

Nutritional status and reproductive health of Orang Asli women in two villages in Kuantan, Pahang

Lim Hwei Mian and Chee Heng Leng

Department of Community Health and Nutrition, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor

ABSTRACT

The study was conducted to determine the nutritional status and reproductive health of 34 Orang Asli women, aged 16-45 years, from two Orang Asli villages in Kuantan, Pahang Darul Makmur. The results of the study indicate that on the whole, the women's nutritional status is generally not satisfactory. Their mean iron intakes for example, are very low, about one-quarter to one-third of the required level. All their other mean nutrient intake levels are below the required level. Only their mean intake of vitamin C exceeds the required level due to their frequent intake of raw vegetables. Their main source of carbohydrate is rice, while their main source of protein is fish, and their main source of minerals and vitamins are Chinese mustard and cabbage. From BMI measurements, it is found that less than half of the women (42.9%) have normal weight, 35.7% suffer from chronic energy deficiency (CED), 7.1% (one) are overweight, and 14.3% (two) are obese. The accessibility and availability of food are a problem for the women, limiting their choice of varieties of food sources. For their reproductive health needs, the pregnant women rely on the government hospital and clinics for their antenatal check-ups and birth deliveries. Of all the women, nine suffer from menstrual pain and five from vaginal discharge. Food taboos and cultural practices are practised by the pregnant women during their confinement. It is concluded that the nutritional status of the women needs to be improved since most of them have insufficient nutrient intake.

INTRODUCTION

Malaysia, formerly a country whose economy depended on the agrarian sector, is now being recognized as "one of the most successful cases of economic development in the Third World" (Vokes, 1990). Nevertheless,

Malaysia still faces a problem of uneven development although the country is considered relatively small. There are still communities that have been 'left behind' by the

rapid development and urbanization, thus not able to enjoy the benefits of the nation's development and affluence. These communities are the marginal or peripheral communities.

One definition of marginal or peripheral communities is 'communities that consist of small populations with somewhat fundamental technology where they usually work with simple basic tools' (Kessler, 1993). Another definition of marginal communities is that 'they are basically poor, having limited access to or control over the country's material resources' (King & Parnwell, 1990). These communities also lack infrastructure and basic amenities such as piped water, electricity, sanitary latrine, adequate housing and health care services.

The Orang Asli, the indigenous people of Peninsular Malaysia, are considered one of the peripheral communities due to their impoverished condition and lack of access to resources. This ethnic group is divided into three main groups, that is the Negritos, the Senoi, and the Proto-Malays. A national census in 1993 showed that there were only about 92,529 Orang Asli, comprising 2,972 Negritos, 49,440 Senoi, and 40,117 Proto-Malays (Jabatan Hal Ehwal Orang Asli, 1993), making up 0.49 percent of the total population of Malaysia (Malaysia, Department of Statistics, 1994).

Poverty among the Orang Asli often leads to the neglect of their health, and of essential needs like proper clothing, and nutritious food for the whole family (Abdul Halin Hamid, 1990). Poverty, insufficient food, inadequate distribution of food, cultural practices like food taboos, and ignorance of nutritional requirements due to the lack of

education are some of the factors contributing to undernutrition in general (King & Burgess, 1993). One review (Chee, 1995) states that studies in the 1980s among the Orang Asli communities showed that they have monotonous diets lacking in calories, vitamins, and minerals. The problem of undernutrition among the Orang Asli has been reported in numerous studies; for example by Ismail, Wong and Zawiyah (1986), Mohd Sham Kassim (1986), and Khor (1988).

Despite all the research, little is known about the health status of Orang Asli women. Winikoff (1988) points out that when there are major health problems in a community, usually the focus will be on its effects on the children. She suggests that the authorities should look into women's health problems instead when dealing with community level health problems.

For young adolescent girls, it is important that they get sufficient nutrition in order to enable their body to develop fully and prepare for childbearing. For adolescent mothers, they are at greater risk of giving birth to premature and low birth weight babies because their bodies are not prepared for reproduction yet (Smyke, 1991). Nevertheless, undernourished mothers, be it adolescent or adults, have a higher risk of giving birth to low birth weight babies (King and Burgess 1993). If the baby is a girl, she may in turn grow up to be

stunted, and become an undernourished woman. Then she will face higher risks of giving birth to low birth weight babies and suffer from other health problems too. This situation will be aggravated when the women have to bear the burden of working outside the home as well as being responsible for domestic tasks. This cycle of undernutrition will keep on repeating itself unless it is broken by the women having access to food, as well as adequate preventive and curative health services.

Considering the limited research so far available on the health status of Orang Asli women the present study was proposed as a contribution to redress the imbalance. The purpose of this study is to determine the nutritional status of a group of Orang Asli women, their reproductive health, the factors (demographic, socioeconomic, family and community, and cultural practices) related to their nutritional status and reproductive health, and their utilization of health care services during reproduction.

METHOD

Location of Study

The location of this study is at Kampung Orang Asli Sungai Soi (KSS) and Kampung Batu 15 (KB15), both situated along Jalan Kuantan, Pekan, Pahang Darul Makmur. These two villages are about ten kilometers away from each other. Both the villages were selected for the study because the communities belong to the same sub-ethnic group, the Jakun of the Proto-Malays, and some of them are related to each other by blood or through marriage.

The study was conducted from 20th. November to 11th. December 1996.

Respondents

All women, aged 16 to 45 from both villages, were invited to participate in the study since the population from each village is small. It is a known fact that most Orang Asli villages have a low population density and this is shown in the study conducted by Sham Sani (1986) and Ismail et al. (1986). Khor (1985) in her study mentioned that although the population in non-RPS (Rancangan Penempatan Semula) villages in the periurban areas are higher than those in the interior areas, they rarely exceed 200 or 250 people. Besides the village population being small in number (124 from KSS and 70 from KB15), the intensive nature of the study and the limitation of resources and time were also factors leading to the small sample size. The total number of respondents is 34 women (20 from KSS and 14 from KB15) excluding four women from each village who declined to be interviewed. Thus, 81% of the women in the reproductive age from the two villages participated in the study.

Data Collection

This is a descriptive cross-sectional study using both quantitative and qualitative methods. For quantitative data collection, pre-coded questionnaires were used when interviewing each respondent. The questionnaires were used to collect data on the background of the

respondents, socioeconomic and demographic factors, family and community factors, cultural practices including food taboos, reproductive history of the respondents, and their utilization of health care services during reproduction. The qualitative method used is in-depth interviewing guided by open-ended questions. It was conducted among all the respondents. This method enables the interviewer to probe and explore in greater detail the attitudes and experiences of the respondents (Hoinville et al., 1978), while giving the women the opportunity to express their feelings and experiences freely.

Anthropometric measurements--weights (kg) and heights (cm)--were taken. Dietary intake was assessed by a one day 24-hour recall and food frequency during the weekday. The single day recall is suitable for obtaining a cross-sectional nutritional snap-shot of a group of respondents. A study by Bingham et al. (1994) on the comparison of dietary assessment method in nutritional epidemiology confirms that the results from this method can be "compared suprisingly well" with the results obtained through a four day food weighing method, using an electronic scale. The food frequency questionnaire consists of a list of frequently taken foods based on reading of the recent literature on food intake in Orang Asli communities (Ali, Shamsuddin & Khalid, 1991; Khor, 1988; and Ismail et al., 1986) and from personal knowledge of common local foods.

Data Analysis

Data was analysed using the SPSS software. It is used to obtain percentage, mode, and mean. The anthropometric measurements were used to calculate body mass index (BMI) which was according to the method of Ferro-Luzzi et al. (1992) (see Table 1). In this study, Obesity Grade I is referred to as overweight whereas Obesity Grade II is referred to as obese (Millar & Stephens, 1987). The BMI is used to reflect the nutritional status of the non-pregnant women (James, Ferro-Luzzi & Waterlow, 1988).

Table 1: The Classification of Body Mass Index (BMI).

<16.0 kg/m ²	Chronic Energy Deficiency (CED) Grade III
16.0-16.9 kg/m ²	CED Grade II
17.0-18.4 kg/m ²	CED Grade I
18.5-24.9 kg/m ²	Normal
25.0-29.9 kg/m ²	Obesity Grade I
30-39.9 kg/m ²	Obesity Grade II

Source: Ferro-Luzzi et al., 1992.

Dietary intakes from the 24-hour recall were calculated using the Demeter software. The nutrient intake of each respondent is calculated based on the "Malaysian Food Composition Tables" (Tee et al., 1988). The nutrient intakes are then compared with the Malaysian Recommended Dietary Allowance (RDA) for non-pregnant women, pregnant women, and lactating

women (Tee et al., 1988:279).

RESULTS AND DISCUSSION

Orang Asli Women

Demographic and Socioeconomic Characteristics

Table 2 shows that about half of the women (47.1%) are in the age group of 20-29 years old, with only 2.9% aged 40 and above. Eight of the women are single, six married but non-pregnant, five pregnant, and 15 lactating. Of the pregnant women, one is in her first trimester, one in her second trimester, and three in their third trimester. On average, the lactating women have been lactating for a period of 10 months.

In general, the educational level of the women is low, with 41.2% not ever having attended any formal schooling, 32.4% having attained a primary school education, and 20.5% having attained a secondary school education. Only 5.9% have had a Form Six education.

Half of the women live in households that consist of four to six persons. Another 40% live in households of more than six persons. Less than 10% of the women live in households of three or fewer.

Homemakers constitute 67.7%. These women spend their time managing their families, and planting vegetables or growing fruit trees in their garden for their own consumption. Another 14.7% of the women are employed in the private sector and only 5.9% in the government sector.

Since the majority of the women (76.5%) are either homemakers or are not employed they therefore do not have a personal income. Most of the employed

women have a monthly personal income of more than RM150¹. Their monthly income however, may not give a holistic picture of the women's financial situation, which is more accurately reflected by the monthly household per capita income.

If seen in the context of monthly household per capita income, 71% of the women have a monthly household per capita income of RM1-RM184. Of the others, 11.8% have a monthly household per capita income of RM185-RM276, and six (17.6%) have a monthly household per capita income of RM276 and above². Considering the Poverty Line Income (PLI) in Peninsular Malaysia is RM425 per month for a household size of 4.6 persons (Malaysia, 1996), the per capita PLI would be RM92.39. Table 2 shows that more than one-third (35.3%) of the women are from households categorized as poor.

About half of the women (55.9%) were first married between the ages 16-20 years old, during their late adolescence while three were married before the age of 16 years old. This indicates that they are at high risk of giving birth to premature and low birth weight babies, as the bodies of adolescent girls are not ready for childbearing yet.

¹ The highest monthly personal income is RM560.00.

² The highest monthly household per capita income is RM406.25.

Table 2: Demographic and socioeconomic characteristics of women in both the villages (N=34).

Characteristics	No.	Percentage
Age		
16 - 20 years old	4	11.8
20 - 29 years old	16	47.1
30 - 39 years old	13	38.2
40 and above	1	2.9
Educational Status		
No schooling	14	41.2
Primary school	11	32.4
Secondary school	7	20.5
Pre-university/Form 6	2	5.9
Household size		
1 - 3 people	3	8.8
4 - 6 people	17	50.0
> 6 people	14	41.2
Job Status		
Government	2	5.9
Private	5	14.7
Self employed	1	2.9
Homemaker	23	67.7
Not working	3	8.8
Personal Income Per Month		
RM0	26	76.5
RM1 - RM150	1	2.9
RM151 - RM300	3	8.8
> RM300	4	11.8
Household Per Capita Income Per Month		
RM1 - RM92	12	35.3
RM93 - RM184	12	35.3
RM185 - RM276	4	11.8
RM277 and above	6	17.6
Age at First Marriage		
< 16 years old	3	8.8
16 - 20 years old	19	55.9
21 years old and above	4	11.8
Not married	8	23.5

Dietary Intake

The women are categorized into three groups, that is, non-pregnant, pregnant, and lactating women, for analytical purposes. The mean calorie intake for the non-pregnant group is 1,178 kcal, 1,242 kcal for the pregnant group, and 1,537 kcal for the lactating group (see Table 3). These levels are 40% to 50% short of

meeting the required levels (refer to Table 4 & Figure 1), and are quite similar to the level reported for women in an urban squatter area in Petaling Jaya, Selangor (Chee, 1989). Even allowing for errors of underestimating, this level of calories intake is low, and a cause for concern not least because their daily activity level is quite high as the women have to fetch water from the well and do household chores manually.

Table 3: Calorie and nutrient intake of the three groups of women (mean \pm SD)

Nutrients	Groups of Women		
	Non-pregnant (N=14)	Pregnant (N=5)	Lactating (N=15)
Calorie (kcal)	1,177.5 \pm 413.7	1,241.5 \pm 740.8	1,536.5 \pm 673.9
Protein (g)	40.3 \pm 16.8	46.8 \pm 34.2	52.1 \pm 19.8
Calcium (mg)	483.3 \pm 302.2	753.2 \pm 637.7	645.7 \pm 324.6
Iron (mg)	6.1 \pm 4.0	6.7 \pm 5.0	9.3 \pm 7.7
Vitamin A (ug RE))	314.8 \pm 237.2	534.0 \pm 499.6	567.0 \pm 867.9
Thiamin (mg)	0.4 \pm 0.3	0.5 \pm 0.4	0.6 \pm 0.4
Riboflavin (mg)	0.6 \pm 0.4	0.7 \pm 0.5	0.8 \pm 0.5
Vitamin C (mg)	34.9 \pm 33.5	67.1 \pm 43.8	74.7 \pm 101.9

Table 4: Calorie and nutrient intake of the three groups of women (mean percentage of RDA requirement)

Nutrients	Groups of Women		
	Non-pregnant (N=14)	Pregnant (N=5)	Lactating (N=15)
Calorie (kcal)	58.9	52.8	60.5
Protein (g)	98.3	86.7	80.1
Calcium (mg)	107.4	62.8	53.8
Iron (mg)	21.8	23.9	33.3
Vitamin A (ug RE)	42.0	71.2	47.3
Thiamin (mg)	50.0	50.0	58.0
Riboflavin (mg)	50.0	50.0	52.4
Vitamin C (mg)	116.3	134.2	149.3

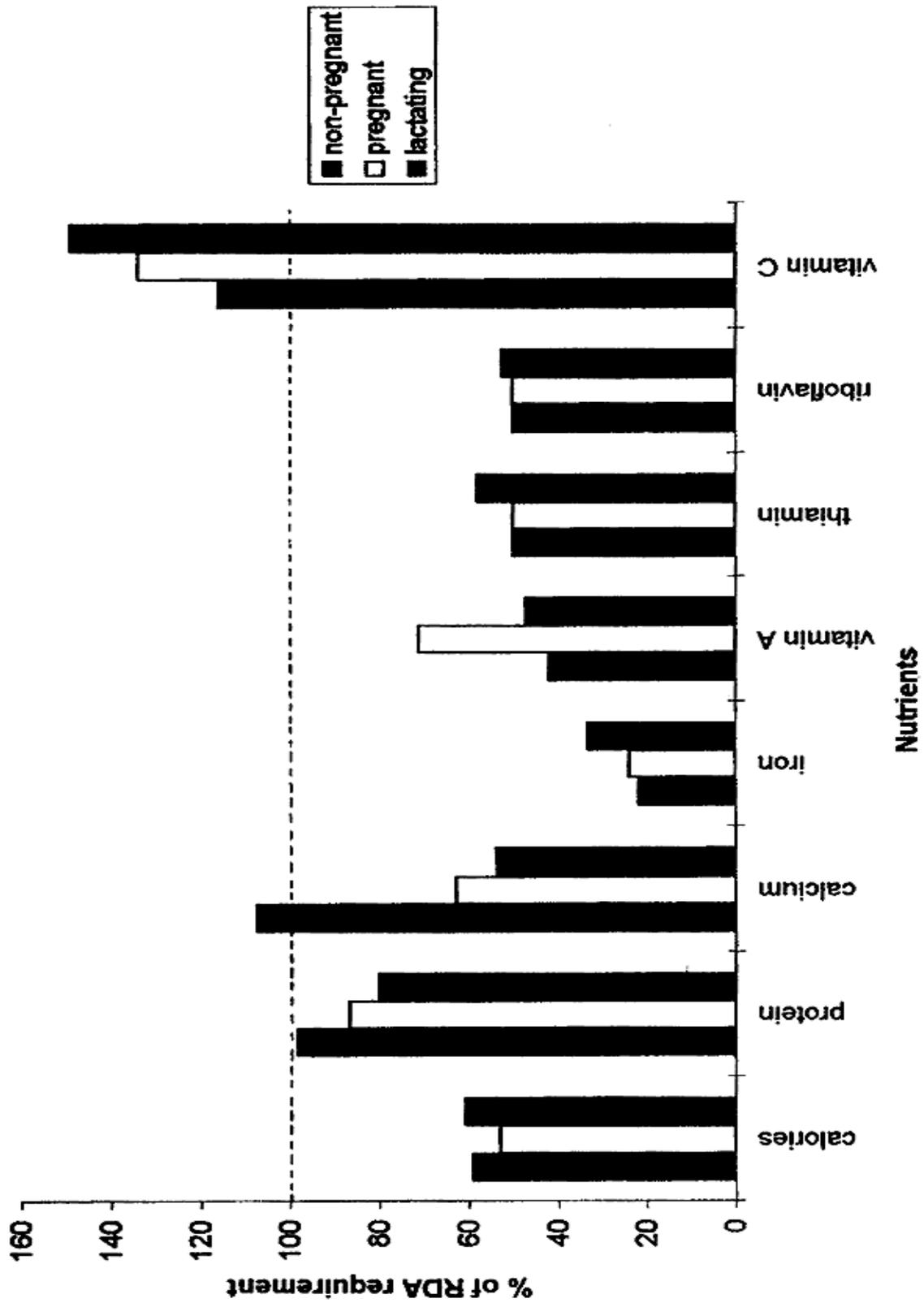


Figure 1. Mean nutrient intake of the three groups of women (N=34)

The main source of carbohydrate for all the women is rice (see Figure 2). Even so, the 24-hour recall data shows that most of the women do not eat much rice during their meals. Another important source of carbohydrate is plain biscuits. Foods such as bread, margarine and potato that are not easily available are only eaten if there is an opportunity for shopping in town. Since most of the households do not have refrigerators they seldom or rarely take foods that need to be refrigerated, such as butter, kuih teow and butter cake.

The mean protein intakes for the three groups range between 40g to 52g (see Table 3). These intakes are between 2-20% less than the required levels (Table 4 & Figure 1). Figure 3 depicts that their main source of protein is fish, in particular, anchovies. Fish is eaten daily by 70% of the women, and "sambal" or anchovies with chillies is eaten daily by more than 30% of the women. The fish is either bought from a food vendor who comes into the villages once a week, or caught by the husbands (if the woman is married) or brothers from a nearby river, Sungai Soi. Normally, it is the small fresh water fishes that they eat. Other sources of protein are sweetened condensed milk and milk powder. Sweetened condensed milk is mixed into coffee or tea that they take for breakfast or during tea time. Rice, which is taken daily, may also be considered a major source of protein. Nevertheless, rice and sweetened condensed milk, are both poor sources of protein. In comparison to studies on low income urban women, the average protein intake for the non-pregnant women in this study is still

lower than that reported by Chee (1989), for pregnant women, lower than that reported by Zawiah (1989).

As for the intake of minerals, the non-pregnant group has a mean calcium intake that exceeds the required level, while the women in the pregnant and lactating groups each has a mean calcium intake that is about 50% less than the required level (see Table 4 & Figure 1). Nevertheless, compared to other studies, the average intake of calcium for the pregnant group (753mg) is much better than their counterparts in low and medium income households in an urban area (Zawiah, 1989, cited in Ismail, 1993). According to Zawiah, the average calcium intake of the 105 pregnant women studied is 430mg per day, which is lower than the average intake levels of the three groups of women in this study.

Figure 1 shows that the mean iron intakes for the three groups of women are the lowest among all the other nutrients, being just between one-quarter to one-third of the required level. This indicates that they are at high risk of being anaemic due to inadequate iron intake, and that they should be examined for anaemia. Three lactating women reported that they were suffering from anaemia during their pregnancy. Whereas, the pregnant women mentioned that doctors advised them to take vitamin supplements in order to "tambah darah" (increase blood), and one lactating woman reported that she had to undergo blood transfusion to treat anaemia when she was pregnant

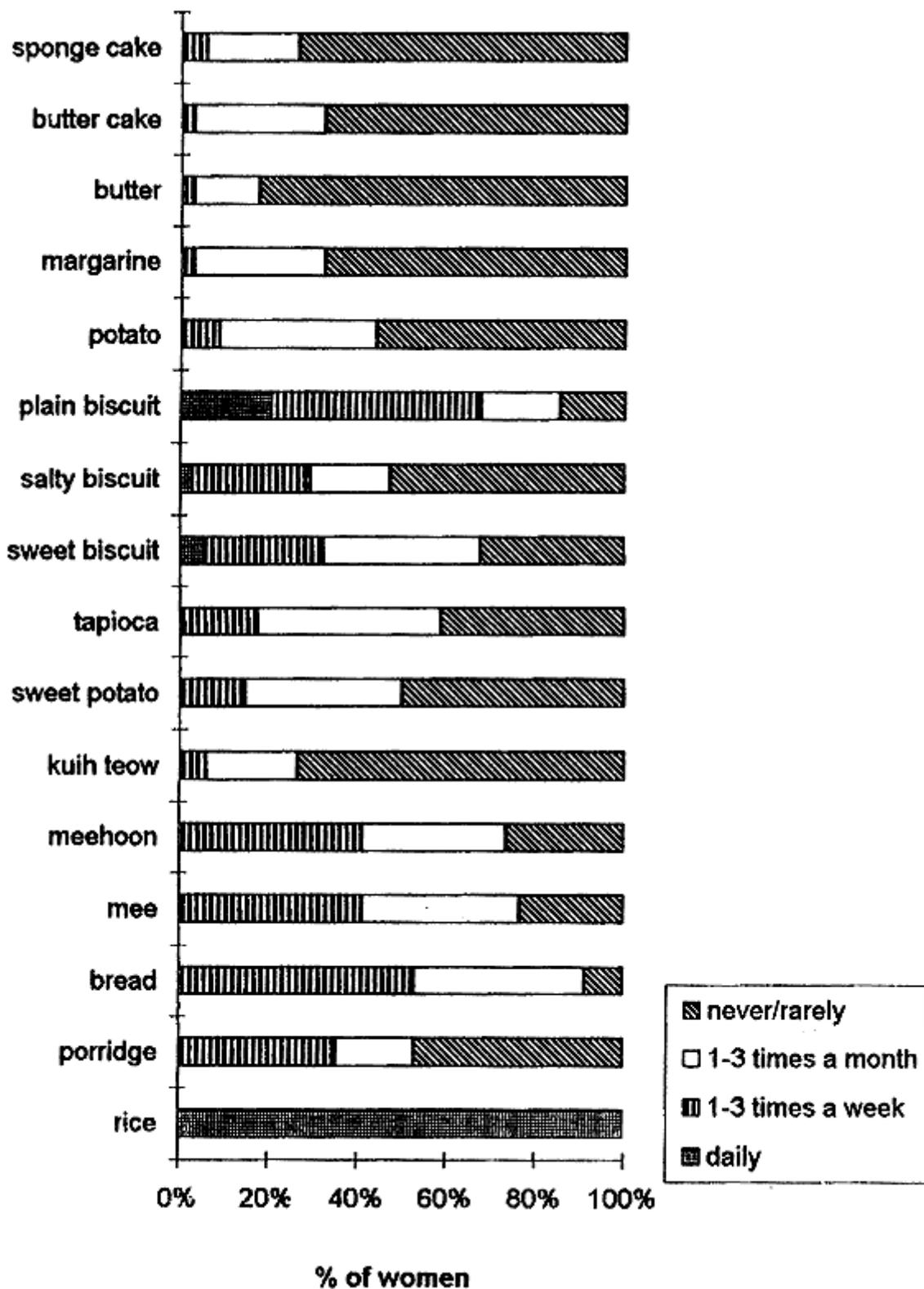


Figure 2. Percentage distribution of food intake frequency: carbohydrate sources (n = 34).

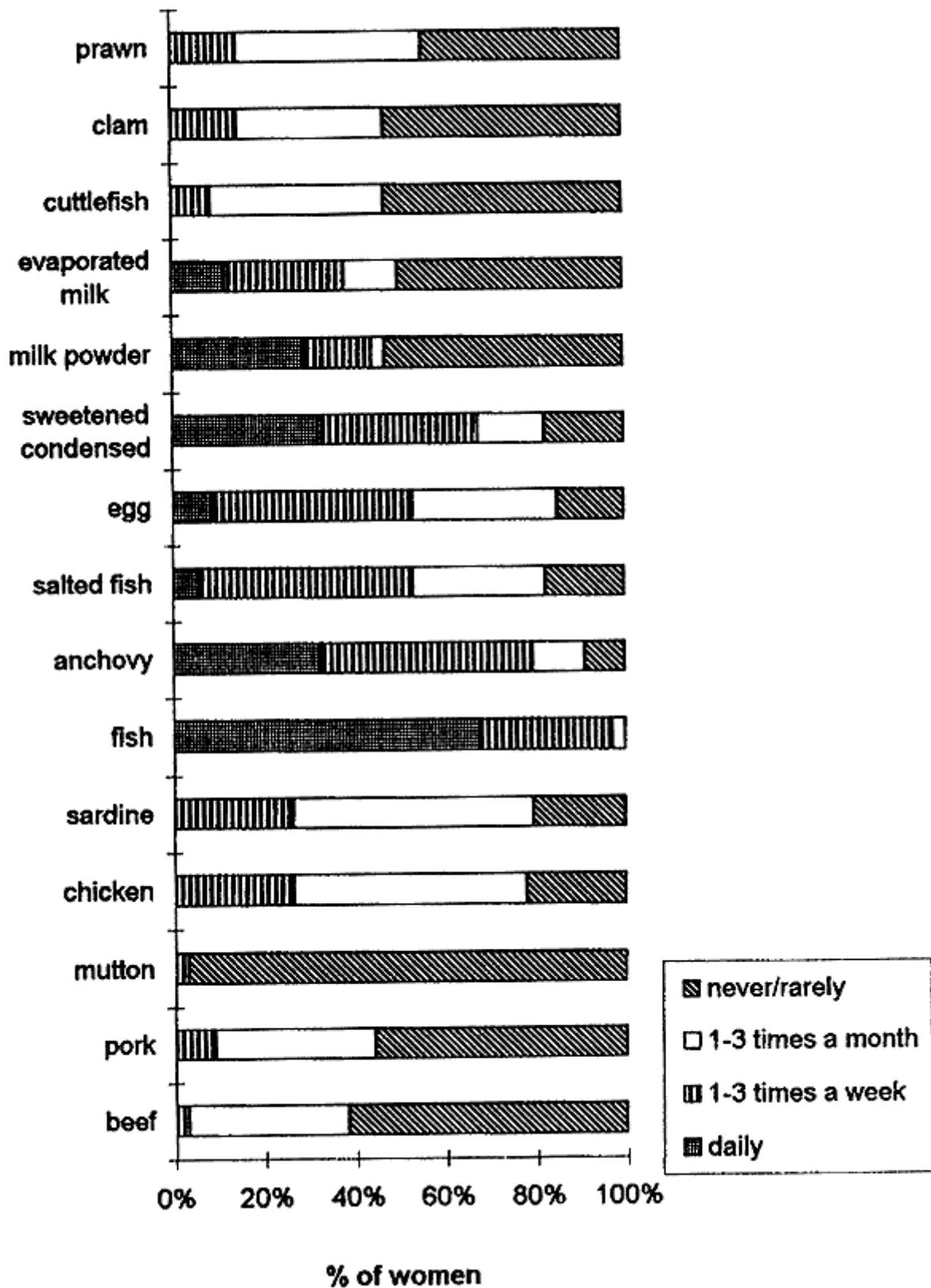


Figure 3. Percentage distribution of food intake frequency: protein sources (n = 34)

The women's mean intakes of vitamin A, thiamin, and riboflavin are also not satisfactory. Their mean intake of vitamin C, however, exceeds the required level for all the three groups (see Table 4). This is because the women take a lot of vegetables, much of it is also eaten raw, which they call "ulam."³

Their mean intake of vitamin A is very poor, about 50% lower than the required level for the non-pregnant and lactating women, and about 30% lower than the required level for the pregnant women. For the non-pregnant women, their average intake of vitamin A is 315ug RE. This level of intake is similar to the average intake of the 46 Indian estate women workers (323ug RE) reported in another study (Chee et al., 1996). The mean intakes of thiamin and riboflavin for each of the three groups are also very low, each about 50% less than the required levels even though they consume foods high in thiamin and riboflavin content, such as fish and vegetables. This is because of the limited varieties and amounts that they consume. Again, the Indian estate women workers in Chee et al.'s (1996) study also report similar levels of intake of thiamin (0.5mg) and riboflavin (0.6mg) when compared to the women in the present study (0.4-0.6mg for thiamin and 0.6-0.8mg for riboflavin).

Figure 4(a) and 4(b) shows that the main sources of minerals and vitamins for a majority of the women are fern shoots, Chinese mustard, cabbage, and banana. The fern shoots, however are getting more difficult to obtain due to the disappearance of the small forest nearby. One woman said

that normally Chinese mustard and cabbage are the only vegetables sold by the food vendor. Cabbage may be a favourite presumably because it can be kept for quite a long time at room temperature without requiring refrigeration. Other sources of minerals and vitamins are long beans, banana, tapioca shoots, spinach, and mung bean. Long beans are usually eaten raw, as "ulam." Banana trees are planted by members of some households; members of households without their own banana trees rarely eat the fruit. Pineapple is never or rarely eaten because it is believed to be a "sharp" food that is not good for women's health. Even though plantain flower is a favourite food among the women, it is never or rarely eaten because it is not available.

The nutrient intake is assessed from dietary intake of foods only. As such, the results presented only reflect food intake and does not include vitamin supplements that they may be taking. However, subsequent interviews show that only five pregnant women and one non-pregnant woman took vitamin supplements. The pregnant women were given the vitamin supplements when they went for their antenatal check-ups. As for the non-pregnant woman, she bought the vitamin supplements through direct selling. The other women did not take any vitamin supplements.

³ An additional reason may also be the analysis of the food composition is calculated from the nutrient content of raw vegetables since the nutrient content of cooked vegetables are not available (Tee et al., 1988).

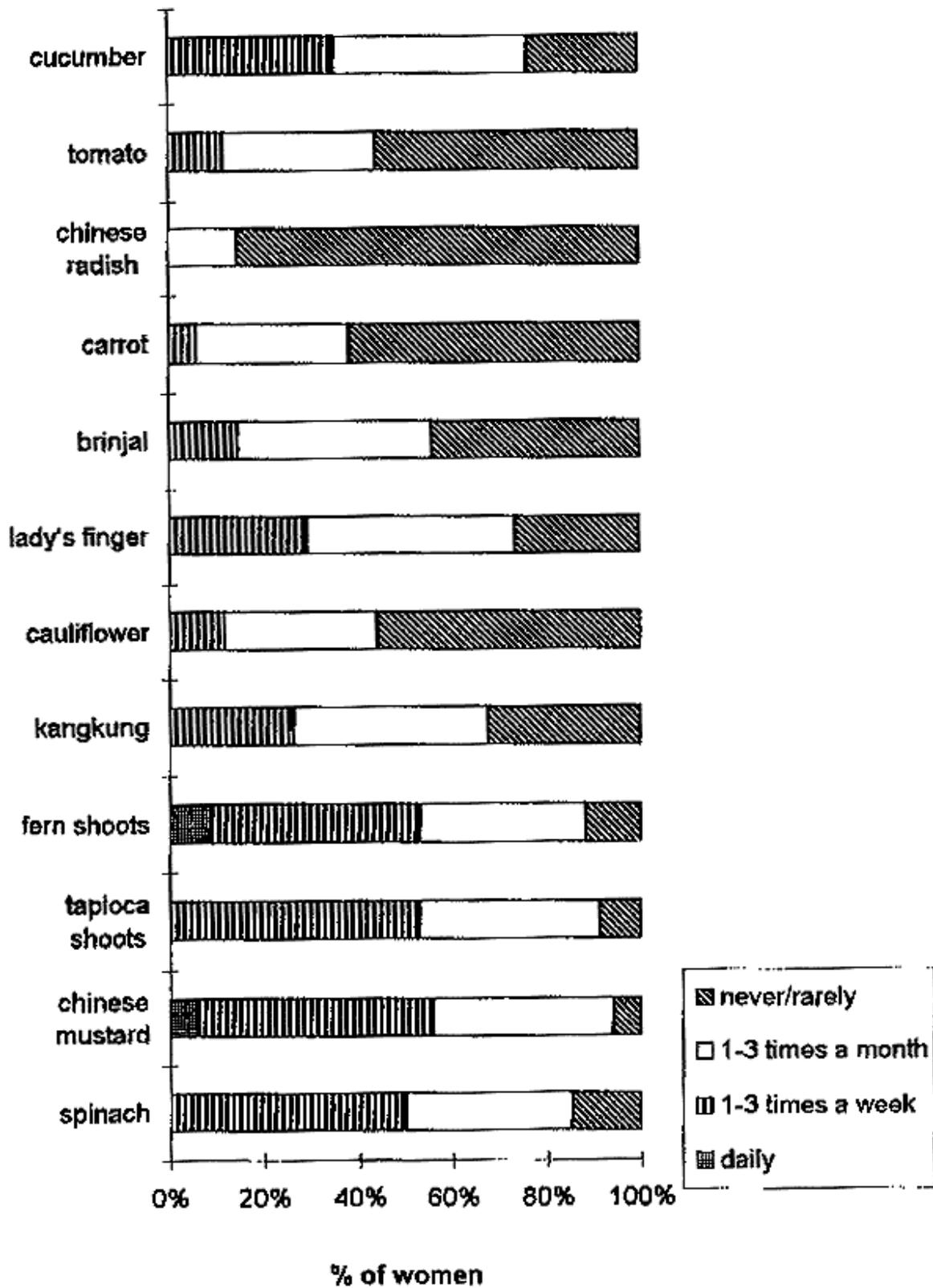


Figure 4a: Percentage distribution of food intake frequency: mineral and vitamin sources (n = 34)

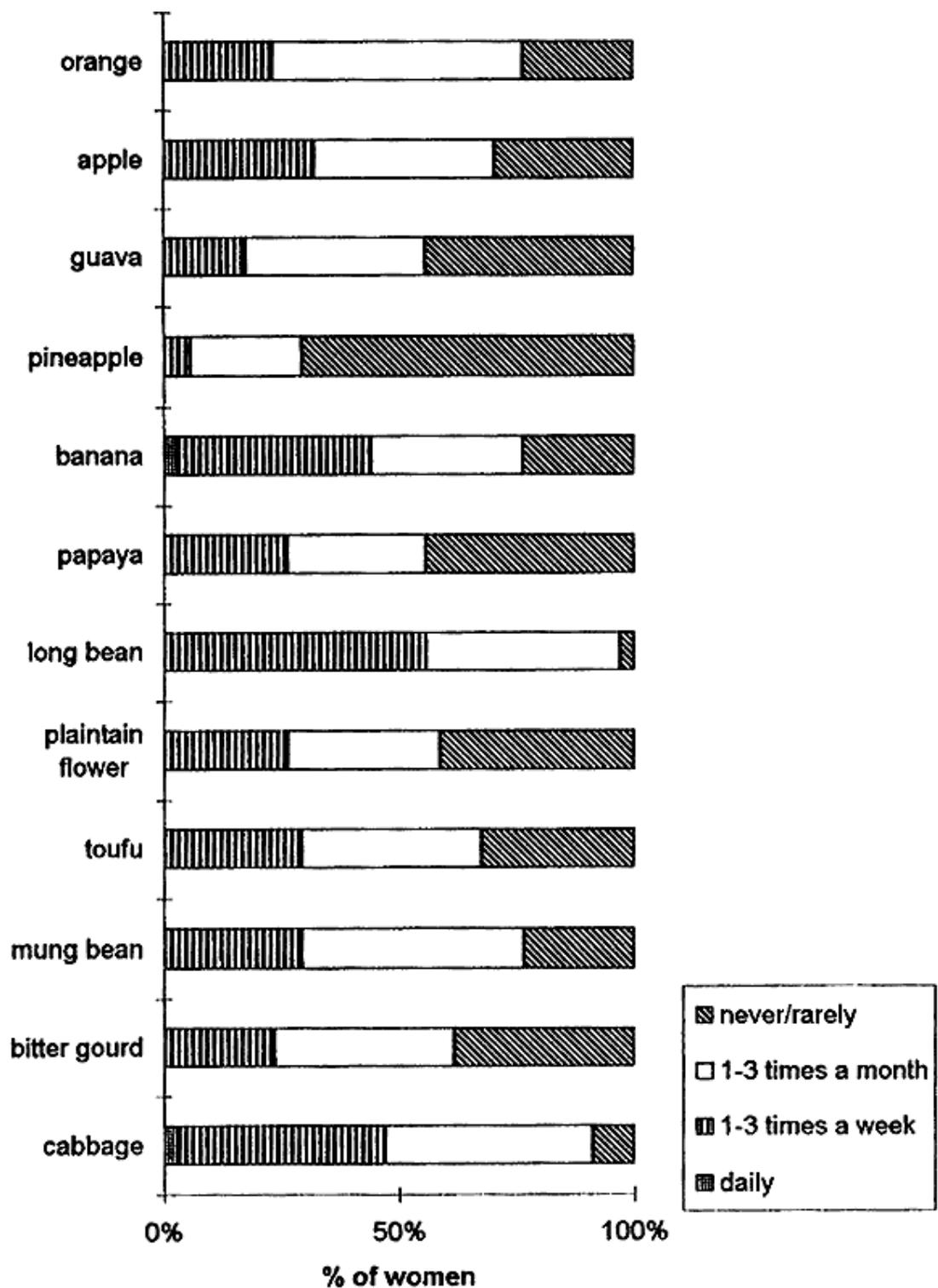


Figure 4b: Percentage distribution of food intake frequency: mineral and vitamin sources (n = 34)

From observation, the effect of seasonal variation on the availability of foods in the two villages are not clear because they are not a hunting and gathering community. Instead, their food intake seems to be influenced more by the accessibility and availability of markets, shops and vendors on the one hand, and their purchasing power on the other. Nevertheless, seasonal variability may have an impact on the general availability of foods (for example, due to the monsoon season, availability of fish may vary). The availability of local fruits, much of it from their own trees, such as durians and rambutans, will also vary according to seasons.

Body Mass Index (BMI) of Non-pregnant and Non-lactating Women

Figure 5 and Table 5 show that six of the women (42.9%) are within normal weight, one (7.1%) suffers from chronic energy deficiency (CED) Grade I, three (21.5%) from CED Grade II, and one (7.1%) from CED Grade III (Ferro-Luzzi et al., 1992). However, one (7.1%) woman is classified as overweight, and two (14.3%) are obese. The high prevalence of CED (more than one third of the women) may be

traced to the poor nutrient intake of the women. Although undernutrition is still a problem in this community, the problem of overnutrition is becoming visible as well. The causes of overweight, however, needs further investigation.

Women's Reproductive History and Health

Reproductive History

As seen in Table 6, about 20 of the women (77%) have had one to five pregnancies and life births. Three women have experienced a miscarriage. Only one woman has had a stillbirth delivery. This occurred during her sixth pregnancy, when she was diagnosed by the doctor as suffering from anaemia.

Half of the women (42.3%) have an eldest surviving child aged between 6-10 years. The majority (69%) have a youngest surviving child who is either an infant or a toddler. Overall, this group of women is still in the early stages of the life cycle, not having yet completed their childbearing years.

Table 5: Body mass index of non-pregnant and non-lactating women (N=14)

BMI	Category	No. of women	% of women
< 16.0 kg/m ²	CED Grade III	1	7.1
16-16.9 kg/m ²	CED Grade II	3	21.5
17-18.4 kg/m ²	CED Grade I	1	7.1
18.5-24.9 kg/m ²	Normal	6	42.9
25-29 kg/m ²	Overweight	1	7.1
30 & above kg/m ²	Obese	2	14.3

Table 6: Reproductive history of married and divorced women in both the villages

Reproductive History	Married and divorced women (N=26)	
	No.	Percentage
No of Pregnancies		
0	2	7.7
1 - 5	21	80.8
6 - 10	2	7.7
> 10	1	3.8
Life Births		
0	3	11.5
1 - 5	20	77.0
6 - 10	3	11.5
> 10	0	0.0
Stillbirths		
0	25	96.2
1	1	3.8
Miscarriage		
0	23	88.5
1	3	11.5
Age of Eldest Surviving Child		
< 5 years old	5	19.2
6 - 10 years old	11	42.3
11 - 15 years old	5	19.2
16 years old and above	2	7.7
None	3	11.5
Age of Youngest Surviving Child		
< 1 years old	9	34.6
1 - 4 years old	9	34.6
5 years old and above	5	19.2
None	3	11.6

Reproductive Health and Health Care

Of the 22 women who have had a pregnancy within the last five years, eight women went for their first antenatal check-up during their second trimester, whereas the others started antenatal check-ups during their first trimester. On the whole, there is a heavy reliance on the government health care services. All the women had their antenatal check-ups at the government clinics, either Desa Ubai Clinic, situated 15 kilometers from KSS and 4.8 kilometers from KB15, or Peramu Jaya Health Clinic, situated 28 kilometers from KSS and 18 kilometers from KB15. However, one woman also utilizes the Kuantan General Hospital, and another had once utilized a private clinic for an ultrasound scan.

Nineteen of the women (88.2%) depend on the public bus service for transportation when they go for their antenatal check-ups. All of them reasoned that they go to the government clinics because the service is good, no fee is required, and it is the only place available. What the women mean by availability is that it is the nearest facility to them. However, for the currently pregnant women, they are less satisfied with the distance they have to travel to go for their check-ups compared to their counterparts who were previously pregnant.

All the women had delivered in the Kuantan General Hospital or plan to do so. They feel that it is safer to deliver in a government hospital. The majority (19) of the women (88.5%) also consider it to be

the nearest birth facility to their villages. There is no standard fee for delivery at the hospital, some are required to pay while others are not. For the currently pregnant women, two women (40%) say it is cheaper to deliver in the government hospital, while the others say they do not know whether it is cheaper or not.

The women did not have any problems in selecting the government hospital for delivery, be it family members' objection, the fees being too expensive, or feeling too far away from their family members. However, four women (26.7%) in the lactating category did feel that they were too far away from their family members.

All the non-pregnant and lactating women are not using birth control, and did not intend to because they still want to have children. Nevertheless, they say they know where to get modern contraceptives, if they should decide to practise family planning. Neither do they use any traditional birth control method.

Of all the women only three have illness or disease at the time of the study. Nine women suffer from menstrual pain, and five from vaginal discharge, but only two of them went to see a doctor. Though the other women say that they do not have any problems about feeling shy, distrusting the doctors or nurses, or distrusting the medicine prescribed for them, none of them went to consult a doctor concerning their pain.

Food Taboos and Cultural Practices

Food Taboos

Food taboos are practised by the women after childbirth or miscarriage, normally for the first 44 days. The foods that they are generally not allowed to eat are categorized as “cold” food, “sharp” food, “hot” food, “itchy” food, and “poison” food. Examples of “cold” foods are ice cubes, cucumber, kangkung, pumpkin, mung bean, long bean, and fruits like watermelon, and apple. They believe that eating “cold” food will cause their nerves to dilate (*urat kembang*). They do not eat pineapple, which is considered a “sharp” food that will cause them to suffer gynaecological problems. “Hot” food like chilli is also not eaten. They also do not eat foods believed to be “itchy” such as “kembung” fish, “tamban” fish, “selayang” fish, cuttlefish, prawn, and egg. Certain types of fish believed to be “poisonous” are “baung” fish, stingray, and “tongkol” fish. Nevertheless, there are differences in the food taboo practices among the women, in that some of them are more strict than others in observing the food taboo.

All of them practise the drinking of a mixture of water that is boiled with certain tree roots (including “medang lawang” and “remboyan” roots), garlic and black pepper. Some just drink the boiled tree roots without adding garlic and black pepper. It is believed to make their abdomen shrink back to normal, as well as to shrink the dilated nerves in the body, and to warm their bodies.

Cultural Practices

The cultural practices that are normally practised by the women after childbirth are “berserum”, “bertungku” and “berdiang”. These three cultural practices are usually practiced in the above order for 44 days after childbirth.

“Berserum” is a practice where the woman takes a hot bath called “air pemulih” in the morning. The water contains stalks and leaves, such as “daun tepos kandang”, “daun mesirah” and “daun bunglai”, which are pounded and then boiled. The bath is believed to constrict the nerves in the body and to increase the breastmilk.

The practice of “bertungku” is where the woman will first place certain leaves, or stone near the fire. Following that she will wrap it with a piece of cloth and place it on her stomach. This is to flatten the stomach, and to ensure that the blood will flow out from the womb thus preventing the blood from clotting inside the womb. “Berdiang” on the other hand is a practice where the woman will sit by the fire to warm her body.

CONCLUSION

This study shows that, except for vitamin C, the mean intakes of calorie and nutrients for the women are generally not satisfactory. The intake of vitamin C is high because of their frequent intake of raw vegetables and fruits. The poor nutrient intake levels is due to the low food consumption, and the limited varieties of food sources to

choose from. It is clear that these women face problems regarding the accessibility and availability of food. Convenient public transport, even though available every half an hour, is of no help because there is no one to look after the children. As a result, they mainly depend on the food vendor, and plant their own vegetables. Cultivation, however, is difficult due to the infertile land and overgrown weeds.

The poor nutrient intake and limited dietary diversity have resulted in about one-third of the women suffering from chronic energy deficiency. Their iron intake is rather worrying since it is just about 25% of the required level. Insufficient nutrient intake among the single and non-pregnant married women could increase their risk of giving birth to low birth weight babies in the future (Amal Nasir Mustafa, 1994). The condition is worse for some since they have to do household chores, manage the family, and go to work at the same time, the burden of the 'double day' (Lukmanji, 1992).

All the women rely on the government hospital and clinics for their antenatal check-ups and delivery. Their acceptance of modern medicine and treatment means that they did not contemplate going to a traditional healer or "bidan"⁴. Consistent antenatal check-ups at the government clinics or hospital, and delivery in the hospital among the women may probably be the reason for the small number of miscarriages and stillbirths among them. Nevertheless, they do face problems such as the inconsistent fee charged by the Kuantan General Hospital for delivery in the hospital, nonavailability of facilities like the ultrasound machine at

the government clinics, and unavailable or non-functioning public telephones near the village, which can delay the assistance of proper medical care or treatment for women with pregnancy or labour difficulties.

Out of the nine women who experience menstrual pain and the five women who have vaginal discharge problem, only two sought medical help. Many of them regard this type of problem as minor, and something that does not warrant seeking medical treatment.

Food taboos and cultural practices are still widely practised by the women who have just delivered. Food taboos may deprive the women of eating vegetables and fruits, which can cause them to have mineral and vitamin deficiency (Chen, 1973) since they are not allowed to eat these types of food for up to 44 days. The impact on lactating mothers may be worse. During this time they would have also stopped taking the vitamin supplements given to them during their pregnancies.

Overall, the dietary status of the women needs to be improved to enable them and their daughters to break away from the cycle of undernutrition due to poor intake of food. Nevertheless, the nutritional needs and reproductive health of the

⁴ In the two villages, there was only one woman who is a *bidan*, but she no longer practises because she herself feels that it is better for the women to deliver at the government hospital (from conversation with the *bidan*)

women should not be justified by the aspect of their maternity only, but also by their total well-being and health (Sai & Nassim, 1989). For the married Orang Asli women who work outside their homes, the double day routine will also take its toll. The extent to which their health will be affected will depend on the preventive steps that have already been taken by them in strengthening their nutritional status during their younger years. In this the responsibility also lies with the various authorities that are involved in the planning and implementation of the programmes and policies that are related to this group of women.

RECOMMENDATIONS

Finally, several recommendations are presented in this section. These recommendations follow from a consideration of the factors that have been identified as having influenced the nutritional status and reproductive health of this particular group of Orang Asli women.

Public amenities

The two communities in this study are still deprived of basic facilities such as piped water supply, sanitary toilets, and telephone services. The availability of piped water supply is important to reduce the workload of the Orang Asli women.

Since both of the villages are not located near the river, the absence of toilet facilities in most of the households should be taken seriously. Proper pour-flush toilets can reduce the risk of the villagers being

infected with sickness or disease due to contaminated well water and unhygienic ways of disposing excrement.

The villagers would like to have a public telephone in the village. The presence of a telephone may be crucial in cases of medical emergencies; for example, a pregnant woman who has pregnancy complications or who is about to deliver.

The method of rubbish disposal used in the villages, that is by burning is not environmentally friendly. The rubbish that is heaped at the backyard of their house are dragged everywhere by domestic animals and can be rather unhygienic. It is hoped that the municipal council will look into this matter and come up with a suitable solution such as providing rubbish disposal services.

There is still land in KSS that used to be a banana plantation but it is now overgrown with weeds. It is hoped that the agricultural officer from the Department of Orang Asli Affairs will be able to identify proper food crops that can be planted. It can be made into an income-generating project for the villagers.

Research regarding the seasonal effects of the monsoon season in the east coast of Peninsular Malaysia on the nutrient intake of the women should be carried out.

Nutritional Education

Nutritional education for the Orang Asli women needs to be implemented in view of their poor

nutritional status, with nearly one-third suffering from CED. It is hoped that nutrition educators can suggest alternative nutritious food that is available around the villages. The women need to be educated regarding dietary diversity to ensure that they get sufficient nutrients. Since three women are categorized as being overweight or obese, they need to be educated also about the dangers of over-consumption of foods high in fat. This awareness can prevent women with normal BMI from becoming overweight or obese in the future when foods are more available and accessible, or when they are better off economically.

Reproductive Health and Utilization of Health Care Services

The studies of reproductive history and health, and utilization of maternal health care services among the Orang Asli women in Malaysia are still limited and not specific enough. Besides that, the use of family planning methods is still not fully accepted by the women because of the experiences of bad side-effects and objections from their spouses. The ability to control and space births is an important factor for women's health. It is hoped that the health educators will be able to clear up the myths and provide the women with alternative ways to plan their families.

Women's Role

Future research is also needed to study the changes in the roles of women, the changing nature of the "producer" role as well as the "reproducer" role. The changes in women's role in accordance with

the country's development have a great impact on their nutritional status, reproductive health, and their overall well-being. Since the Orang Asli are among the poorest in Malaysia, focus should be placed on them so that they can be on par with their counterparts of other ethnic groups.

Cultural Practices

The food taboos are religiously followed by the women with the general aim of preventing sickness in the future. It is important for the authorities to understand the food taboos and cultural practices of the women. This will enable nutrition educators to suggest alternative types of food for their consumption in situations when the women restrain from taking certain foods after childbirth or miscarriage.

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