their mothers; 4% are occasionally fed by their mothers; and 46% feed themselves. (Griffiths et al., 1980)

FEEDING PROBLEMS: Forty-four percent of the mothers of children over 9 months of age reported experiencing problems feeding their children. They either said that the children disliked the food being offered or that they were not interested in eating. (Griffiths et al., 1980)

INCREASING INTAKE: Mothers asked how best to increase the amounts of food their children ate reported as follows: provide more snacks (27%), provide more food at regular meals (16%). Twenty-nine percent said that they either had no idea or that it would be too difficult. (Griffiths et al., 1980)

INFANT FOOD PREPARATION: Seventy-six percent of the mothers prepared food for their infants at home. Twenty-four percent purchased the food. Food is most likely to be bought by women in villages such as Sakatiga, SidoAgung, SidoMoyo, and Krikilan, which have easy access to stores and markets. (Griffiths et al., 1980)

FOOD PREPARATION: Twenty-five percent of the mothers who offered food to their infants (0-4 months) did not prepare the food at home but bought small packets of already-prepared rice porridge (a trend seen more often in the Godean area "and, perhaps, in Krikilan"). (Griffiths et al., 1980)

FOOD PREPARATION: Of the mothers who gave food to their infants aged 0 to 4 months, 75% made the food at home; two-thirds of these (67%) used

food that they had prepared for the family and mashed it for the infants. Thirty-three percent prepared food specially for their children (usually rice flour porridge). Sixty percent only prepared food once a day, even though the children may be fed several times during the day. (Griffiths et al., 1980)

FOOD PREPARATION: Of the mothers who prepared food for their infants 5 to 8 months old at home, 50% used food that they had prepared for the family, and 50% cooked food especially for the children. (Griffiths et al., 1980)

FOOD PREPARATION: Half of the mothers who prepare food for their infants at home cook food once a day. It is stored in the cooking pot and reheated upon demand. The other half said they prepare the food each time, usually just before the children want to eat it. (Griffiths et al., 1980)

FOODS PURCHASED: The foods that mothers are most likely to purchase for infants 5 to 8 months old are: cookies, bread, and cooked bubur. (Griffiths et al., 1980)

FOODS USED: Banana was mentioned by 15% of the mothers of infants 5 to 8 months old; mashed rice with brown sugar, by 13%; and less frequently mentioned were dry bland cookies, bread, soup with rice. (Griffiths et al., 1980)

FOODS USED: Twenty-six percent of the mothers reported offering infants 5 to 8 months old a mixed food composed of soft rice, tahu (soybean curd), and bayam, a green leafy vegetables. This combination, cooked together, was particularly common in Tempur Sari. (Griffiths et al., 1980)

RICE PORRIDGE: Bubur is a soft rice porridge, slightly more coarse than rice flour porridge. It is the food most frequently mentioned as appropriate to babies 5 to 8 months of age. (Griffiths et al., 1980)

BUBUR CAMPUR WEANING FOOD: It is a mixed porridge recommended for children 5 to 8 months old. Its basic ingredients are: a staple food, a protein food, green leaves, and a source of fat. (Griffiths et al., 1980)

NASI TIM WEANING FOOD: Nasi tim is a phrase used frequently in nutrition education to described a weaning food that is similar to bubur campur. It also means steamed rice. When questioned, only 45% of the respondents knew that nasi tim was a special infant food, and only 29% of these had ever prepared it. Knowledge of it was highest in Tempuran Duwur and Parit. (Griffiths et al., 1980)

VEGETABLES: Mothers were consistent in specifying that green, leafy vegetables (usually bayam) are fed to young children only when cooked until very soft and not mixed with other foods. Children are never fed greens cooked with chili. The preferred way of preparing greens is in vegetables soup (sayur bening). However, 33% of the mothers give their children only the water from the soup and save the leaves for the adults. (Griffiths et al., 1980)

3.3.2 DIETARY PRACTICES, INFANTS, WEANING (Cont.)

INTRODUCTION OF GREEN LEAFY VEGETABLES: Mothers asked about the introduction and feeding of green leafy vegetables reported as follows: 0-4 months (5%), 5-8 months (38%), 9-12 months (27%), 13-24 months (18%), 24 or more months (12%). These figures correspond with responses given in other parts of the investigation. Most of the mothers favoring late introduction of vegetables were form Yogyakarta and South Sumatra. (Griffiths et al., 1980)

SPECIAL FOODS: Some foods were considered by mothers to be an especially important addition to the standard diets of children aged 9 months and over. These "extra foods," eaten by at least half the children are: tahu in Yogyakarta and Masaran; cassava, tahu, and corn (cooked like rice) in Sapuran; and greens and oil in South Sumatra. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--PARTICIPATION: Women whose 3 to 4 month old children received only rice were asked to make a porridge mixed with tahu (soybean curd) and mashed green vegetables. Ten mothers agreed to try it, and 5 did not. The ones who did not successfully implement the change said that their children were too young or that their children did not like it. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--PARTICIPATION: As part of a trial modification, women were asked to withhold solid food gradually from their infants 0-4 months, to be accompanied by an increase in their own consumption of fluids. Thirteen women agreed to try; 8 were successful (61%) and 5 (38%) were unsuccessful. One of the women complained that it made her busier because she had to breastfeed more often. The women who were unwilling to try said that they needed to be able to leave food for their children during the times when they were away from home. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--PURPOSE: Trial dietary modifications for children 5 to 8 months old were designed to improve their diets both through direct food supplementation with mixed porridge (bubur campur) and to provide measures to enable their mothers to produce more breast milk. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--IMPLEMENTATION: Out of 36 mothers who agreed to try dietary modifications for their infants 5 to 8 months old, 67% implemented the suggestion to feed bubur campur. Thirty-three percent did not follow the advice, followed it partially (using only some of the ingredients), or discontinued it because their children did not like it. (Griffiths et al., 1980)

RECIPE FOR MIXED PORRIDGE (VARIATION 1): Porridge is made from scratch using uncooked, broken rice kernels, uncooked mashed tahu or tempe, and chopped green leaves. The rice is cooked first in coconut milk (extracted from coconut meat, and high in fat). Tahu or tempe and green leaves are added once it has begun to soften. The mixture continues to cook until it is very soft. (Griffiths et al., 1980)

RECIPE FOR MIXED PORRIDGE (VARIATION 2): Precooked rice is taken from the family pot and cooked again after adding other raw, mashed ingredients and a few drops of oil or coconut milk. (Griffiths et al., 1980)

RECIPE FOR MIXED PORRIDGE (VARIATION 3): Precooked, hot rice is mashed. Flake, fried fish or mashed tahu or tempe and boiled green vegetables from the family pot are added. The ingredients are mashed together and served. This variety is especially popular in South Sumatra. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--COMPLIANCE: Twenty-four out of 36 mothers (66%) implemented trial dietary modifications using all of the recommended ingredients for the porridge, but only 33% of them actually fed it to their children the recommended 4-5 times a day. Fifty percent fed it to their children 3 times a day; 8% fed it to their children 1-2 times a day. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--ADVANTAGES: The mothers who implemented the trial dietary modifications using mixed porridge said they liked it because it was inexpensive, easy to make, the ingredients were readily available, and it was good for the children. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--EXPENSE: Lactating women in Dawungan, Tempur Sari, and Parit had difficulty adding protein foods such as tahu, tempe, or fish to their diets because they are expensive. (Griffiths et al., 1980)

DIETARY MODIFICATIONS--IMPACT ON NUTRIENT INTAKE: Even after implementation of trial modifications, the percentage of dietary adequacy among children 5 to 8 months old was still low, usually because the recommended foods were not being offered in adequate quantities. The highest percentage of adequacy was found among children breast fed on demand, who also received a balanced food supplement, fortified with a calorie source, at least 4 times a day. (Griffiths et al., 1980)

DIETARY MODIFICATIONS AND NUTRIENT INTAKES: Two-thirds of the mothers successfully implemented trial dietary modifications. One-third gave it to their children aged 5 to 8 months four or five times a day. The vitamin A and protein intakes of all these children improved significantly, even though their calorie intake remained inadequate. (Griffiths et al., 1980)

DIETARY MODIFIFICATIONS--METHODS: Trial dietary modifications for children over 9 months of age focussed on increasing the amounts of food eaten by each child. Women were not asked to modify practices that already yielded adequate intake for the nutrient in question, nor were they asked to implement any activity that they felt was unreasonable. (Griffiths et al., 1980)

MODIFIED DIET--RICE: In cases where children 9 months of age and over were eating only rice porridge (jenang or bubur), investigators recommended that mothers feed their children rice instead. Only a few women were able to effect this change; others said that their children had refused the rice. (Griffiths et al., 1980)

MODIFIED DIET--CONSTRAINTS: The most successful trial dietary modification involved making rice mixed with protein food and green vegetables, and green bean porridge (recommended only in South Sumatra).

Mothers, however, do not prepare these foods with sufficient frequency, or in quantities large enough to bring about significant increase in the calorie intake of their children. (Griffiths et al., 1980)

MODIFIED DIET TRIALS--PROBLEMS: Trial dietary modifications for children over 9 months of age did not meet with a large degree of success. Women said that it was too difficult to feed children in this age group an extra meal or more rice and snacks. They were more successful in increasing the amounts of protein and green vegetables consumed, except in cases where the children reportedly did not like vegetables. (Griffiths et al., 1980)

MODIFIED DIET--BEHAVIOR CHANGE: Mothers who were successful in implementing changes in the diets of their children 9 months of age and over reported signs of increased energy and play in their children. They viewed this as a positive change, since it freed them to do other things while the children played. (Griffiths et al., 1980)

MODIFIED DIET AND CALORIE INTAKE: Even after implementation of the dietary modifications, the calorie intake of children over 9 months of age did not reach the 100% adequacy level, except in Sapuran. Vitamin A intake increased more markedly than intake of other nutrients, exceeding 100% adequacy in Masaran, Sapuran, and Indralaya. (Griffiths et al., 1980)

ADEQUACY OF NUTRIENT INTAKES: The nutritional adequacy of children over 9 months of age was calculated, based on the mother's recall, for three major nutrients: calories, protein, and vitamin A. The results show that in general calorie intake was low and that in all cases median recall scores are less than 80% of the adequacy level. Protein intake was also low and reached 100% adequacy only in Karangmojo. Vitamin A intake varied from region to region but exceeded 100% adequacy only in Sapuran. The worst results were from Godean and Indralaya. (Griffiths et al., 1980)

ADEQUACY OF NUTRIENT INTAKES: A comparison of nutritional adequacy scores for children 9 to 17 months of age, plotted against those for children over 18 months of age, showed that scores for the older group were lower when compared with nutrient requirements. In both cases, the main problem appeared to be calorie or total food consumption. (Griffiths et al., 1980)

FOODS USED: The foods given to infants age 0 to 4 months vary by region. Rice flour porridge seems to be more common in SidoAgung and SidoMoyo; soft mashed rice and/or banana are preferred in Tempur Sari and Tempuran Duwur. In South Sumatra babies are given only breast milk. (Griffiths et al., 1980)

BOTTLE FEEDING--IRIAN JAYA: The wives of the shopowners in Agata were observed using baby bottles to feed their infants. It is not known exactly what effect this has on the villagers and government workers in Asmat. Powdered milk formulas and sweetened condensed milk are both available in the shops. (Eng, 1982b)

SUPPLEMENTARY FOODS--IRIAN JAYA: Children are reportedly first given food when they are able to sit or crawl, and then only if they cry. The mother chews the food first and then gives it to the child. (Eng, 1982a)

WEANING FOODS--CENTRAL JAVA: Introduction of supplementary foods begins early in Javanese society. Most infants aged one month were already receiving mashed banana, rice flour porridge, or soft cooked rice. Mashed banana was given during the first week of life in 37% of cases surveyed, and within the first month in 80% of the cases. By December 1976, 66% of the infants born since January 1976 were receiving rice once or twice a day, mixed with coconut sugar or cooking water from vegetables. In December 1976, 14% were receiving supplementary bottle feedings in addition to early morning and on-demand breast feeding. Seven out of forty-seven received powdered skim milk in their supplementary bottles. The remainder received prepared formula manufactured in Indonesia. (Hull, 1977)

SUPPLEMENTARY FOOD--CENTRAL JAVA: Women often begin supplementation in the first weeks of life, on the grounds that it aids the baby in becoming accustomed to solid food, which will help avoid feeding problems later. (Hull, 1979)

MASHED BANANA--CENTRAL JAVA: Thirty-seven percent of infants surveyed were already receiving mashed banana in the first week of life, in addition to breast feeding, and 80% within the first month of life. (Hull, 1977)

RICE--CENTRAL JAVA: In many cases, infants began receiving rice as supplementary food in the first month of life, either in the form of rice flour porridge or soft cooked rice mixed either with coconut sugar or cooking water from vegetables. (Hull, 1977)

FOOD SUPPLEMENTS AND AGE--CENTRAL JAVA: Javanese mothers whose infants 5 to 8 months old had not been able to tolerate food said they would try food again when the children were about 7 months of age. (Griffiths et al., 1980)

USUAL DIET--CENTRAL JAVA: The standard daily diet (foods eaten by at least half the children) over 9 months of age in Sapuran contains the following: rice, salted fish, tempe, greens. (Griffiths et al., 1980)

SUPPLEMENTS AND DIARRHEA--CENTRAL JAVA: The incidence of diarrhea in Ngaglik was higher among infants receiving supplementary food in the first few weeks of life than among totally breast fed babies. (Hull, 1979)

FREQUENCY OF FEEDINGS--CENTRAL JAVA: In areas of Java where babies age 0 to 4 months are given food, 45% of the mothers reported feeding their infants 1-2 times a day; 55% reported 3-4 feedings a day, a pattern that is more common in Tempur Sari and Tempuran Duwur. (Griffiths et al., 1980)

SUPPLEMENTARY FOODS--EAST JAVA: 42% of children birth to 47 months of age received rice and banana as a supplementary food, 32% received rice

gruel, 3% received Nasi tim (a triple mixture of rice, vegetables, and plant or animal protein), 1% received rice and milk, and 1% received milk. (Kardjati et al., 1978)

PROMOTION OF MILK POWDER--EAST JAVA: Milk powder was rarely used as a substitute for breast milk in rural East Java. None of the aggressive sale promotions operative in the larger cities of Java were found in the villages. In the past years, free distribution of milk powder in the MCH Centers had virtually stopped. (Kardjati et al., 1978)

EATING THE FAMILY DIET--EAST JAVA: 17% of children birth to one month of age received the family diet, 2% of children 2 to 6 months, 24% at 7 to 12 months, 49% at 13 to 18 months, 59% at 19 to 24 months, and 92% at 25 to 47 months of age. (Kardjati et al., 1978)

NUMBER OF MEALS--EAST JAVA: The number of meals per day for children below two years of age varied from two to four. (Kardjati et al., 1978)

BEANS--EAST JAVA: Mothers in an East Java village began feeding beans to young children on the advice of a health worker. (Yayasan Indonesia Sejahtera, 1980)

SALTED FISH--EAST JAVA: Mothers in an East Java village began feeding them to young children on the advice of a health worker. (Yayasan Indonesia Sejahtera, 1980)

SOYBEAN POWDER--EAST JAVA: Mothers in an East Java village began feeding it to young children, mixed in with their daily rice, on the advice of a health worker. It worked well because it could be prepared in advance and stored. If the mother was working in the fields, an older child could use it to feed the younger one and would not be tempted to steal it since it was not very tasty. (Yayasan Indonesia Sejahtera, 1980)

SUPPLEMENTARY FOODS--WEST KALIMANTAN: In West Kalimantan, supplementary foods were introduced as follows: 3 to 6 months of age, 38.7%; 6 to 12 months, 29.7%; over 12 months, 29.7%; and unknown, 1.9%. (Sugiono, 1979)

ADULT FOODS--WEST KALIMANTAN: Adult foods were introduced to children in West Kalmantan as follows: less than 3 months, 0.5%; 3 to 6 months, 3.3%; 6 to 9 months, 7.2%; 9 to 12 months, 10.0%; over 12 months, 60%; and unknown, 19.0%. (Sugiono, 1979)

ADULT FOODS--WEST NUSA TENGGARA: Adult foods were introduced to children in West Nuga-Tenggara as follows: less than 3 months, 0.5%; 3 to 6 months, 0.8%; 6 to 9 months, 3.7%; 9 to 12 months, 12.0%; over 12 months, 83.0%; and unknown (0.0%). (Sugiono, 1979)

SUPPLEMENTARY FOODS--SOUTH SULAWESI: In South Sulawesi, supplementary foods were introduced as follows: 3 to 6 months of age, 17.9%; 6 to 12 months, 63.7%; over 12 months, 18.1%; and unknown, 0.3%. (Sugiono, 1979)

ADULT FOODS--SOUTH SULAWESI: Adult foods were introduced to children in South Sulawesi as follows: less than 3 months, 0.0%; 3 to 6 months of

age, 1.0%; 6 to 9 months, 5.7%; 9 to 12 months, 20.6%; over 12 months, 65.0%; and unknown, 7.7%. (Sugiono, 1979)

SUPPLEMENTS--NORTH SUMATRA: In North Sumatra, supplementary foods were introduced as follows: 3 to 6 months of age, 61.5%; 6 to 12 months, 24.0%; over 12 months, 13.9%. (Sugiono, 1979)

ADULT FOODS--NORTH SUMATRA: Adult foods were introduced to children in North Sumatra as follows: less than 3 months, 1.1%; 3 to 6 months of age, 3.4%; 6 to 9 months, 9.2%; 9 to 12 months, 15.9%; over 12 months, 67.3%; and unknown, 3.1%. (Sugiono, 1979)

SUPPLEMENTS--SOUTH SUMATRA: In South Sumatra, supplementary foods were introduced as follows: 3 to 6 months of age, 67.4%; 6 to 12 months, 11.9%; over 12 months, 7.0%; and unknown, 14.7%. (Sugiono, 1979)

ADULT FOODS--SOUTH SUMATRA: Adult foods were introduced to children in South Sumatra as follows: less than 3 months, 0.5%; 3 to 6 months of age, 5.3%; 6 to 9 months, 10.2%; 9 to 12 months, 15.7%; over 12 months, 67%; and unknown, 1.3%. (Sugiono, 1979)

USUAL DIET--SOUTH SUMATRA: The standard daily diet (foods eaten by at least half the children) over 9 months of age in South Sumatra contains the following: rice, fish (small amounts), sugar, banana. (Griffiths et al., 1980)

INTRODUCTION OF LEGUMES--SOUTH SUMATRA: Children in both Sakatiga and Parit (South Sumatra) eat legumes. In Sakatiga, 75% of the mothers began feeding children beans in the thirteenth month; 25% waited until the child was 18 months or older. The question was not asked in Parit. (Griffiths et al., 1980)

BEANS--SOUTH SUMATRA: In Sakatiga and Parit, mothers said that beans must be cooked until soft for children. Two out of 26 mothers said beans should be mashed. Respondents reported few problems with giving beans to children. (Griffiths et al., 1980)

SUPPLEMENTS--WEST SUMATRA: In West Sumatra, supplementary foods were introduced as follows: 3 to 6 months of age, 44.8%; 6 to 12 months, 26.7%; over 12 months, 11.3%; and unknown, 17.2%. (Sugiono, 1979)

ADULT FOODS--WEST SUMATRA: Adult foods were introduced to children in West Sumatra as follows: less than 3 months, 0; 3 to 6 months of age, 0.5%; 6 to 9 months, 1.0%; 9 to 12 months, 9.3%; over 12 months, 83.0%; and unknown, 6.2%. (Sugiono, 1979)

USUAL DIET--YOGYAKARTA AND CENTRAL JAVA: The standard daily diet (foods eaten by at least half of the children) over 9 months of age in Yogyakarta Province and the subdistrict of Masaran contains the following: rice, rice porridge, tempe, rice crackers (krupuk), greens (small amount). (Griffiths et al., 1980)

EARLY INTRODUCTION OF SUPPLEMENTS: The majority of children began receiving food during the first two months, many as early as the first

week. Mothers gave this food because it was an easy way to pacify their children and because they believed that the food was beneficial. The food offered was most frequently rice porridge which was generally made at home once each day and then was often held throughout the day for the baby. This practice provided the opportunity for bacterial contamination and growth. (Griffiths et al., 1980)

MILK SUPPLEMENTS: The use of powdered milk and canned milk was not widespread and did not appear to be used as a replacement for breast milk in the project areas. However, when milk supplements were used, 81% of the women using them made them extremely diluted; only a few even approached the proper dilution. Incorrect preparation practices were being taught in the Health Centers and well baby clinics. (Griffiths et al., 1980)

RURAL

SUPPLEMENTARY FOODS: In two rural areas surveyed in 1977 supplementary foods most often given to infants were: rice with banana (36.4%) and rice (26.2%). The mean ages at introduction were 5.5 and 3.5 months, respectively. (Sugiono, 1979)

SPECIAL FOODS: Mothers of children birth to 47 months of age were asked if they had ever given a specially prepared food to their child. Mashed banana plus rice was the most common answer followed by plain mashed banana, rice gruel, or porridge. A very small number supplemented their own milk with cow's milk or milk powders. Children who were never given special food received rice from the family diet which was mashed. Infants were given special foods up to 9 to 12 months of age. (Kardjati et al., 1978)

URBAN

BEGINNING ARTIFICIAL FEEDING: Among 14 children who received artificial milk feeding, 7 first received this milk at less than one month of age; 2, at 1 to 2 months; 1, and 3 to 4 months; 1, at 4 to 5 months; 2, at 6 to 7 months; and 1, at 7 to 8 months of age. (Sutjipto, 1981)

INTRODUCTION OF SOLID FOOD: 40% of children first received solid food at one to three months of age. (Sutjipto, 1981)

SUPPLEMENTARY FOOD: The percentage of infants 0 to 6 months not receiving supplementary food was 18.2% in the urban area, and 38.2% in the peri-urban area in 1978. (Sugiono, 1979)

SUPPLEMENTARY FOODS BY AGE: The most important supplementary food for infants aged 1 to 3 months was banana (48.2%); for infants 4 to 6 months, milk porridge or rice porridge (4%); and for infants 10 to 12 months, soft rice with vegetables. (Sugiono, 1979)

3.3.3 DIETARY PRACTICES, INFANTS, AFTER WEANING

NATIONAL

YOUNG CHILD DIET: Once weaning takes place, usually between the first and second year, the child shares the normal family food which is deficient in protein and is otherwise insufficiently nutritious to meet the physiological demands of the growing child. (Winarno and Bushan, 1981)

XEROPHTHALMIA AND DIET: Xerophthalmic children ate leafy green vegetables, a good source of beta carotene (provitamin A), far less frequently than did normal children. These foods were inexpensive and widely available. Consumption of edible fat, essential for efficient absorption and utilization of ingested vitamin and provitamin A, was lower among xerophthalmic children than among normal children. (GOI and HKI, 1980)

REASONS FOR NOT GIVING VEGETABLES: The commonest reasons cited for children not eating leafy green vegetables was simply that the children did not like them. A substantial proportion of children below age two years were not given green leafy vegetables because their mothers either considered these vegetables to be inappropriate or did not know how to prepare them for very young children. (GOI and HKI, 1980)

REGIONAL

PREVALENCE: The highest percentages of children aged 9 months and older not receiving breast milk were in villages in SidoAgung, SidoMoyo, and Godean. (Griffiths et al., 1980)

DIETARY LIMITATIONS--EAST JAVA: Before the third year, spiced and hot foods were seldom included in the child's diet. Meat and fish were often omitted because they were believed to be harmful. This resulted in young children being given rice with the vegetables dish sauce or soybean sauce (a kind of ketchup). Young children often got rice when the family staple food was maize or cassava. There was no taboo on vegetables, yet they were seldom given because mothers felt that children did not like them (Kardjati et al., 1978)

FISH FLAKES--RURAL JAVA: Rese, fish flakes, were cooked with vegetables. Kuah, the soupy portion of this food, was considered very nutritious and an excellent food for young children. These fish flakes have recently been replaced by MSG, especially in the diets of the poor. (Chapman, 1980)

3.4 DIETARY PRACTICES, HEALTH AND MEDICINE

REGIONAL

KADER--VOLUNTEER NUTRITION WORKERS: Kader are volunteers who work in village nutrition programs. Sixty-six percent of the kaders have specific households for which they are responsible. Sixty-seven percent oare responsible for 15-20 households each; 19% are responsible for 20-30 households each; and 15% are responsible for 40-50 households each. Some

(34%) reported having responsibility for the entire community. Fifty-four percent of the kader also have other responsibilities besides their nutrition work. Many of them work for the family planning program and the women's organization (PKK); others are responsible to the agricultural program or the general community development program (LSD). (Griffiths et al., 1980)

KADER ACTIVITIES: Forty-eight percent of the kader reported spending half to three quarters of a day per month on nutrition activities; 42% reported spending half a day each week; and three kader reported spending one day each week on nutrition activities. (Griffiths et al., 1980)

KADER HOME VISITS: Sixty-three percent of the kader reported making home visits; 45% claimed that people come to their homes seeking advice. The areas where most kader report not making home visits were Godean and Parit. These correspond to the areas where kader reported not being responsible for specific homes. (Griffiths et al., 1980)

KADER--NUTRITION EDUCATION: Seventy-one percent of the small groups of kader interviewed reported talking with mothers about nutrition only at weighing sessions; 6% claimed to provide such information during home visits. This coincides with the number of mothers who reported receiving such information in their homes. Kader also reported discussing nutrition at women's meetings and family planning meetings. (Griffiths et al., 1980)

KADER NUTRITION ADVICE: Kader were questioned about the advice they gave mothers about nutrition. There was no standard advice except to breast feed. Seventy-eight percent of the kader recommended that mothers begin giving their children food in the first four months of life, generally rice flour porridge and banana. Ten percent reported never giving advice about feeding children. (Griffiths et al., 1980)

KADER--SICKNESS IN CHILDREN: When kader were asked to list characteristics that would identify sick children, they answered as follows: pale (55%), has a temperature (48%), weak (36%), difficult to manage (36%), diarrhea (36%), decreased appetite (27%), decreased weight (18%), skinny (12%), red eyes (12%). (Griffiths et al., 1980)

KADER ADVICE ON DIARRHEA: In response to questioning, 78% of the kader said that they would recommend the use of a homemade sugar-salt solution (LCG) for diarrhea. Of these 78%, only 17% could prepare the solution correctly for the investigator. Fifty-seven percent reported that they would use oralite. Other advice they would have given was reported as follows: continue breast feeding (19%), stop "hard" or fried foods (27%), stop "hard" and/or fried foods and give rice flour porridge (11%), take child to the Health Center (13%). (Griffiths et al., 1980)

KADER WORK ATTITUDES: Kader asked what they liked and disliked about their jobs were most bothered by a perceived lack of community support for their work. Experience, added knowledge, and healthy children were cited as the things giving them the most satisfaction. (Griffiths et al., 1980)

JAMU: There are different types of jamu, and the type used varies from area to area. Sometimes it is packaged and sold under different trade names. Other popular types, such as jamu gepyok, jamu empon-empon, and jamu sawana, are homemade. (Griffiths et al., 1980)

DIARRHEA AND BREAST FEEDING: Eighty-six percent of the children in the sample selected for diarrhea were being breast fed at the time of the investigation, and all of them continued to receive breast milk during diarrheal episodes. (Griffiths et al., 1980)

DIARRHEA REMEDIES: In all cases where diarrhea lasted over three days, mothers took some action. Twenty-five percent continued treatments begun during the first three days (i.e., offered a sugar-salt solution, drank jamu, or offered it as a drink or poultice, gave anti-diarrheal medicine [CIBA pills]); 25% reported going to a local healer for jamu; 25% said that they would use a sugar-salt solution (18% said they would go to a local healer if the solution did not work); and 18% reported going to purchase anti-diarrheal pills. Only 11% said that if the diarrhea was prolonged, they would take the child to the Health Center. (Griffiths et al., 1980)

DIARRHEA REMEDIES: Thirteen percent of the mothers reported offering no special treatment for diarrhea that lasted three days or less; 21% reported giving a sugar-salt solution to their children; 18% gave children jamu to drink or placed a jamu poultice on the body, usually on the stomach; 18% purchased anti-diarrheal medicine (CIBA pills) at a shop; 11% took their children to the Health Center; and a few reported that they themselves drank jamu. (Griffiths et al., 1980)

ORAL REHYDRATION SOLUTION: Mothers were questioned about their previous knowledge of pre-packaged UNICEF oral rehydration salts (ORS), as well as homemade sugar-salt solutions (laruten gula garum, or LGG) for oral rehydration therapy. Twenty percent of the mothers had heard of ORS, but less than half had ever used it, and only two of the women (6% of the sample) knew how to prepare it correctly. (Griffiths et al., 1980)

ORAL REHYDRATION SOLUTION: In an attempt to determine the best way to teach them to prepare oral rehydration solutions, women were asked to read the instructions of the package and prepare the liquid. Oral instructions were provided for those who could not read the written ones. After receiving these instructions, one woman in twenty could do it correctly. Following a demonstration, all but one mother could make it correctly. (Griffiths et al., 1980)

ORAL REHYDRATION SOLUTION: Thirty-four percent of the mothers knew about the homemade sugar-salt solution. Only 24% of these mothers had ever made it, and only a third of these (8% of the total) could prepare it correctly. Eleven percent could prepare it correctly after seeing the instructions. The ones who could not always put in too much salt. After an oral explanation, 31% of them could prepare it correctly. After a demonstration, an additional 60% of the mothers could prepare it correctly. (Griffiths et al., 1980)

3.4 DIETARY PRACTICES, HEALTH AND MEDICINE (CONT.)

ORAL REHYDRATION SOLUTION: The difficulty with instructions for preparing oral rehydration solutions is that they make use of measurements that mothers are not familiar with, namely a liter, a teaspoon, etc. In an effort to make the instructions easier to understand, one Health Center adapted the recipe for sugar-salt solution so that measurements were made in pinches and handfuls. (Griffiths et al., 1980)

ORAL REHYDRATION SOLUTION: The modified recipe for a sugar-salt rehydration solution is as follows: 1 glass of water or tea, 1 tablespoon of sugar (white or brown), 1 2-finger pinch of ground salt. (Griffiths et al., 1980)

DIARRHEA AND ORAL REHYDRATION: Eighty percent of the mothers who agreed to prepare the sugar-salt solution for their children with diarrhea were successful. Reasons for the failure of the other 20% included: children refusing to drink it, having no sugar, giving only tea. (Griffiths et al., 1980)

DIARRHEA AND ORAL REHYDRATION: Mothers who successfully used oral rehydration solutions reported that their children had more energy and liked the solution because it was sweet. In general, however, children received no more than two to three glasses of solution a day. (Griffiths et al., 1980)

FLUID INTAKE WITH DIARRHEA: Mothers questioned about their children's fluid intake during diarrheal episodes reported as follows: 48% said that the children drank the usual amount, one woman said her child drank less than usual, and 52% reported an increase in their children's fluid intake. The increase in fluid intake was reportedly due to: increased breast feeding (50%), increased consumption of tea (37%), and increased consumption of prepared milk (13%). (Griffiths et al., 1980)

DIARRHEA AND FLUID INTAKE: A trial modification of fluid consumption was attempted, but three to four glasses of fluid per day was the maximum amount of consumption obtained. (Griffiths et al., 1980)

DIARRHEA AND FOOD INTAKE: Fourteen percent of the mothers whose children were selected for the diarrhea investigation said that they stopped all food during diarrheal episodes. The remaining 86% continued to offer food, but almost all of them reported decreasing the quantity and changing the type of food offered. (Griffiths et al., 1980)

DIARRHEA AND FOOD INTAKE: Among mothers of children with diarrhea, the general pattern is to alter the diet to include only starchy foods, usually made into a porridge. Of these, 46% reported changing from rice to rice porridge; 31% reported eliminating all foods but rice. Eleven percent said that during diarrheal episodes they always eliminated salted fish; 11% reported giving children banana in addition to rice porridge. (Griffiths et al., 1980)

DIARRHEA AND DIET: The children with the worst diarrhea were those whose mothers did not follow through with the suggested mixed rice porridge. Mothers felt that green leaves would make diarrhea worse. (Griffiths et al., 1980)

DIARRHEA BEHAVIOR AND PHYSICAL CHANGES: Eighty-three percent of the mothers of children with diarrhea reported definite physical or behavioral changes in their children that disturbed them. 60% of these said that the child was weaker; 50% said the child was pale; 17% reported a loss of weight; 13% reported fever; 10% mentioned sunken eyes, abnormal play, and the child always wanting to be carried. (Griffiths et al., 1980)

DIARRHEAL FREQUENCY: Ninety-four percent of the mothers responding to questions about diarrhea reported that their children had three or more diarrheal movements per day; 44% of these reported five or more movements per day. There is no information about normal movements with which to compare this. (Griffiths et al., 1980)

DURATION OF DIARRHEAL ILLNESS: Fifty-two percent of the mothers reported that diarrhea lasts from one to three days. Thirty percent reported diarrhea lasting from four to seven days, and 19% reported diarrhea lasting eight days or more. (Griffiths et al., 1980)

PRENATAL CARE: Seventy-seven percent of the women in the sample reported having had some kind of prenatal examination, performed by a traditional or trained midwife. Of those 77%, 56% had had fewer than one exam per month; 33% had had one a month; and 12% had had more than one a month. (Griffiths et al., 1980)

PRENATAL CARE: Twenty-three percent of the women in the sample reported not having had a prenatal examination but offered no explanation. Only one woman cited cost. (Griffiths et al., 1980)

TRADITIONAL BIRTH ATTENDANTS: Well over 90% of births took place in the home, assisted by a traditional midwife. About one-third of the traditional midwives have taken the government training course. (Hull, 1977)

MIDWIVES: Seventeen traditional midwives (dukun bayi) were interviewed in the course of the investigation. Their ages ranged from 45 to 95 years, with a median age of 60. All but one were illiterate, although about half (47%) reported listening to the radio. Only one woman was training a replacement for herself. Fifty-six percent had received government training, mostly in primary care during delivery, and family planning. Only 18% have had any training in nutrition. (Griffiths et al., 1980)

TRADITIONAL MIDWIVES--D.I. ACEH: It appears that trained traditional midwives have had a positive effect on mother-child health. Save the Children reported a sharp drop in infant mortality rates in the Tangse area of Aceh after they trained traditional midwives. Questions can be raised about the validity of the data, but it is clear that something is changing. The role and effectiveness of dukun bayi requires further study. (Griffiths and Pyle, 1982)

DIARRHEA REMEDIES--IRIAN JAYA: The traditional remedies for diarrhea are reported to be cucumbers, sugar cane seedlings, pineapple, papaya, and boiled water. Acceptance of Oralite from cadres has apparently been successful. (Eng, 1982a)

HEALTH SERVICES--IRIAN JAYA: Health services in Yamesh have been provided by the Catholic Mission, since there was no PUSKESMAS in the area. Common problems are boils, sores, yaws, and hair dyspigmentation among school children. (Eng, 1982a)

HEALTH CARE--IRIAN JAYA: In Catabou, basic health care is provided by cadres and mantri kesehatan. A cadre is a village person who has received basic training in health care and is responsible for about 20 families. Mantri are more highly qualified people covering a more extended area and providing services through a health center complex. (Eng, 1982a)

CHILDBIRTH--IRIAN JAYA: Women in Catabou traditionally give birth in a special house which is situated several yards away from the main house. Mothers return to the house "after the cord has fallen off." No assistance is allowed during the birth process. Anyone who touches the baby besides the mother becomes responsible for the baby's death, if it should die. For this reason it is difficult to obtain birth weights. This situation is beginning to change through contact with foreigners and with trained midwives. (Eng, 1982a)

HOME REMEDIES--CENTRAL JAVA: Mothers in Ngaglik reported a wide range of home remedies used to prevent or treat illness in children and other family members. These remedies include jamu, which is an herbal mixture that can be consumed as tea or used as a compress or salve; massage; and application of mother's milk, saliva, or urine. (Hull, 1979)

JAMU--CENTRAL JAVA: Jamu is an herbal mixture which can be drunk as tea or applied as a compress or salve. There is a specific mixture for almost every common ailment. (Hull, 1979)

JAMU AND BREAST MILK--CENTRAL JAVA: Sometimes breast feeding mothers drink a type of jamu specific to a child's ailment, so that its curative power can be transmitted to the child through the milk. (Hull, 1979)

TRADITIONAL HEALERS--JAVA: Women in Ngaglik usually consulted traditional healers only in the case of an unusual symptom or when their own efforts and the wisdom of family members had failed to produce the desired result. (Hull, 1979)

CHILDBIRTH--CENTRAL JAVA: Women in Ngaglik usually give birth at home, assisted by a traditional midwife (dukun bayi). They usually assist women in breathing during labor, help control contractions, and give moral support. They advise women to remain ambulatory during early labor and to get up and bathe as soon as possible after birth. Dukun bayi continue to visit for 35 days after birth. They advise as well as massage mothers and infants. (Hull, 1979)

CHILDBIRTH--CENTRAL JAVA: The umbilical cord is not cut until the placenta has been expelled, which helps to prevent anemia in the newborn infant. (Hull, 1979)

CHILDBIRTH--CENTRAL JAVA: The practice of delaying the cutting of the umbilical cord until the placenta is expelled sometimes results in a

practice that is dangerous to the mother. The traditional midwife will sometimes insert a hand to extract it, a practice that can lead to infection. The umbilical cord is traditionally cut with bamboo blades that are sometimes dirty, which increases the risk of tetanus in the newborn child. (Hull, 1979)

PROBLEMS OF MIDWIVES--CENTRAL JAVA: Some women who had taken the government training course for midwives had had their kits taken away from them during a visit from their instructor, on the grounds that they were not being properly cared for. This action resulted in considerable ill feeling among the traditional midwives. (Hull, 1979)

SUCCESSES OF MODERN MEDICINE--CENTRAL JAVA: The inoculation campaign in Ngaglik has been fairly successful. Most mothers take advantage of free injections offered in their village. Nearly 10% of the deliveries of women in the study were attended by trained medical practitioners, and osme tuberculosis cases are under treatment. Some pneumonia victims have also been saved by penicillin. (Hull, 1979)

USE OF CLINICS--CENTRAL JAVA: There is a Maternal Child Health Clinic serving several villages approximately 15 km. north of Yogyakarta which is not frequently used. The reasons given are as follows: differential status of villagers and health care personnel, cost of transport, cost of delivery and postnatal care. (Hull, 1977)

HOSPITAL CARE--CENTRAL JAVA: One woman complained that when she had taken her baby to a hospital with diarrhea, they would not allow her to breast feed it. Mothers are also forbidden to stay at a sick child's bedside. (Hull, 1979)

MEDICAL EXAMINATION--CENTRAL JAVA: Of the women pregnant during the prospective phase of the study, 70% to 80% did not have a medical examination during pregnancy. Those who did consult doctors or midwives did so primarily during the third trimester, although most women reported consumption of herbal mixtures. (Hull, 1977)

POSTNATAL HOSPITAL CARE--CENTRAL JAVA: Although some hospitals practice "rooming-in," more frequently mothers and newborn infants are separated This practice can interfere with the initiation of lactation. (Hull, 1979)

INJECTIONS--CENTRAL JAVA: Injections (suntik) are very popular in Ngaglik. The frequency with which some doctors give injections (usually vitamin B complex) leads women to prefer them to other doctors who prescribe other medications. (Hull, 1979)

MEDICATIONS--CENTRAL JAVA: Women in Ngaglik taking modern medications rarely knew what they were taking or for what purpose. Pharmacies do not write the names, and doctors seldom tell patients what they are being given. One woman was apparently given a potent fertility drug and told that it would make her healthier. Children are sometimes given tetracycline or other antibiotics for colds. some people only purchase a portion of the prescription because they cannot afford the full order;

sometimes expensive medications are prescribed when cheaper substitutes are available. The problems are most often found in cities. (Hull, 1979)

FAMILY PLANNING--CENTRAL JAVA: Birth intervals ideally are about 3 years, traditionally achieved through the effects of lactational amenorrhea and postpartum abstinence, because intercourse in believed to contaminate breast milk. Pregnancies are also spaced for economic and health reasons and to facilitate child care. (Hull, 1979)

ABORTIFACIENTS--CENTRAL JAVA: Some herbal mixtures that women drink are explicitly said to "bring on late periods," implicitly abortifacients. (Hull, 1979)

JAMU--SOUTH SUMATRA: Women in South Sumatra do not drink jamu. (Griffiths et al., 1980)

MIDWIVES--SUMATERA BARAT: Official government figures indicate that in Lima Puluh Kota, 35% of the traditional midwives have been trained by the government, and they play an important role in the provincial mother-child health programs (KIA), although their role and effectiveness requires further study and documentation. (Griffiths and Pyle, 1982)

4. NUTRITION STATUS CORRELATIONS

NATIONAL

XEROPHTHALMIA CORRELATES: Xerophthalmia, considered to be one of the major nutrition and eye problems, is correlated with socioeconomic and cultural factors such as poverty, ignorance, low level of education, and other ecological factors. (Susanto, 1980)

XEROPHTHALMIA AND DIET: Dietary patterns do not always distinguish between children with and without xerophthalmia. Other factors, such as disorders of the absorption system, digestibility of food, presence of infectious diseases and parasites may inhibit the body's ability to utilize carotene and vitamin A. (Susanto, 1980)

XEROPHTHALMIA AND DIETARY PRACTICES: Overall consumption of green leafy vegetables, fruits, eggs, and fish does not seem to differ significantly between groups with and without xerophthalmia. Furthermore, males in high risk areas generally received more green leafy vegetables than females. Eighty to ninety-two percent of males with xerophthalmia received green leafy vegetables in Ambon, Lombok, and West Java, compared to 80%, 83.3%, and 70% for females respectively in those same areas. (Susanto, 1980)

XEROPHTHALMIA BY SEX: More male children with xerophthalmia were found than females. Of the 273 children with xerophthalmia included in the study, 176 (64%) were male, and 97 female. (Susanto, 1980)

FISH CONSUMPTION AND XEROPHTHALMIA: A higher percentage of children with xerophthalmia do not consume fish in their diets in Lombok, Bali, East and Central Java, West Java, and South Sumatra. The opposite holds true for Ambon, Central Kalimantan, and North Sulawesi. (Susanto, 1980)

BITOT'S SPOTS AND BREAST FEEDING: Children with Bitot's spots were less likely to breast feed than were their matched controls ($p<0.001$). 24% of children one year of age who had Bitot's spots were breast fed, and 71% of matched controls who did not have Bitot's spots were breast fed. (GOI and HKI, 1980)

WASTING, STUNTING, AND CORNEAL DISEASE: Wasting was extremely common in the presence of active corneal disease. 46% of 159 patients with corneal disease were wasted to a moderate degree (weight for height less than 80% of standard), and 12% were severely wasted (weight for height less than 70% of standard). The severity of wasting increased with severity of corneal involvement. Milder corneal disease was associated only with stunting. Severe corneal disaease was associated with both wasting and stunting. (GOI and HKI, 1980)

BOTTLE FEEDING AND EDUCATION: Bottle feeding was largely confined to the well-to-do and the well educated. The traditional practice of breast feeding for two years remained intact in most rural areas. (Surjono, 1980)

4. NUTRITION STATUS CORRELATIONS (Cont.)

BOTTLE FEEDING AND DIARRHEA: Among 53 bottle fed children, 43% had suffered diarrhea in the last month. (Surjono, 1980)

REGIONAL

INFANT MORTALITY AND SOCIAL CLASS--CENTRAL JAVA: Upper income women had more live births and higher rates of survival for children than lower income groups. (Hull, 1977)

NUTRITION STATUS AND WEIGHT MONITORING: Seventy-six percent of the children whose nutritional status was normal were weighed regularly, compared to 80% of the children suffering from some degree of mal-nutrition, in an area with an active weighing program. (Griffiths et al., 1980)

ADEQUATE INTAKE AND NUMBER OF MEALS: The children aged 9 months and over who reached 100% adequacy in their nutritional intake were the ones who ate four meals per day. (Griffiths et al., 1980)

WEIGHT FOR HEIGHT, AGE AND PARITY--EAST JAVA: Incidence of low weight for height was more prevalent among mothers over 36 years of age and of parity 5 or more. (Kusin et al., 1979)

RURAL

GOITER AND TASTE: Test data with 600 subjects indicated residents of an endemic goiter community were grossly deficient in the ability to taste salt and bitter flavors. Taste discrimination for both tastes improved significantly after injections of iodized oil. (Chapman, 1980)

URBAN

BREAST FEEDING AND MOTHER'S WORK: 89% of non-working mothers breast fed their children; only 10% of working mothers breast fed. (Sutjipto, 1981)

BREAST FEEDING AND MOTHER'S EDUCATIONS: There was a tendency for mothers with more education to breast feed less. (Sutjipto, 1981)

5. NUTRITION AND HEALTH POLICIES AND PROGRAMS

5.1 NUTRITION AND HEALTH POLICIES AND PROGRAMS, POLICIES

NATIONAL

REPELITA III: Repelita III, the five year plan for the period 1979-84, presents nutritional improvement and equal sharing of the benefits of development as important goals. (Chapman, 1980)

NUTRITION PLANNING: A major objective of the Indonesia Nutrition Development Project (INDP) was to aid the government in the formulation and execution of a national food and nutrition program. A Food and Nutrition Planning Workshop in February 1983 produced strong endorsement (from the coordinating minister for economy, finance, and industry) for assigning nutrition high priority and for expanding nutrition activities. Six months later, this was reiterated as part of work on Repelita IV. (World Bank, 1983)

NUTRITION PLANNING OBJECTIVES AND ACTIVITIES: Improvement of the quality, quantity, and diversification of types of food consumed are formally stated nutrition objectives in the 1979-1984 National Five-Year Plan (Repelita III). In order to attain these objectives, the government has planned the following activities: development of an institution for nutrition and food technology research; program to promote breast feeding, infant weighing, oral rehydration, distribution of viatmin A and iron supplementation; fortification programs for iodine and iron supplementation; analysis of the impact of agricultural policies on nutrition status; a pilot Anemia Intervention program; and a plan to monitor government transmigration schemes. (U.S.A.I.D., 1979)

NUTRITION RESPONSIBILITIES: A cooperative effort is currently taking place between several different sectors of Indonesian society to bring about nutrition improvement. The Directorate of Nutrition decides technical issues; the Directorate of Health Education is responsible for all nutrition education; individual health centers are responsible for the operational aspects of programs. (Israel, 1980)

RICE POLICY: Repelita III, the third five year plan, reversed national rice policy. Rice was demoted from its role as a cultural "super food" and the goal of national self-sufficiency in rice disappeared. Production of substitutes, such as corn, cassava, and wheat flour, was increased. This would greatly reduce the necessity for rice imports, saving millions in foreign exchange and reducing dependence on an uncertain world supply. (Chapman, 1980)

SECOND FIVE YEAR PLAN: Repelita II, the second Indonesia Five Year Plan (1974 to 1979) gave high priority to the improvement of the health and nutrition of the population. (Kardjati et al., 1978)

5.2 NUTRITION AND HEALTH POLICIES AND PROGRAMS, PROGRAMS

NATIONAL

NUTRITION PROGRAM ADMINISTRATION: The program in the 1979-1984 Five-year Plan is coordinated and implemented by an Interministerial Committee composed of representatives from the Ministries of Finance, Planning, Industry, Interior, Agriculture, Education, Religion, Health and People's Welfare. The committee does not have its own implementation funds. (U.S.A.I.D., 1979)

NUTRITION ASSISTANCE: Several international organizations are providing funding and assistance for nutrition planning activities stated in Repelita III (1979-1984). Among them are: IBRD, USAID, FAO (technical assistance), and UNICEF. (U.S.A.I.D., 1979)

UPGK: The Family Nutrition Improvement Program (UPGK), an integrated development program designed to overcome the problem of malnutrition, especially protein-calorie malnutrition, is the principal model for community nutrition work in Indonesia. Activities involved are weighing of children under five years of age and home gardening efforts. These activities are based on efforts by the community itself, through trained village volunteers, under the supervision of Health Center Staff. (Soetarto et al., n.d.)

UPGK DEVELOPMENT: The UPGK Program now reaches about 10,000 individuals. The Government of Indonesia and the project's sponsor, UNICEF, are now examining existing activities in order to eliminate operating difficulties before expanding the program. (Pyle, 1983)

SUPPLEMENTARY FEEDING PROGRAM: One of the main activities of the UPGK is a Supplementary Feeding Program, whose aim is to improve the nutritional status of people in 41,000 villages throughout the country. The individual village programs vary according to how food is provided, the time period, the type of food provided, and whether the specific aim is to aid in recovery or provide counselling and education. (Directorate of Nutrition, 1980)

SUPPLEMENTARY FEEDING PROGRAM: The emphasis of the UPGK is on foods that can be grown locally. The eating pattern of the local community is taken into consideration. Local production of foods required for the program is encouraged, to avoid creating dependency on outside sources and to increase income, through the production of food crops for sale. (Directorate of Nutrition, 1980)

NUTRITION PROGRAMS: The government of Indonesia has been aware of the implications of widespread PEM. In line with the basic concept that development and health go together, the government has been implementing a comprehensive national nutrition program. Through a World Bank-aided Indonesia Nutrition Development Project (INDP) several administration building, educational and field programs have been undertaken. Among these are the establishment of Food Technology Development Center (FTDC) and strengthening of Center for Research and Development of Nutrition (CRDN) and Nutrition Intervention Pilot Project (NIPP) in several areas

of the country and initiation of several other related programs including improvement of village level food storage. (Winarno and Bushan, 1981)

INDONESIA NUTRITION DEVELOPMENT PROJECT (INDP): This project was initiated with World Bank funding in March 1977. The objectives of this 6-year project, implemented by the Ministry of Health, were to: develop measures to improve nutritional status; develop personnel and institutions capable of instituting and managing nutrition programs; and aid the government in the formulation and execution of a national program. Action programs focus on improving the energy and protein intakes of young children, ameliorating iron-deficiency anemia, and changing nutrition habits. The Nutrition Intervention Pilot Project (NIPP) is the largest of the three action programs. (World Bank, 1983)

INDP—NUTRITION INTERVENTION PILOT PROJECT: The NIPP was designed to test new ways of delivering nutrition and health services to women and young children, beginning in 180 villages. The program also included a home and village garden project to increase production of nutritious fruits and vegetables in 18,000 gardens, and a storage program. Mid-project evaluations led to major modifications of the program, which is testing interventions which might later be integrated into the UPGK. (World Bank, 1983)

NIPP ACTIVITIES: The NIPP operated at the village level, through volunteers (kader), who monitored child growth, distributed food to those not growing adequately, and provided nutrition education. Mid-project evaluation has helped resolve many start-up problems, and in early 1983, the NIPP approach was integrated into the 2 major government programs, one in which all children in the growth-monitoring program receive supplemental foods, and one in which none do. (World Bank, 1983)

NIPP—EFFECTS: Evaluation of the NIPP's effect on child malnutrition rates found no improvement in some areas, but in Bojonegro, where leadership has been committed, the rate of malnutrition among children 6 to 17 months old dropped from 53% to 43% between 1978 and 1981, and the rate among those 18 to 35 months old dropped from 70% to 62%. (World Bank, 1983)

INDP—ANEMIA CONTROL PROJECT COMPONENT: Research conducted in 1974 showed that anemia rates were high among adult males, and this project was conducted to decrease those rates and presumably increase workers' productivity. Early success in management and in influencing hemoglobin levels led to rapid expansion of the project, which now reaches 300,000 plantation workers, at the owners' expense. This project is now being evaluated. (World Bank, 1983)

INDP—NUTRITION EDUCATION PROJECT: Another component of INDP was the Nutrition Education and Behavior Change Project, which applied social marketing techniques to the formation of a communication strategy aimed at improving nutrition status. This project had a demonstrably positive effect on the nutrition status of the target population, using only education, through personal and mass-media contacts. The government has announced its intention of using this form of nutrition education in its national program. (World Bank, 1983)

INDP--NE PROJECT: The Nutrition Education and Behavior Change Project began as a pilot project in three provinces: Yogyakarta, Central Java, and South Sumatra. The four stages of the project included training and equiping 2,000 kader (volunteer nutrition workers); initiating a weighing program in each village to reach more than 25,000 children; developing a communications strategy based on family participation; and continuing dissemination of the materials, project implementation and evaluation. (Manoff International, Inc., 1982)

INDP--NE PROJECT--IMPLEMENTATION: Implementation of the project began in 1980. Local officials were introduced to the project's goals and activities. Kaders were provided with educational materials, including posters for home use, and radio spots were distributed to stations. Since the radio spots were not aired as often as had been hoped, they served principally as reinforcement of the education conducted by the kader during home visits which included weighing and growth monitoring. (Manoff International, Inc., 1982)

INDP--NE PROJECT--DEVELOPMENT: To develop the nutrition education campaign, mothers were interviewed in their homes. Mothers answered questions and tried new foods, recipes, and methods of preparation. One key aspect of the process was that they tried all the recommended behaviors for a week. They actively participated in the design of the program. On the basis of information from rural mothers messages with specific recommendations for behavior change were developed. Then materials appropriate for the communications strategy were designed. (Griffiths et al., 1981)

INDP-NE PROJECT--RESULTS: Evaluation of 1000 households (600 invlolved in the project and 400 exposed to other nutrition projects) showed project participants to have more specific information about nutrition problems and what to do about them. Parents in the villages receiving nutrition education were more likely to offer the foods stressed in the messages, and the children had higher protein and calorie intakes. Their growth was significantly better after five months of age than that of children whose families participated in other programs. The evaluation team concluded that the basic communications principles followed in the development of this project were demonstrably effective in improving nutrition status. (Manoff International Inc., 1982)

INDP--GARDENS: The home and village garden component of the Project was implemented in 12,000 households in 521 villages. Evaluation in 1981 found that participating families produced greater quantity and variety of vegetables than other garden-owning families in their villages. The Ministry of Agriculture now promotes gardens through its extension program. (World Bank, 1983)

INDP--INSTITUTIONS: The major institution-building components of the project were strengthening and expanding staff and facilities at the Center for Research and Development in Nutrition (CRDN) and constructing, equipping, and staffing a Food Technology Development Center (FTDC), the first major facility in the world devoted largely to village-level food technology. The FTDC produced the supplementary foods used in the NIPP. (World Bank, 1983)

FOOD TECHNOLOGY DEVELOPMENT CENTER: The FTDC uses cereal and legumes to prepare weaning foods. They use germination techniques and drying methods which eliminate spoilage. Most of the foods are based on mixes of soybeans and rice. (Israel, 1981)

CHIPPS—HEALTH AND NUTRITION: The CHIPPS program, now in pilot stages in West Sumatra, D.I. Aceh, and Nusa Tenggara Timur, includes nutrition in a comprehensive health project and uses an epidemioloigical approach to identifying local health problems and determining how to address them. (Pyle, 1983)

INFORMATION CLEARING HOUSE: Bulletins concerning mothers and children were being distributed by the Directorate of Nutrition on a regular basis. (U.S.A.I.D., 1982)

INFANT FEEDING STUDY: The National Institute of Health Research and Development participated in a four-country study of infant feeding practices managed by the Population Council, Cornell University, and Columbia University. (U.S.A.I.D., 1982)

BREAST FEEDING PROMOTION: The Badan Kerja Peningkatan Penggunaan Air Susu Ibu is a working unit on the promotion of the use of breast milk, founded in Jakarta in July 1977. it consists of ehalth and welfare professionals, womens' organizations, and university professors. The program consists of mass media campaigns to promote nutrition using radio, television, movies, pamphlets, posters, and newspapers. (Sugiono, 1979)

BREAST FEEDING: Breast feeding programs are coordinated by the National Commission on Breastfeeding. The emphasis of their work is on studying breast feeding patterns and dealing with specific problems found in breast feeding, rather than breast feeding in general. (IBFAN, 1981)

VILLAGE FAMILY PLANNING/MOTHER CHILD WELFARE PROJECT: This ongoing project supported the government of Indonesia's current policy on breast feeding and weaning, but there were no discrete breast feeding nor weaning components. (U.S.A.I.D., 1982)

INDONESIA VITAMIN A DEFICIENCY CONTROL PROJECT: This project has both long-term and short-term goals. The long-term goal is to achieve a 70% reduction of vitamin A deficiency by the year 2000, through a change in dietary patterns, including: giving newborn children colostrum, breast feeding for 2 years, introducing vitamin A and carotene-rich foods with children's food, starting at 5 months, and making sure that the diest of pregnant and lactating women include enough vitamin A and carotene-rich foods. The short-term goal, to be attained by March 1984, is a 50% decrease in xerophthalmia through distribution of vitamin A capsules to children between the ages of one and six years, education to increase consumption of vitamin-A-rich foods, increased home production of vitamin A-rich foods, and incrased use of the health center in case of eye problems and illness. (Griffiths, 1981)

VITAMIN A EDUCATION PROGRAM: The Nutrition Education Project (N.E.), the Family Nutrition Improvement Program (UPGK), and the Government of

Indonesia (GOI)-Helen Keller International (HKI) vitamin A prevalence study all have vitamin A education components in their programs. (Griffiths, 1981)

VITAMIN A: Vitamin A deficiency is one of the four major nutrition problems in Indonesia. The Indonesian government recently completed an in-depth study of the problem, in cooperation with AID and Helen Keller International. (Israel, 1980)

BLINDNESS PREVENTION: The final report of the HKI Blindness Prevention Project details the locations and causes of xerophthalmia in Indonesia and provides specific recommendations for addressing each problem. Recommendations include specific foods which should be consumed in greater quantities, or which should be fortified with vitamin A; means of promoting consumption of vitamin A; and program and intervention guidelines. (GOI and HKI, 1980)

VITAMIN A INTERVENTIONS: HKI distributed vitamin A capsultes to 1.4 million children in 1982, in areas identified as most susceptible to xerophthalmia. Radio spot announcements, posters, and jingles promoted "Vitamin A Week" on the island of Lombok. The schoolteacher-training curriculum now contains a chapter on the importance of vitamin A-rich vegetables in children's diets. Investigation of the feasibility of fortifying monosodium glutamate (MSG) with the vitamin is underway. A major study is also underway to determine the relative effectiveness of alternative approaches to delivering and targeting the distribution of the capsules. (HKI, 1982)

VITAMIN A CAPSULES: Mothers shown vitamin A capsules were asked if they had ever seen them before. Twenty-seven percent responded affirmatively. They were from villages in Yogyakarta, Krikilan, and Sakatiga. Twenty-six percent of the mothers who recognized the capsules reported that their children had taken them. (Griffiths et al., 1980)

VITAMIN A CAPSULES: Vitamin A capsules are more widely distributed in Central Java, but knowledge and experience with their use is more widespread in Yogyakarta. (Griffiths et al., 1980)

VITAMIN A INTERVENTIONS: The results of a recently completed survey on xerophthalmia showed that 75% of the children with xerophthalmia consume MSG, a seasoning that is being considered for fortification, and that 90% of the homes of children with xerophthalmia have family members who consume green leafy vegetables regularly. The survey also identified several important dietary solutions for the prevention of vitamin A deficiency for different age groups. Breast feeding was indicated for children under two, vitamin A-rich fruits for children 1 to 3 years of age, and green leafy vegetables for children over two. (Israel, 1980)

LEMBAGA EKOLOGI (ECOLOGY OF RURAL HOME GARDEN): This home garden project is based on the philosophy that it is good to learn from the villagers about their ecological wisdom, its strengths and weaknesses, and its use as a basis for rural development. The gardens have many functions: aesthetic, production of foods, soil conservation, and a social function as a status symbol. (Israel, 1981)

MINISTRY OF HEALTH: The Ministry of Health attempts to provide both preventive medicine and medical care to the population as a whole and is especially concerned with the lower socioeconomic groups and rural people. This involves large general hospitals in urban areas, multi-purpose health centers at the district level, and health posts in larger villages. At all levels, demand for medical services outweighs that for preventive measures. Quality and effectiveness of the system vary by province. (Scrimshaw, 1973)

HEALTH SERVICES: Indonesia has a population of 140 million people, but only 6,000 doctors and 14,000 paramedics, mostly concentrated in cities. Recent development plans place emphasis on rural outreach. This outreach relies primarily on the subdistrict health centers (PUSKESMAS) which serves an average of 40,000 people, but which have been largely under-utilized. (Hull, 1979)

DOCTORS: The aim of the Ministry of Health was to have one government physician for each health center. In Yogyakarta district there are 74 health centers; 67 have MCH programs. There are only 8 M.D.s, and only one has had public health training. Furthermore, salaries are so low that health personnel must earn most of their money in other ways, which may compete with their roles in the health center. (Scrimshaw, 1973)

DOCTORS: Professional salaries are so low, salaried professionals can maintain a reasonable standard of living only through holding multiple jobs. Almost no one is committed to one institution. Doctors, as well as other professionals, often have several appointments in the medical school and government and maintain a private practice as well. (Scrimshaw, 1973)

CATHOLIC RELIEF SERVICES: Included in their activities are 14 projects co-financed with USAID: 8 agricultural projects, 4 nutrition projects, 1 credit union project, and 1 scholarship project. (TAICH, 1977)

DEVELOPMENT ASSISTANCE PROGRAMS: CARE currently has a program which seeks to improve the nutritional status of low income groups. Specific activities deal with water supply; rabbit, poultry, and goat raising; vegetable production; and construction of sanitary facilities. (TAICH, 1977)

RADIO: The Carr Foundation sponsors a radio program emphasizing preventive medicine. Specific messages concern: dental hygiene, disease prevention, drug abuse, ecology, family planning, mental hygiene, nutrition, and sanitation. (TAICH, 1977)

REGIONAL

SAVE THE CHILDREN—D.I. ACEH: Save the Children initiated a nutrition intervention program in Kecamatan Tangse in the Special Territory of Aceh on the island of Sumatra, in January 1977, with funding from US/AID. They used a Community Based Integrated Rural Development strategy. Projects implemented include the establishment of village health posts staffed by trained local volunteers; child weighing programs; food preparation demonstrations; soybean processing; construction of latrines;

planting of home gardens; creation of fish ponds; and immunization of preschool and school-age children. The number of data elements recorded by Save the Children staff are limited, and observations were not regularly timed, making analysis of such data difficult. Complete results of this study are presented in Vol. VI of this series. (Drake, 1980)

SAVE THE CHILDRE—D.I. ACEH: This project is aimed at improving the health and nutrition in the area. Activities include village participation in programs for changing attitudes and practices in health and nutrition; development of education materials, training of community workers, and increasing participation of government agencies in village level health and nutrition materials. (Israel, 1981)

JAPANESE NUTRITION PROGRAM—D.I.ACEH: The Japanese government funded a survey to look at the status of family planning, nutrition, and prevalence of parasites in children between 6 months and 15 years of age in Aceh Utara. The survey will be carried out by the Indonesian Family Planning Program, a private group in Aceh. On the basis of the results, nutrition and deworming activities will be planned. (Griffiths and Pyle, 1982)

VITAMIN A PROGRAM—D.I.ACEH: A special vitamin A project is underway in parts of Aceh, because of the high prevalence of xerophthalmia in this province. Vitamin A capsules are also distributed every 6 months to children who are weighed through the UPGK program. (Griffiths and Pyle, 1982)

UPGK—D.I.ACEH—EFFECTS ON MALNUTRITION: Formal evaluation of UPGK in Aceh has not been carried out. General impressions indicate that malnutrition dropped from 35-45% to 30-40% between 1980 and 1981. Estimates of severely malnourished children dropped from 5-15% to 1-8% over the same period. (Griffiths and Pyle, 1982)

UPGK—D.I.ACEH—ACTIVITIES: The UPGK program in D.I. Aceh began in 1979. Sources of funding are the Department of Health in Jakarta, the provincial budget, and INPRES (special funds set aside for provinces by Presidential order). UPGK is an integrated community nutrition improvement program involving a variety of sectors in the planning and implementation of its activities. These activities include providing expertise and materials for home gardens, child weighing, and growth monitoring as well as distribution of vitamin A capsules and iron pills, and supplying money for rehabilitative supplementary daily feedings (PMT). (Griffiths and Pyle, 1982)

PUSAT GIZI—IRIAN JAYA: Pusat gizi is a new nutrition rehabilitation and nutrition/agriculture education program in Miyambou. It will provide a weighing program for under-fives with support for families requiring supervision, as well as education sessions for mothers; a rehabilitation program involving parental participation in meal preparation, and agriculture and health sessions. (Eng, 1982a)

PUSAT GIZI GARDEN—IRIAN JAYA: A garden was established in Miyambou in conjunction with the pusat Gizi nutrition rehabilitation and

nutrition/agriculture education program. Crops grown were: sweet potatoes, soybeans, winged beans, string beans, celery, and amaranthus. However, the crops were debilitated by insects and fungus diseases. (Eng, 1982a)

COCONUT OIL COOPERATIVE—IRIAN JAYA: The Catholic Church in Syuru is involved in a coconut oil cooperative along with the villagers, which they feel is a promising possible source of concentrated energy and protein and should therefore be extended to other areas. (Eng, 1982b)

VITAMIN A INTERVENTION—CENTRAL JAVA: The dosage administered to the target population was 200,000 IU of vitamin A with 40 IU tocopherol acetate (vitamin E) in oil. The capsules were of a soluble gelatin type, administered by cutting off a protrusion at one end and squeezing the contents into the recipient's mouth. The principal advantage of this type of capsule is that it is easy to administer to fussy children because the oily contents are difficult to spit out. (A.F.O.B., 1975)

VITAMIN A INTERVENTION--CENTRAL JAVA--ACCEPTANCE: Following administration of vitamin A capsules, field workers encountered reports of vomiting and diarrhea. These cases were investigated by a physician who concluded that the reported illness was not related to ingestion of the vitamin. These reports did not significantly affect the acceptablity of the capsule in general. (A.F.O.B., 1975)

VITAMIN A INTERVENTION--CENTRAL JAVA--RESULTS: Ninety percent of the baseline cases were reexamined after six months. The remainder were lost due to mortality, migration, or non-cooperation. Of the 90% reexamined, 91% were considered to have recovered from xerophthalmia. It was not possible to attribute this conclusively to administration of vitamin A, because continuous surveillance was not possible, and dietary changes may have occurred. (A.F.O.B., 1975)

PROBLEMS WITH HEALTH CENTERS—CENTRAL JAVA: Women in Ngaglik were reluctant to attend Health Centers (PUSKESMAS). Clinics are usually only open in the mornings when women are most busy. The services of the clinic are given free of charge only to women presenting a "poverty certificate," which must be obtained from a village administrator, a humiliating experience for many people. Transportation costs are also a problem. (Hull, 1979)

PROBLEMS WITH MIDWIFE TRAINING COURSES—CENTRAL JAVA: Traditional midwives (dukun bayi) in Ngaglik, asked why they did not want to attend the government training course, answered that they were illiterate, were afraid of being embarassed in front of others, or that the course was being held too far away. (Hull, 1979)

NUTRITION AND INCOME GENERATION—EAST JAVA: Under USAID sponsorship, a pilot project has been established to provide income needed to improve diets. The income-generating project, in 24 villages, will provide small loans for women in order to tie together activities in population, nutrition, and credit, which are now conducted independently because of the vertical organization of most programs. (Pyle, 1983)

CARE NUTRITION PROJECT—WEST JAVA: CARE conducted an integrated nutrition project combining nutrition education with food production and distribution of vitamin A capsules to infants, preshool-age children, and pregnant mothers. (TAICH, 1977)

UPGK—NUSA TENGGARA TIMUR: The UPGK program began in Nusa Tenggara Timur began in 1980. It was scheduled to be introduced to 128 villages by the end of 1982. The villages are in 52 subdistricts in 12 districts. It is funded by the Department of Health and UNICEF. (Griffiths and Pyle, 1982)

UPGK—NUSA TENGGARA TIMUR—EDUCATION: "Healthy and Prospering Family Program" (P2WKSS) and the "Role of Women in Health Development" (P2WPK) are two programs designed to strengthen the educational component of UPGK and promote self-sufficiency in the program areas. They are both run by the "Family Welfare Movement" (PKK) at the village level. They began in Nusa Tenggara Timur in 1979 and receive money from the Department of Health, which is used for cooking demonstrations. (Griffiths and Pyle, 1982)

UPGK—NUSA TENGGARA TIMUR—WEIGHING: The UPGK program in Nusa Tenggara Timur places emphasis on weighing, but lack of cooperation on part of the mothers has been cited as a major problem in the region. Reportedly only 48% of the children in those areas were ever weighed even once between April and September 1981. Mothers reportedly say that they have to walk too far to get the children weighed or that they are too busy. (Griffiths and Pyle, 1982)

UPGK—NUSA TENGGARA TIMUR—SUPPLIES: Each UPGK village in Nusa Tenggara Timur received 600 high dose vitamin A capsules, 51,000 iron tablets, and 50 packets of oralite. There are no reliable estimates of coverage or supplies needed. Each village received the same amount of supplies. (Griffiths and Pyle, 1982)

NUTRITION EDUCATION IN SCHOOL—NUSA TENGGARA TIMUR: One teacher per school is trained in health and nutrition education. The teacher is responsible for the education of the children, improvement of sanitation, school gardens, and ensuring medical follow-up for sick children. A rapid review of the curriculum indicated that it requires specific adaptation to Nusa Tenggara Timur Province. (Griffiths and Pyle, 1982)

NUTRITION REHABILITATION—NUSA TENGGARA TIMUR: There is a Rural Youth Program in Nusa Tenggara Timur, which is primarily involved in taking malnourished children to subdistrict level community health centers. (Griffiths and Pyle, 1982)

DEPARTMENT OF SOCIAL WELFARE—NUSA TENGGARA TIMUR: The Department of Social Welfare has a nutrition program in Flores, Sikka district, in the province of Nusa Tenggara Timur. (Griffiths and Pyle, 1982)

UPGK--SUMATERA BARAT: According to provincial authorities, there are a total of 171 active UPGK villages in 34 subdistricts in 6 districts in the province of Sumatera Barat. These include 57 started in 1981-82 and 90 to be initiated in 1982-83. Fifteen villages that were in the program

for three years are no longer being supported; two are reportedly still functioning. (Griffiths and Pyle, 1982)

SELF-HELP VILLAGES—SUMATERA BARAT: Sumatera Barat has an unusually large number of self-help villages. According to provincial authorities, there are over 500 such villages. The activities carried out are: monthly weighing, food demonstration, and education programs, similar to UPGK. (Griffiths and Pyle, 1982)

CATHOLIC RELIEF SERVICES: Catholic Relief Services operates Maternal and Child Health clinics, nutrition education, and supplementary feeding programs in the provinces of Jakarta, Surabaya, and Jayapura. They also broadcast a weekly radio nutrition program in the local language. (TAICH, 1977)

FOSTER PARENTS' PLAN, INC.: Foster Parents' Plan, Inc. administers nutrition and first aid programs in Bali. In Yogyakarta (Java) they administer pre-natal and post-natal care programs, a nutrition program, and an "under-five" program. (TAICH, 1977)

MENNONITE CENTRAL COMMITTEE: Provides personnel and supplies for family planning and mother-child clinics in Central Java. (TAICH, 1977)

OVERSEAS EDUCATION FUND OF THE LEAGUE OF WOMEN VOTERS: Provides consultancy and leadership training primarily for women's organizations working in community development, in programs involving education, nutrition child care, kindergartens, and youth groups. (TAICH, 1977)

PROJECT CONCERN: Administers a comprehensive program of health care, including a maternity and maternal-child health clinic, with a weekly nutrition clinic including examination of malnourished children by doctors and nutrition education for mothers. (TAICH, 1977)

NUTRITION COURSE: Unevangelized Field Missions, Inc. operates a vocational school which includes a course in nutrition. Other courses are home economics, hygiene, carpentry, and practical mechanics. (TAICH, 1977)

6. COMMENTARIES

NATIONAL

INFANT MORTALITY: The rate of infant mortality, 100 per 1000 live births, is high compared to 38 in neighboring Malaysia and 68 and the Philippines and is ascribed to wide-spread protein energy malnutrition. (Winarno and Bushan, 1981)

DIETARY PATTERNS: Family food habits are not necessarily an accurate reflection of what children eat. Parents do not seem to have any knowledge of how to avoid xerophthalmia. Children receive a part of the food that is available for the family but often do not receive green leafy vegetables, while older family members do. (Susanto, 1980)

VITAMIN A STATUS SURVEYS: The International Vitamin A Consultative Group Report (1976) provides scientifically sound guidelines for conducting a xerophthalmia prevalence survey, but the sophistication involved in its use limits its application to studies sponsored and funded by international agencies or the central government. (Kusin et al., 1977)

COMBATTING XEROPHTHALMIA: To combat xerophthalmia the following steps were recommended: fortify a suitable food consumed by xerophthalmic children, distribute high potency vitamin A capsules, refine the messages delivered by nutrition and health educators, and give health personnel further training in control of xerophthalmia. (GOI and HKI, 1980)

BITOT'S SPOTS AND PROGRAMS: Males were more likely to have Bitot's spots than females, but males were not necessarily more likely to suffer xerophthalmic corneal destruction. Therefore, intervention programs must pay equal attention to both sexes. (GOI and HKI, 1980)

FEEDING PROGRAMS: Widespread concern was expressed that the distinction between rehabilitative and educational/demonstrational feeding is not being clearly made. Community interest in the nutrition program is apparently heavily dependent on the supplementary feeding activity (PMT), and community motivation to participate drops off when outside assistance for PMT stops. One of the objectives of the CHIPPS program is to determine the most effective use of supplementary feeding activities. (Griffiths and Pyle, 1982)

REGIONAL

ASSESSMENT OBSTACLES: Not all of the under-fives in Sawaer and Syuru had known dates of birth. Only children whose dates of birth were known were included in the nutritional assessment using Waterlow's Classification. (Eng, 1982a)

MATERNAL AND CHILD NUTRITION STATUS—IRIAN JAYA: Based on information from nutritional status assessments of children under five, using Waterlow's Classification, it was felt that the nutritional status of pregnant and lactating women in Syuru and Sawaer (Irian Jaya) was poor, and in particular, that their intake of both protein and calories must be inadequate. (Eng, 1982b)

6. COMMENTARIES (Cont.)

CAUSES OF MALNUTRITION: Specific information on the underlying causes of malnutrition in the province of Sumatera Barat are unavailable. Some general information reported is that areas in transition between agriculture and case economies are likely to suffer the most from malnutrition. Furthermore, the local population is thought to be adverse to eating vegetables. Rice is the predominant staple. There are no seasonal hunger periods in this province. (Griffiths and Pyle, 1982)

BIBLIOGRAPHY

A.F.O.B. (American Foundation For Overseas Blind, Inc.)

1975 An Evaluation of the Vitamin A Deficiency Prevention Pilot Project in Indonesia 1973-1975. New York: American Foundation for Overseas Blind, Inc.

Original data
Method: This was a study based on repeated ophthalmologic examinations of experimental and control group subjects, at 6-month intervals, with vitamin A (200,000 I.U.) and placebo treatment. The examiner examined the anterior segment of each eye, noting occurrence in one or both eyes of: xerosis of the conjunctivae and/or cornea, Bitot's spots, dryness, wrinkling, thickening of the bulbar conjunctivae, corneal scarring, or active corneal disease related to hypovitaminosis A.
Sample: 2,812 children: 1,409 males and 1,403 females, aged 12-60 months.
Location: seven urban and five contiguous villages in the upland plateau area of Central Java, 50 km. inland from the provincial capital of Semarang.

This was a pilot project with two major components: a clinical study to determine the biological effectiveness of vitamin A capsules in preventing xerophthalmia, and an assessment of the distribution system. The overall prevalence of xerophthalmia from the baseline examination was 4.7%. There was a strong overall male/female differential, (6.1% to 3.4%), but no significant urban/rural differential. One of the major findings was that signs of xerophthalmia are easily reversible, but the study has a methodological limitation in that continuous surveillance was not possible. Concerning distribution, the major findings were that the 200,000 IU dosage was acceptable, and that it was feasible to reach a substantial proportion of the pre-school population, but that the system of distribution was dependent on administrative support.

Boediman, D., Ismail, D., Iman, S., Ismangoen, and Ismadi, S. D.

1979 Composition of breast milk beyond one year. Tropical Pediatrics and Environmental Child Health, August, pp. 107-109.

Original data
Method: Fifteen ml. of breast milk were taken using a breast pump at unselected times of lactation and analyzed for protein, fat, and lactose.
Sample: 197 mothers who were unselected attendees at maternal child health clinics.
Location: Semi-urban areas around Yogyakarta.

Proximate composition of protein, fat, carbohydrate, and vitamin A of the milk of women who had nursed for one to two years was found to be substantially the same as the milk in the first year of lactation. No correlation between milk composition and maternal and infant nutritional status was found

Cameron, M. and Cerutti, E. R.

1980 Consultant Report for Indonesia (August 27-30, 1980). Newton, Mass.: International Nutrition Communication Service, Education Development Center.

This report summarizes the proceedings of the Second National Symposium for Promotion of Breastfeeding in Indonesia, which was held at the University of Manado, North Sulawesi, Indonesia, from August 27 to 30, 1980. The International Nutrition Communication Service (INCS) was represented by two consultants who delivered papers on the mechanics of lactation and the role of supplementary foods during lactation. Two highlights of the Symposium were roundtable discussions on the practice of rooming-in, and on the establishment of breast milk banks. The report also includes Ms. Cameron's recommendations for improving breast feeding practices in Indonesia and a copy of the paper that she presented.

Chapman, B.

1980 Traditional Food Systems and Development. Unpublished. University of Hawaii, Department of Geography.

Original data
Method: Medical geographic investigation of food marketing and consumption. Included diet survey.
Sample: Entire village.
Location: Unspecified village on the banks of the Serayu river in Java.

Although iodine need was greatest among pregnant and lactating women and young children, most of these groups were at a disadvantage for receiving an equal share of the iodine-rich seafoods cooked in a house. This disadvantage has been exacerbated in recent years by the replacement of fish flakes with MSG in cooking.

The Directorate of Nutrition
The Directorate General of Community Health Development

1980 Results of Workshop on Supplementary Feeding Program in the context of Family Nutrition Improvement Program, Cisarua, January 6-8, 1980. UNICEF and the Department of Health, Jakarta, January.

Drake, W. D., Miller, R. I., and Humphrey, M.

1980 Project on Analysis of Community Level Nutrition Programs. Final Report: Analysis of Community-Level Nutrition Programs, Vol. I. Washington, D.C.: U.S. Agency for International Development, Office of Nutrition.

This report presents the conclusions of a study carried out by the US/AID Office of Nutrition, aimed at identifying the characteristics of successful community-based nutrition interventions. Eight interventions were chosen for an in-depth analysis, one of which was in Indonesia. The criteria for selection included a distinct locally

defined component, an explicit goal to improve the nutrition of preschool children, potential for long-term continuation beyond the pilot stage, and a data base amenable to quantitative and qualitative review. The report concluded that a successful nutrition intervention needs to articulate a theory of the "local nutrition system," so that it can identify the critical relationships between clinical as well as environmental, social, and economic factors involved in malnutrition. The intervention must also have a monitoring and evaluating component, place emphasis on local involvement, bridge local and non-local systems,
and ensure a critical level of intensity in order to obtain results.

Eng, J.

1982a Visitation with Julie and Doug Miller, The Evangelical Alliance Mission, Miyambou, Bird's Head, Irian Jaya, Indonesia, 24 November-1 December 1981. Irian Jaya Development Information Service Center, Abepura, Irian Jaya, Indonesia, February 8, 1982.

The report is an account of a brief visit to the Bird's Head area, Irian Jaya, and specifically to the villages of Miyambou, Catabou, and Ugjek. Observations on agricultural, harvesting, marketing, and nutritional practices are given, along with information on the Pusat Gizi and other local health programs and information from an interview with a local woman, in which customs surrounding pregnancy, childbirth, and lactation are discussed.

Eng, J.

1982b Field Report of a Visit to the Asmat, 29 July-5 August 1982, Merauke Kebupaten District, Irian Jaya, Indonesia. Jayapura: Irian Jaya Development Information Service Center.

Original data
Method: Children under five years of age were selected on the basis of having a known birth date. Their nutritional status was assessed using Waterlow's Classification, and the results tabulated.
Sample: 81 children from Syuru and 51 children from Sawaer
Location: the villages of Syuru and Sawaer, in the Asmat, Irian Jaya, Indonesia.

This is a report of a visit to the Asmat, including the town of Agats and the villages of Syuru and Sawaer in Irian Jaya. The visit included a nutritional assessment of 60 girls aged approximately 14 to 18 living at St. Theresia, SKP YPPK, a "training center," in Agats, a visit to the village of Yamesh, and nutritional assessments of children under five in the villages of Syuru and Sawaer. Based on the data, the author inferred that the nutritional status of pregnant and lactating women in Syuru and Sawaer was probably poor. Children in Syuru were taller than children from Sawaer, but had insufficient weight for their height. Children from Sawaer were more often stunted in their growth but had more adequate weight for their heights. Also included are the results of a brief observational study of foods being prepared in the home and foods available for purchase in Agats stores.

GOI and HKI
(Government of Indonesia and Helen Keller International)

1980 Indonesia: Nutritional Blindness Prevention Project, Characterization of Vitamin A Deficiency and Xerophthalmia in Indonesia, and Design of Effective Intervention Program. Final Report. Prepared for U.S.A.I.D., Washington D.C. by the Government of Indonesia and Helen Keller International, N.Y.

Original data
Method: Four studies were carried out. Study I was a prospective study of preschool children reexamined every three or four months. Studies II and III were prospective detailed clinical, biochemical, bacteriological, and histopathologic studies of children with xerophthalmia. Study IV was a nationwide cross sectional study of blindness including physical examination and household interviews.
Sample: Study I examined 5,000 preschoolers in six villages in one province; Studies II and III followed all patients, regardless of age, who came to the Cicendo Eye Hospital between June 1977 and June 1978 with signs of xerophthalmia. Study IV included a random sample of 36,000 preschool children.
Location: Study I was in West Java, Studies II and III were conducted at the Cicendo Eye Hospital, West Java, and Study IV was conducted in 23 of the 27 provinces in Indonesia, covering 96% of the population.

Xerophthalmia was found to be a serious public health problem in Indonesia. More than 60,000 children develop gross corneal involvement each year; at least one-third of these children are left permanently blind or visually impaired in both eyes. Xerophthalmic children consume fewer leafy green vegetables than normal children and ingest less edible fat, essential for efficient absorption and utilization of vitamin and provitamin A. Mothers frequently say that children do not like green leafy vegetables and that is the reason for not eating these foods. For children under two years of age, continued breast feeding and consumption of papaya are important determinants of xerophthalmia.

Gracey, M.

1978 "Polluted water and childhood diarrhoea in Jakarta, Indonesia." Prog. Wat. Tech. 2(1/2):57-64. Pergamon Press Ltd.

Original data
Method: A sample survey was used to confirm that bacterial contamination was present in the Ciliwung River and its adjoining canals, reported in earlier studies. Then, an experiment was used to test the effect of bacterial contamination on intestinal absorption, using a solution of microorganisms taken from the upper intestinal secretions of children, injected into a test group of live rats.
Sample: 20 specimens of water were drawn from the Ciliwung River and its adjoining canals, in the early part of the monsoon season and stored in sterile containers.
Location: urban Jakarta

Earlier reports of contamination of the Ciliwung River were confirmed through the analysis of water specimens from the river, which revealed the presence of a variety of enterobacteriaciae, including Klebsiella, E. cloacae, E. agglomerans, Salmonella, and Shigella. In order to determine the effects of bacterial contamination on malnourished children, an experiment was performed in which micro-organisms isolated from the upper intestines of children were used to infect rats. The results are reproduced in tables which suggest that bacterial infection has a noticeable effect on sugar and oleic acid absorption, and other fluid and electrolyte transport across the small intestine, which might contribute to the observed incidence of diarrhea. These microorganisms, not normally found in the mouth and throat, were also found in the oropharyngeal microflora of malnourished children living in poor conditions in Indonesia, and among Aboriginal children in Australia, in distinct contrast to well-nourished white children from suburban Perth, Western Australia. Further investigations are required, but these studies, while not conclusive, suggest that environmental factors, such as water pollution, may influence the disease patterns of underprivileged children in developing nations.

Griffiths, M.

1981 Consultant Report for Indonesia (Feb. 9-March 1, 1981). International Nutrition Communication Service (INCS). Newton, MA: International Nutrition Communication Service, Education Development Center.

In this report the author outlines a plan formulated to help the Government of Indonesia and Helen Keller International develop long-range strategies for the implementation and administration of a vitamin A intervention program. The plan also includes recommendations for improving the health education components of existing intervention programs by determining priority areas for education; specific behavior change objectives; basic messages to be communicated; media and communication channels; and areas for further concept testing. The report is meant to serve primarily as a basis of departure for intersectorial discussion and to stimulate the needed participation of different sectors in the implementation of the plan.

Griffiths, M. and Pyle, D. F.

1982 Consultation on Provincial Level Nutrition Planning in D.I. Aceh, Sumatera Barat, and Nusa Tenggara Timur: Analysis and Recommendations for the Comprehensive Health Improvement Program--Province Specific.

This report presents the authors' recommendations for nutrition-related activities to be pursued under CHIPPS for the provinces of D.I. Aceh, Sumatera Barat, and Nusa Tenggara Timur. These recommendations can be grouped into three general areas: surveys of nutrition status to determine the nature, magnitude, and causes of malnutrition among vulnerable groups; workshops and training; program development and implementation. In addition, the report provides a brief background on each province, summarizes available nutrition data and programs currently in operation (related to both agriculture and nutrition), and provides an estimate of the amount and kind of technical assistance

required to carry out these recommendations. The report also includes a glossary of frequently encountered Indonesian terms and phrases.

Griffiths, M., Manoff, R. K., Cooke, T. M., and Zeitlin, M.

1981 Mothers Speak, Nutrition Educators Listen Community Participation in Materials Design Indonesia. Washington: Manoff International Inc. February.

This document describes the formation of a nutrition education component of the Indonesian Nutrition Development Project. Mothers were interviewed in their homes where they answered questions and tried some new recipes, foods, and methods of preparation and serving. On the basis of this information from rural mothers messages were developed and materials were designed.

Griffiths, M., Manoff, R. K., Cooke, T, M., and Zeitlin, M.

1980 Mothers Speak and Nutrition Educators Listen: Formative Evaluation for a Nutrition Communications Project Volume I. Washington: Manoff International Inc. Submitted to Indonesian Nutrition Development Project Nutrition Communication and Behavior Change Component. July.

Original data
Method: Open-ended household interviews concerning nutrition, food, child care knowledge, attitudes, and practices were administered as the formative evaluation for a nutrition education program. Community leaders were also interviewed. Actual trials of new methods of feeding infants were observed.
Sample: 328 households selected non-randomly. The sample included 58 pregnant women and 51 infants.
Location: 10 rural villages, 328 homes, in the Special Territory of Yogyakarta and the provinces of Central Java and South Sumatra.

This document presents the results of open-ended, participant-observer type interviews carried out in the homes of rural mothers. On the basis of this information mothers were asked to try changes in child feeding and child care practices. The results of these trials are also reported. The project goal was to develop successful nutrition education methods for rural, low income families. The document contains a great deal of information on the knowledge, attitutdes, and practices of these women.

Hendrata, L. and Johnston, M.

1978 Manual for Community Based Underfives Weighing Program. Jakarta: Yayasan Indonesia Sejahtera.

This report contains general guidelines for health workers on how to set up and carry out a weighing program. It includes information on planning and administrative aspects, equipment and materials needed, how to compile "road-to-health" cards, assessment and follow-up, problems to anticipate, and how to overcome them. There is no specific information on nutrition and health status.

HKI (Helen Keller International, Inc.)

1982 HKI: New Focus on Eye Care; Annual Report 1981-1982. New York: Helen Keller International.

This report presents updates on HKI activities in countries throughout the world.

Hull, V. J.

1979 Women, Doctors, and Family Health Care: Some Lessons from Rural Java. Studies in Family Planning 10(11-12):315-25.

Original data
Method: Longitudinal study of factors determining birth spacing patterns through twice-monthly interviews of women followed through pregnancy, childbirth, and the postpartum period to obtain anthropometric data for women and children, and attitudes and behavior relating to lactation, amenorrhea, and abstinence.
Sample: More than 500 women.
Location: Subdistrict of Ngaglik, Central Java.

Through frequent interviews, researchers from the Population Institute of Gadjah Mada University were able to obtain a great deal of information about maternal and child health during pregnancy and lactation. The interviews also yielded information about traditional beliefs and practices surrounding maternal and child health care, some positive, some negative, and some harmless. Attitudes toward modern medicine were also explored. The article concludes that an alternative approach of modern medicine to village health care which builds on traditional self-reliance would be more effective in helping people learn to take care of themselves.

Hull, V. J.

1977 "A Study of Birth Interval Dynamics in Rural Java." Population Institute, Gadjah Mada University, Yogyakarta, Indonesia and Department of Demography, Australian National University, Canberra, A.C.T., Australia. (Paper prepared for Conference on Nutrition and Reproduction, National Institutes of Health, Bethesda, Maryland, February 13-16, 1977.)

Original data
Method: A study of birth interval dynamics in two rural Javanese villages begun in May 1976. It was carried out in three phases by means of interviews. The first phase was a complete census of the two villages. It was followed by a survey of fertility levels in ever-married women aged 15-49, and a more detailed, prospective study including only women who had delivered since January 1976. This phase included a complete marital and pregnancy history, to be followed up by monthly interviews over a period of two years.
Sample: 15,000 people in 3500 households, including over 2500 ever-married women and 500 women pregnant in 1976.
Location: rural Java

The main focus of the study is the influence of breast feeding, amenorrhea, and abstinence on birth spacing, but attention is also given to more general questions of pregnancy and childbirth, including dietary beliefs and practices relating to pregnancy and lactation. The paper gives some background information on the area, as well as socioeconomic characteristics of the respondents. The findings presented are classified as preliminary, awaiting more detailed analysis.

IBFAN
International Baby Food Action Network

1981 What governments are doing to stop the bottle baby scandal. Minneapolis, Minn.: INFACT.

A National Commission on breast feeding conducted a survey of 375 rural families in order to understand feeding patterns in rural areas. They found several problems, including the belief that colostrum was poisonous, and that mothers have a habit of nursing with only one breast. The new breast feeding program will therefore focus on these specific problems. UNICEF has also supported educational activities related to infant breast feeding in Indonesia.

Israel, R., ed.

1981 Proceedings First Asian Household Nutrition Appropriate Technology Conference: Colombo, Sri Lanka July 12-17, 1981. Sponsored by Ministry of Colombo Hospitals and Family Health, International Union of Nutritional Sciences (IUNS), U.S.A.I.D., UNICEF, and International Nutrition Communication Service (INCS). Newton, MA: International Nutrition Communication Service, Education Development Center.

This document summarizes the proceedings of the first Asian Household Nutrition Appropriate Technology Conference. It includes recommendations of the participants for improvements in and use of nutrition appropriate technology, a summary of ongoing projects using the technology, and technical papers given at the conference.

Israel, R., ed.

1980 Workshop Report for Helen Keller International. Newton, MA: International Nutrition Communication Service, Education Development Center.

This report summarizes the outcome of a two-day nutrition education workshop for the staff of Helen Keller International's Blindness Prevention Department. The purpose was to help HKI develop a stronger nutrition education strategy to help combat xerophthalmia, and provide a technical frame of reference to four key areas of development communications: planning, the development of mass media campaigns, community training, and evaluation. Consultants represented the fields of nutrition education planning, mass media, training and community-based programs, nonformal education, and evaluation. Representatives from three countries with nutritional blindness prevention programs--Bangladesh, Indonesia, and the Philippines--were also present.

Kardjati, S., Kusin, J. A., de With, C., and Sudibia, I. K.

1978 Feeding practices, nutritional status and mortality in pre-schoool children in rural east Java, Indonesia. Tropical and Geographical Medicine 30(3):359-71.

Original data
Method: Interview with parent or guardian, anthropometric measurements of young children.
Sample: 2117 mothers with 2339 children 0-4 years of age.
Location: East Java, the regency of Sidoarjo, plus eight other regencies which are part of the "marginal" areas.

Breast feeding was practiced for prolonged periods in rural areas. 90% to 94% of children 19 to 24 months of age were still breast fed in certain areas. The role of powdered milk was minor. 9% of pregnant women still nursed their youngest child. Supplementary food was introduced at a very early age. Severe malnutrition was found in 1%, 4%, and 10% of age groups 0 to 5 months, 6 to 11 months, and 1 to 3 years respectively.

Kusin, J. A., Kardjati, S., de With, C., and Sudibia, I. K.

1979 Nutrition and nutritional status of rural women in East Java. Tropical and Geographical Medicine 31(4):571-85.

Original data
Method: Data was collected on families, their environment, and their dietary patterns by interview. Mothers were examined and their anthropometric measurements were taken.
Sample: 3,828 mothers of children 0 to 15 years of age, randomly selected.
Location: The rural areas of 9 regencies of East Java: Sidoarjo, Tuban, Lamongan, Bangkalan, Sampang, Pamekasan, Sumenep, Blitar, and Trenggalek.

37% of rural mothers were lactating and 6.7% were pregnant. 10% of pregnant women were still nursing a child. Families averaged 2 to 3.4 live children (the number varied by province), and 10 to 31% reported a child who had died. The average height of mothers was 149 cm. and the average weight 42 kg. Weight gain during pregnancy averaged 5 to 7.4 kg. 18 to 24% of non-pregnant, non-lactating women were below 90% of standard weight for height, 13 to 35% of lactating women fell below the standard.

Kusin, J. A., Parlindungan Sinaga, H. S. R., Marpang, A. M.

1977 Xerophthalmia in North Sumatra. Tropical and Geographical Medicine 29(1):41-6.

Original data
Method: A survey was conducted using a non-representative sample of children aged 0-6 years. Children were examined clinically as well as with a vital staining technique, using Rose-Bengal 1%-Fluorescin

sodium 1% eyedrops. Criteria used for the assessment were those provided by the WHO Report (1976) and the guidelines for the survey were provided by the International Vitamin A Consultative Group Report. Sample: 1,754 children aged 0-6 years of whom 1017 were chosen from 4 villages within a 100 km, radius of Medan, North Sumatra, 377 from a rubber estate, and 360 from the town of Medan. Children were not randomly chosen; children with eye problems are likely to have been over-represented.
Locations a town, a rubber estate, and four rural villages in North Sumatra

The survey was conducted as a preliminary assessment to determine the prevalence of xerophthalmia in North Sumatra and decide whether a longitudinal study of vitamin A would be appropriate in this region. It was conducted over a period of one month, using local health personnel, local census data, and funds from the Provincial Health Service. Minimum point prevalence rates were determined for xerophthalmia, using the guidelines provided by the WHO Report (1976). These rates, corrected to account for the non-representativeness of the sample, were sufficient to consider xerophthalmia a public health problem in the villages, where vitamin A deficiency was most prevalent.

Manoff International, Inc.

1982 Project Description: Nutrition Education and Behavior Change Component, Indonesia Nutrition Improvement Program. Washington, D.C.: Manoff International, Inc., March.

This report presents a detailed overview of the design and implementation of this component of the Indonesia Nutrition Development Project.

Pierce Colfer, C. J.

1981 "Home Gardens . . . Not so Easy." Agenda, October, pp. 8-11.

Long Segar, East Kalimantan, is a resettlement village. The Indonesian government made resources available to settlers to encourage them to become involved in vegetable gardening for nutrition and economic gain. In spite of the government incentives, gardening did not take hold. (A comparison showed that children in Long Ampung, the original village from which the settlers had come, were better nourished.) A study uncovered several reasons why gardening had failed. The program had been directed at men, whereas traditionally, farming was women's work. Also, vegetable gardening required greater use of expensive fertilizers and pesticides which were not always available when needed, livestock were not kept fenced in to protect gardens, refrigeration was lacking, and there was not a consistent demand for vegetable products in local markets. Questioning of the villagers revealed that the solution to these problems, while not unattainable, was not a high priority for the people of Long Segar, who expressed a preference that resources be spent for the education of women.

Pyle, D.

1983 Personal Communication.

Rohde, J. E. and Hendrata, L.

n.d. Development from Below: Transformation of Village-Based Nutrition Projects to a National Family Nutrition Programme in Indonesia. Yogyakarta: Gadjah Mada University; Washington, D.C.: Department of State.

The historical evolution of the 1979-1984 Five-Year Plan is traced through past nutrition programs and policies, and a successful development strategy used in Banjarnegara Regency is described. The approach placed a major emphasis on community participation in the design and implementation of development projects, involving "kaders." Kaders were local leaders selected by the community and trained by the government to provide technical information on specific subjects, such as nutrition, and act as "social motivators" for the community. Important conclusions are drawn from the project which the authors hope will serve as guidelines for a national program, to be included in the 1979-1984 Five-year Plan.

Rohde, J. E., Ismail, D., Sadjimin, T., Suyadi, A., and Tugerin.

1979 Training Course for Village Nutrition Programs.

The authors were asked by UNICEF and the Department of Health to develop and teach a training course for village health workers as part of UPGK, an expanded village nutrition program based on community motivation, participation and self help, involving 80 villages in 15 provinces. In this paper, the authors describe the aims and objectives of the course, the selection and preparation of participants, and the materials and activities used in the course. The course was taught in a setting on the outskirts of Yogyakarta, to allow access to both rural and urban environments. Topics included were: nutriton, anthropometry, weighing, supplementary feeding, first aid, simple curative health services, home gardening, organization, and management. Detailed objectives for each topic are provided.

Sajogyo, Dr.

1974 Summary Review of Findings and Recommendations of the Indonesian ANP-Evaluation Study, 1972-75. Lembaga Penelitian Sosiologi Pedesaan, Institut Pertanian Bogor, June.

Original data
Method: not described
Sample: 1030 households
Location: 30 villages in 8 provinces in Indonesia: 8 villages in Sumatra, 18 in Java, 4 in Bali and West Nusa Tenggara

The purpose of the study was to analyze the nutrition problems of rural households and specify the need for nutrition education within

designated target groups, and to determine the potential for village self-help in carrying out nutrition-related activities.

Scrimshaw, N. S.

1973 Project Site Visit Report--Rockefeller University Development Program--Yogyakarta, Indonesia, February 5-11, 1973. Unpublished.

This report describes a consultant visit to Indonesia in order to observe schools of medicine and agriculture and to meet with government officials.

Soenarto, Y., Sebodo, T., Ridho, R., Alrasjid, K., Rohde, J. E., Bugg, H. C., Barnes, G. L., and Bishop, R. I.

1979 Acute diarrhea and rotavirus infection in newborn babies and children in Yogyakarta, Indonesia, from June 1978 to June 1979. Journal of Clinical Microbiology 14(2):123-29.

Original data
Method: Electron microscopy of fecal specimens from children admitted to hospital with acute diarrhea.
Sample: 268 children and 86 newborns of low socioeconomic status and 139 children and 39 newborns of advantaged socioeconomic status admitted to the hospital with acute diarrhea.
Location: Yogyakarta.

These was little variation throughout most months of the year in numbers of children admitted to the hospital for acute diarrhea and in the number of children infected with rotaviruses. Both decreased during November and December, coincidentally with seasonal change from dry to wet conditions. Rotavirus particles were identified by electron microscopy in fecal specimens from 126 of 334 (38%) of infants and children with acute diarrhea. Socioeconomic status and preexisting nutritional status did not influence the incidence of rotavirus excretion. Rotavirus infections were most common in children aged 6 to 24 months.

Soetarto, A., Hendrata, L., Rohde, J., Satoto, and Sardjimin, T.

n.d. UPGK Programme Manual.

This manual was intended to provide a simple, practical guidebook for field-workers connected with the Family Nutrition Improvement Programme (UPGK). It was published in conjunction with a flipchart (Lembaran Balik) to be used for communicating nutrition information to the community. The manual includes detailed specification of behavioral change objectives, guidelines for implementation to be followed by field workers, topics to be covered in training programs for Nutrition Cadres, specification of materials to be used in the program, information about specific foods to be eaten, what to do about illnesses such as diarrhea, guidelines for referral of cases to Health Centers, and procedures for monitoring and evaluation of the program.

Sommer, A., Hussaini, G., Tarwotjo, I., Susanto, D., and Soegiharto, T.

1981 Incidence, prevalence, and scale of blinding malnutrition. Lancet, pp. 1407-08.

Original data
Method: (1) A longitudinal study of preschool children in West Java who were examined every three months. The study collected socioeconomic and medical data and brought children to centers for clinical exams. (2) A cross-sectional national study of randomly selected preschool children who were examined for xerophthalmia.
Sample: (1) 4595 preshool children in six villages; included all children under six years in the villages. (2) The national sample of 27,084 preschool children was selected by randomized multistage cluster probability sampling.
Location: (1) The prospective study was carried out in West Java. (2) The cross-sectional study was national.

The incidence of active corneal xerophthalmia was 5 per 1000 in West Java, and the average prevalence during each round of examinations was 12 per 10,000. In the national survey of rural children the prevalence of active corneal disease in preschool children was 6.4 per 10,000. It was estimated that over 60,000 Indonesian children become xerophthalmic annually.

Sugiono, M.

1979 "Current Status of Breastfeeding Practices and Supplementary Food in Indonesia (Country Report)." Workshop on Breastfeeding and Supplementary Foods, Bangkok, Thailand, 17-18 November 1979. Institute of Nutrition and Department of Pediatrics, Mahidol University, Bangkok, Thailand.

This country report presents information drawn from a variety of studies and covers the provinces of North, West, and South Sumatra; West Kalimantan; West Nusa Tenggara; and South Sulawesi. It includes some background information on the Indonesian population, its health infrastructure, the relationship of educational, social class, and residential variables on breast feeding and weaning practices, and the relationship of breast feeding on amenorrhea, abstinence, and birth spacing. It concludes with recommendations for promoting increased breast feeding and some consideration of the constraints on implementation posed by current attitutdes toward breast feeding, the limitations of the health infrastructure, the increasing number of women working outside the home, and other factors.

Surjono, D., Ismadi, S. D., Suwardji, and Rohde, J. E.

1980 Bacterial contamination and dilution of milk in infant feeding bottles. Journal of Tropical Pediatrics 26:58-61, April.

Original data
Method: Mothers provided 10 ml. samples of milk from bottles they were using to feed infants. Mothers were interviewed and samples were

processed in the microbiology laboratory.
Sample: 30 urban and 23 rural mothers.
Location: Two urban and two rural health centers.

Formula is sold with clear directions written in the Indonesian language. Despite this, the sample milk was contaminated and incorrectly prepared. Milk sampled from feeding bottles was highly contaminated by fecal organisms. One third of the samples were less than 50% of the proper dilution. Mothers who bottle fed tended to be better educated and from wealthier backgrounds. 43% of the bottle-fed infants had had diarrhea in the last week. The authors conclude that bottle feeding is dangerous, children receiving bottle feeds are at high risk, and their mothers should be given additional guidance to overcome the dangers of this feeding method.

Susanto, D.

1980 "Dietary Habits of Children With and Without Xerophthalmia." World Health Organization Meeting on Vitamin A Deficiency and Xerophthalmia, Jakarta, October 13-17, 1980. Bogor, Indonesia: Nutrition Research and Development Center.

The author studied the dietary patterns of children in relation to their families' dietary patterns, and by sex. The results are presented in separate tables for each of the following foods: green leafy vegetables, fruits, eggs, fish, wheat, sugar, and MSG (monosodium glutamate). They did not find a clear-cut difference in dietary habits between the two groups, leading them to hypothesize that other factors might be responsible for the incidence of xerophthalmia, such as factors which might inhibit the process of carotene/vitamin A utilization.

Sutjipto, A., Purba, D., Nazir, N., Purba, M. D., and Siregar, H.

1981 A survey on breast feeding practices at Dr. Pirngadi Hospital medan. Paediatrica Indonesia 21:51-60, March-April.

Original data
Method: Questionnaire concerning infant feeding practices.
Sample: Mothers of 65 children birth to two years of age treated in the Department of Child Health, Medical School, University of North Sumatra, Medan.
Location: University of North Sumatra, Medan.

A survey of child feeding practices found that 43% of children 0 to 2 years of age were breast fed; 21% received breast and other milk; 30% received only other milk; and 4.6% got no milk. When non-breast milk was used as an additional milk feeding, it was most commonly started at age 3 to 6 months. Mother's education and occupation were important determinants of child feeding practices.

TAICH

1977 TAICH COuntry Report: Development Assistance Programs of U.S. Non-Profit Organizations: Indonesia. New York: American Council of Voluntary Agencies for Foreign Service, Inc., Technical Assistance Information Clearing House.

This is a detailed report of the activities of 65 private, non-profit U.S. organizations carrying out development assistance activities in Indonesia. It is updated periodically. The kinds of activities included in the report are: communications; community development; construction, housing & planning; cooperatives, credit unions & loans; economic & development planning; education; equipment & material aid; food production & agriculture; industrial development; medicine & public health; nutrition; population & family services; public & business administration; social welfare; women; and youth.

Terreri, N., Dilts, R., Thorburn, C., Moeliono, I. M., and Yunus, I.

1979 Participatory Techniques for Nutrition Education: Nutrition Education Project. Workshop A. Saree, Aceh (Sumatra), Indonesia. Westport, Connecticut: Save the Children.

This report describes the activities of Workshop A, one of three workshops on nutrition education held in the Special Territory of Aceh on the island of Sumatra, Indonesia. The workshop, part of a larger project being carried out jointly by Save the Children and the Provincial Department of Health, took place from March 18-April 1, 1979. Twenty-three participants from the ten subdistricts identified as target sites were involved. The project has five specific objectives: a) to increase the participation of villagers in village health/nutrition programs, b) to develop appropriate health/nutrition educational materials, c) to train community workers in all aspects of the project, d) to increase the participation of government agencies involved in the development of educational materials, and e) to design an effective strategy for use of media and materials to accomplish the project objectives.

U.S.A.I.D.
(U.S. Agency for International Development, American Embassy, Jakarta)

1982 Telegram Re: Review of Breastfeeding, Weaning and Maternal Nutrition Programs. Jakarta.

This telegram was a response to an A.I.D./Washington request for information on current breast feeding, weaning, and maternal nutrition programs.

U.S.A.I.D.

1979 Preliminary Overview of Nutrition Planning Activities in Selected Developing Countries. Washington, D.C.: U.S. Agency for International Development, Office of Nutrition, July 3, 1979.

This article briefly outlines the planning objectives and activities included in the 1979-1984 National Five Year Plan, its legal basis, the ministries responsible for its implementation, and sources and amounts of external assistance for designated program activities.

World Bank

1983 Nutrition Review. Washington, D.C.: World Bank, Population, Health and Nutrition Department, November.

This draft report presents an overview of World Bank nutrition investments, including details about the development of the Indonesia Nutrition Development Project.

Winarno, F. G. and Bushan, B.

1981 Development of Appropriate Technology for the Manufacture of Weaning Foods and Food Supplements. Food Technology Development Center, Bogor, Indonesia. In Israel, R., compiler, First Asian Household Nutrition Appropriate Technology Conference: Colombo, Sri Lank, July 12-17, 1981, pp. 211-234. Sponsored by Ministry of Colombo Hospitals and Family Health, IUNS, U.S.A.I.D., UNICEF, and INCS. Newton, MA: International Nutrition Communication Service, Education Development Center.

A number of formulations of food supplements and weaning foods designed to counter widespread malnutrition in Indonesia have been developed and field tested for nearly 3 years. The appropriate equipment for the manufacture of these foods has also been designed, fabricated, and installed in some village locations. Several hundred units are now operating in the areas by the people's own initiative, the transfer of technology taking place through the multiplier effect. The Food Technology Development Center (FTDC) is developing improved weaning foods based on germinated cereals and legumes which are expected to be more nutritious, less bulky, and more easily assimilated by the child.

YIS
(Yayasan Indonesia Sejahtera)

1980 "Vibro" No. XXIII (a quarterly newsletter of Community Development)

Record of a conversation between a YIS field worker and a villager in East Java. A nutrition program had been started in the village but was no longer running at the time of the conversation. At that time, in spite of the dry season, the young children appeared to be healthy. The mothers continued to feed them soybean powder mixed with rice, salted fish, and red beans, as they had been taught by the health worker in the nutrition program.

REFERENCES OF INTEREST

Peng, J. Y.

1979 The role of traditional birth attendants in family planning programs in South-East Asia. International Journal of Gynaecology and Obstetrics 17(2):108-113.

Singarimbun, M. and Manning, C.

1979 Breastfeeding, Amenorrhea, and Abstinence in a Javanese Village: A Case Study of Mojolama. Studies in Family Planning 7(6):175-179, June.

Suharyono and Tumbelaka, W. A. F. J.

1980 Breast Milk vs. Artificial Milk in Diarrhoeal and Other Enteric Disorders. Division of Gastroenterology, Dept. of Child Health, Medical School, University of Indonesia, Jakarta, Indonesia.