

SECTION V.

RESULTS OF THE MIDTERM SURVEY

HEALTH SECTION

1 EDUCATION AND REARING PRACTICES

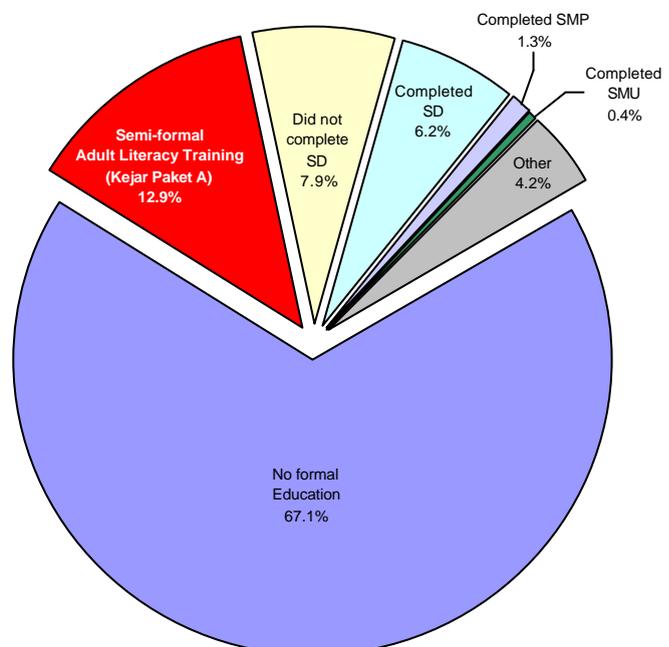
1.1 WOMEN'S EDUCATION STATUS

The mid-term survey results highlight that most women in the target area had limited access to formal education. Of the survey respondents 67.1% said they had received no formal education, 12.9% said that they had undertaken Kejar Paket A, a local adult literacy / bridging education course (see explanation below). Over half of the 13.1% respondents who claimed primary school was their highest level of formal education had dropped out before completing the entire six-year course. In terms of secondary education a mere 1.3% of respondents had graduated from junior high school and only 0.4% (SMP) had graduated from senior high school (SMA / SMU). The final 4.2% of respondents claimed to have had some other form of formal or semi-formal education including vocational, theosophical / religious, health or literacy training in under a variety of government, missionary or other programs or institutions.

Aside from the locally run Kejar Paket A adult literacy training (described below) less than 20% of women had ever undertaken study through the formal school system and even amongst these the drop out rate (around 40%), was very high. This situation is considered to be a serious concern because a strong correlation is believed to exist between the educational status of a woman and the quality of her health. The specific reasons why most women do not participate in formal education or drop out part way through are not apparent from the results of the questionnaire. Some possibilities for this situation are listed below:

Some factors are likely to affect both men and women:

FIGURE 81.
WOMEN'S EDUCATION STATUS IN KANGGIME & KEMBU / MAMIT SUB-DISTRICTS



- Highly dispersed population patterns make it extremely difficult and time consuming for many people to attend schools which are centrally located in the *Desa*;
- Many students may become bored or disenchanted with education since that the quality of education in remote areas is generally very low. Teachers are often absent from their posts and they lack of training and curricula support and this makes it difficult to provide an adequate level of education or to run interesting educational activities.
- Despite being heavily subsidised by the government, the cost of education is still beyond the means of most people in the target area who have virtually no access to cash income generating opportunities.
- Lack of employment opportunities for graduates may prevent seeking an education.

Other factors are more gender specific:

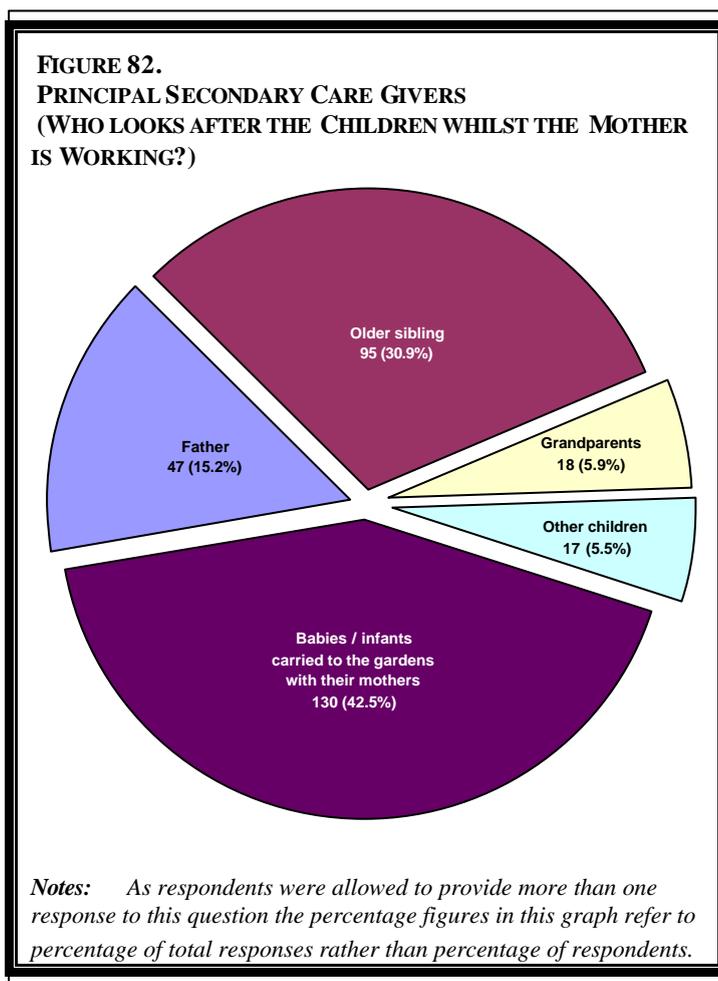
- For most Lani women marriage presents a considerable obstacle to prolonged participation in formal education.
- It is feared that women will have greater opportunity to become involved in sexual relations with men from distant regions (and possibly marry into the wrong clan) or lacking her community's protection, a woman will be vulnerable to sexual attack.
- As the main producers in Lani communities, women's involvement in formal education and employment would constitute a considerable drain upon the traditional labour pool than would men's involvement in formal education and employment.

To reduce the high level of illiteracy amongst adult women, the local church has been conducting an adult literacy or bridging education course known as the *Kejar Paket A*. Run by a local preacher and with assistance from several literate local women this course uses texts written in the Lani language. The idea is for students to read first in their own language rather than learning both the Latin alphabet and the Indonesian language simultaneously³³. It is hoped that this literacy program can be continued and even expanded so as to provide literacy training not only for adult women but also for other adults and youths who have not been able to undertake more formal education.

33 The approach of using vernacular languages to assist with basic literacy and numeracy education has been conducted quite successfully through the Village Tok Ples Schools (VTPS) in Papua New Guinea. These VTPS were first trialled in North Solomons Province (Bougainville) in the early 1980s and were shortly thereafter integrated into the national education system offering village children grade one to three level education in the local vernacular (tok ples). Whilst this approach has proven to be a highly effective means of raising rural literacy and numeracy rates (cf. Delpit in press, Fasold 1984, Koze lka 1984, Litteral 1984, Litteral 1986, Litteral 1999, Malone 1987) the costs associated with running the VTPS system have been comparatively high (see Kozelka, 1984; Fasold, 1984) for further discussion regarding the cost efficiency of vernacular based education) and consequently, since 1998 the Government of PNG began reincorporating the VTPS schools into the mainstream elementary school system which uses Tok Pisin as the medium of instruction.

1.2 CHILD REARING PRACTICES

Lani women are required to work very hard. They are the backbone of the family and they are responsible for most of the households' daily requirements. Such requirements include caring for babies and infants, maintaining gardens, tending to livestock, marketing garden produce and heavy carrying work. Their work often requires them to travel long distances and spend considerable amounts of time away from their homes, particularly when they're required to work in distant gardens or sell produce in sub-district or district level markets. Such heavy workloads and long absences from home impinge upon their ability to pay adequate attention to raising babies and infants, particularly in cases where women do not receive adequate support from other relatives or affines.



To determine the principal care giver (after the mother herself) survey respondents were asked who would be most likely to be entrusted with the care of young children whilst the mother was working. Responses to this question showed that nearly half of the women were likely to take the child with them to their gardens (130 respondents / 47.6% of respondents or 42.4% of responses). The next most common response was that an older sibling³⁴ would be asked to take care of the child (95 respondents / 34.8% of respondents or 30.9% of responses). Only 47 respondents (17.2% of respondents or 15.3% of responses) said that the father was likely to care for the child in the mothers' absence. 18 respondents (6.6% of respondents or 5.9% of responses) stated that one or more of the child's grandparents would look after the child. Lastly, 17 respondents (6.2%) said their other children, close relatives or neighbours /

cohabitants would look after the child.

34 Regrading the social relationships and the significance of the affinial bond between brother and sister in most Highland Melanesian societies refer to (Howell, 1990)

2. BREASTFEEDING PRACTICES

Breastfeeding is a natural, healthy and affordable way for women to feed their children. Unlike some other parts of the world, in Jayawijaya, breastfeeding remains a ubiquitous part of daily life and is often continued until an infant has reached a quite advanced stage of physical and social development. However, some problems related to breastfeeding practices have been observed amongst Highland Papuan communities.

Most notably, colostrum, the fluid secreted by human mammary glands during the first few days after childbirth is not understood according to biomedical paradigms and it is even considered taboo by local peoples. This means that an extremely important source of essential nutrients and pathogenic antibodies is often wasted or underutilised. Not feeding colostrum to a baby in the first few days can lead a baby to suffer mild malnutrition, immune system weaknesses and possibly other developmental problems.

Questions worth investigating here include the frequency of breastfeeding, how long infants continue to be breastfed and how they are weaned. The question of weaning is of particular interest as a high rate of mild to moderate chronic malnutrition has also been observed amongst infants between 6 – 36 months old in many Highland Papuan communities³⁵. Calorie deficiency has been attributed to the transition from a diet of breast milk to sweet potatoes as the high bulk to calorie ratio of sweet potatoes prevents infants from consuming adequate calories.

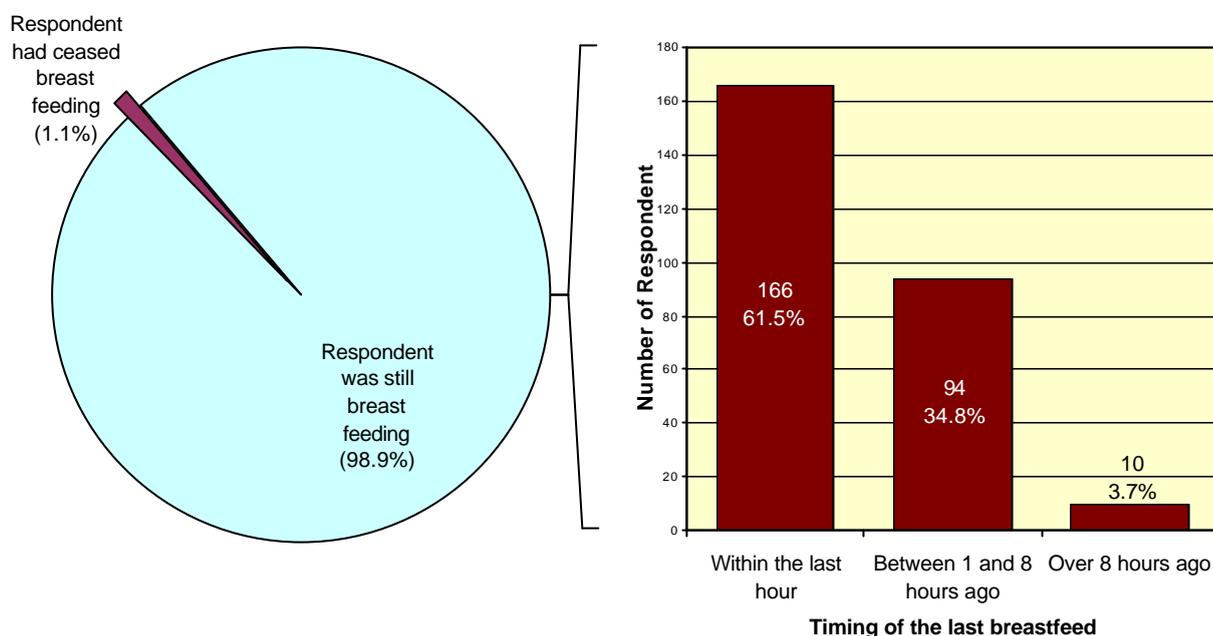
2.1 LENGTH AND FREQUENCY OF BREASTFEEDING

Lani women normally breastfeed their children until they are at least two or three years old. By highland Papuan standards, Lani children appear to be weaned at a relatively young age, especially when compared to groups like the Grand Valley Dani who are reported to continue breastfeeding for up to five or six years³⁶. As can be seen from the data displayed in Figure 83, of the 273 survey respondents (all of whom were mothers with children under the age of two years) 270 (or 98.9%) were still breastfeeding their children at the time that the survey was conducted whilst 3 (1.1%) had already stopped.

35 Whilst what has been termed mild to moderate malnutrition has been observed in many Highland Papuan communities (cf. Bailey, 1963, 1964; Ferro-Luzzi, 1975; Harvey, 1983; Malcolm, 1970, 1974, 1975; McKay, 1960; Oomen, 1961, 1971; Oomen & Malcolm 1958; Scragg, 1955; Shaw, 1986; Sinnett, 1972; & Wyatt, 1978), its significance and the extent to which it impacts upon the wellbeing and development of individuals and populations is still a matter of debate in some academic circles (cf. Beaton, 1989; Cassidy, 1982; Messer, 1989; Peltó & Peltó, 1989; Seckler, 1977, 1982; & van Eeuwijk, 1992).

36 According to the anthropologist Karl Heider (Heider, 1970, 1976, 1992) Dani women living in the Grand Baliem Valley area maintain a very prolonged post-partum taboo of up to six years during which they abstain from sexual relations and continue to breastfeed their children. The apparent contrast between Dani and Lani in child spacing and breastfeeding patterns have further been related to social and environmental stress which encourages higher birth rates amongst the Lani (see Heider, 1975; Ploeg, 1989; O'Brien, 1973; de Vries, 1988). However, other authors have called into question the validity of Heider's original claims regarding the actual length of and adherence to the post-partum taboo (cf. Butt, 1998: 92; Pavert, 1986; and Lokobal, 1997).

FIGURE 83.
RESPONDENTS' PERSISTENCE WITH BREASTFEEDING
AND TIME ELAPSED SINCE THEY LAST BREASTFED THEIR CHILDREN.



When questioned regarding how long it had been since they last breastfed their child, 166 (or 61.5%) of the women who were still breastfeeding said that they had fed the child within the previous hour, 94 (34.2%) said that the last feed had occurred between 1 and 8 hours ago³⁷ and the remaining 10 (3.7%) replied that it had been over eight hours since they last breastfed their child.

In the 1.1% cases where mothers had already ceased breastfeeding it was due to problems experienced with the supply of milk and not to a conscious decision to wean their infants at an earlier than normal age. Similarly, the main reason why a significant proportion of women (38.5%) had not breastfed their children for over an hour was due to the fact that many respondents had traveled long distances to participate in the survey rather than a conscious decision to maintain longer spacing between feeds. However, as many Lani women are compelled to often travel long distances (to remote gardens or market places) such interruptions to regular feeding must occur quite often, unless of course they stop to feed on the way.

³⁷ Whilst the length of this time period (1 – 8 hours) is of limited use in breaking down this information, it was considered inappropriate to break the question down into shorter / more precise periods of time as it would be difficult for respondents to comprehend and thus their ability to provide adequate or open responses.

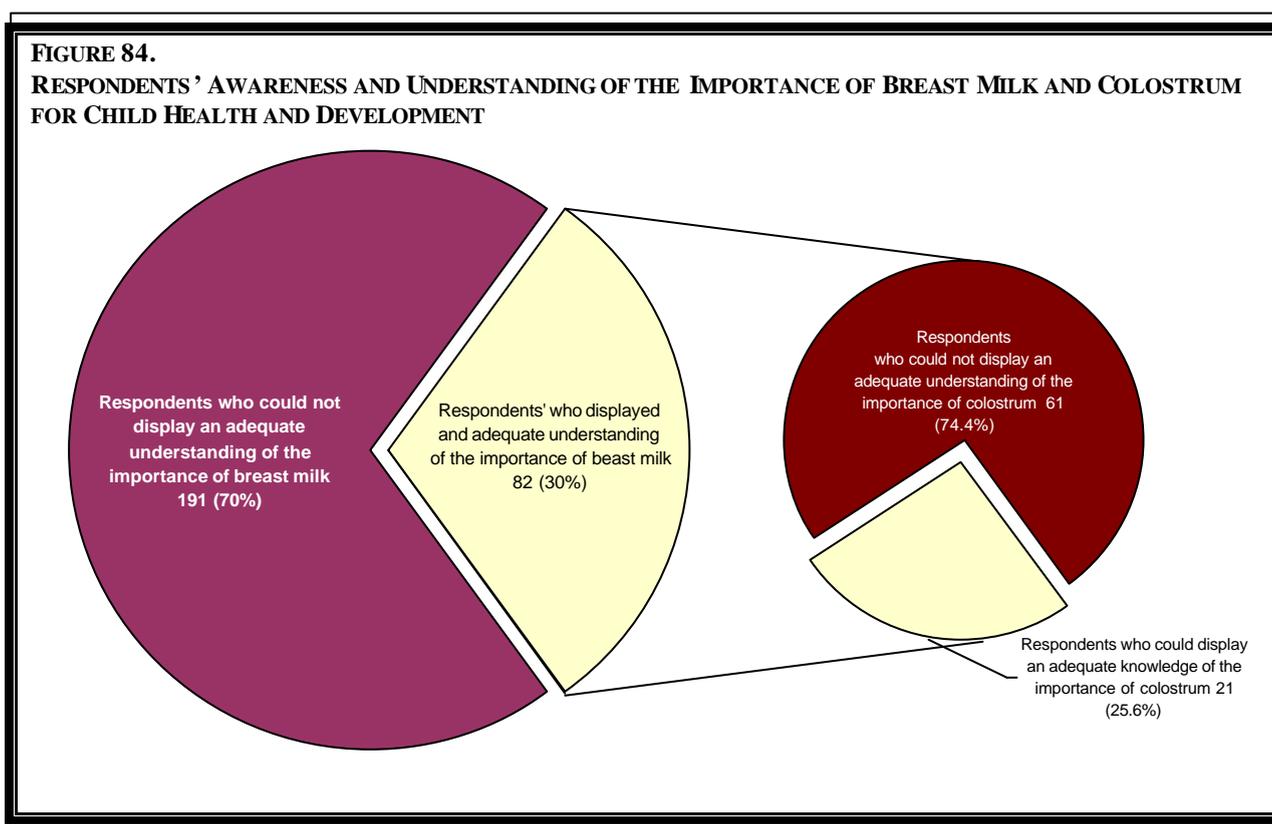
2.2 COLOSTRUM

Unfortunately, local understandings discourage women from breastfeeding their children in the first few days after childbirth. In these first few days a mother produces a substance known as colostrum. Colostrum is loaded with essential nutrients and antibodies that help prepare a newborn baby for life outside the womb. As colostrum is not milk and is slightly yellowish in colour it is often associated with other female body secretions that are considered potentially dangerous or spiritually polluting³⁸.

In her thesis on the Grand Valley Dani, the anthropologist Leslie Butt describes neonatal breastfeeding practices as follows:

“Women breastfeed babies on demand after they have seared their nipples slightly with a red-hot coal just after the birth to “clean the milk” that is in the breast. While all women described colostrum (the initial secretion of lactating women) as “dirty,” many women say they burned their nipple and immediately begin breastfeeding their babies right after birth because their milk had been “cleaned” and was ready, whereas others said they waited a day or so after the birth for the milk to come down before beginning breast-feeding.”

(Butt, 1998)



38 Regarding Melanesian concepts of gender pollution refer to (Faithorn, 1975; and Meigs, 1984).

Regarding Jayawijayan practices for the cleansing of colostrum refer to (Butt, 1998:125).

A total of 21 respondents (or 25.6% of the 82 respondents who showed an awareness of the importance of breast milk) were able to display an awareness of the importance of colostrum. Specific responses provided by these 21 mothers in response to this question included: it provides a child with vitamins; it makes a child healthy; it makes a child strong; and it provides the child with nutrients.

Of the remaining 252 respondents (92.3% of the entire sample) who did not have an understanding of the value of colostrum, many expressed the view that colostrum was dirty and that children who consumed it would become weak or sickly. Consequently, it seems likely that a significant majority of children in the target areas continue to be deprived of colostrum and this would contribute to nutritional and immune system deficiencies in young children.

In order to overcome this situation WATCH developed simple “Information Education and Communication” (IEC) materials in the Lani language to help local health workers, teachers and other community leaders to run more effective awareness campaigns to dispel local beliefs and taboos concerning colostrum.

3. AWARENESS AND UNDERSTANDING OF HEALTH ISSUES & UTILISATION OF HEALTH SERVICES

Malaria, upper respiratory tract infections (including pneumonia) and diarrhea are the most serious diseases encountered in the Kanggime and Kembu-Mamit Sub-districts. The demographic group who are most susceptible to these are babies and infants suffering from acute or chronic malnutrition. Factors identified as contributing to the poor health conditions include the target community’s limited knowledge or understanding regarding personal and environmental health and hygiene, the rugged and remote terrain, smoky houses, the extremely limited access of most community members to cash income and the poor quality of health services available in local health centres and clinics.

3.1 DIARRHEA

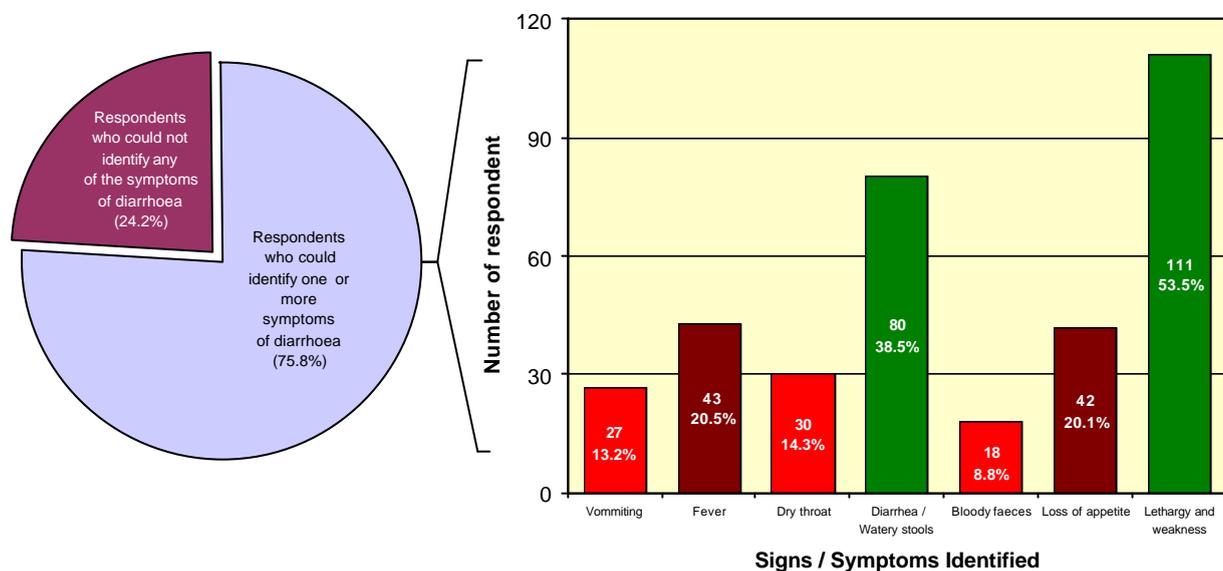
Factors identified as contributing to the high incidence of diarrhea include poor personal hygiene, consumption of contaminated drinking water and poor environmental sanitation. Some specific behaviours identified as contributing to the prevalence of diarrhea are that local people:

- Do not have any form of latrines (although they do maintain taboos on defecating in certain areas);
- Do not usually wash their hands before eating;
- Do not usually boil their drinking water;
- Do not usually cut their fingernails and toenails; and
- Allow their livestock, particularly pigs, to roam free and pollute waterways.

3.1.1 RESPONDENTS' AWARENESS AND UNDERSTANDING OF DIARRHEA

From the entire sample of 273 respondents a total of 66 (24.2%) could not identify any symptoms of diarrhea. The remaining 207 respondents (or 75.8%) were able to identify one or more of the symptoms of diarrhea. This data suggests that the majority of women have some awareness of diarrhea and its symptoms, however on closer examination it seems that the real level of community knowledge and understanding of diarrhea is lower.

FIGURE 85.
RESPONDENTS WHO COULD CORRECTLY IDENTIFY SPECIFIC SIGNS OR SYMPTOMS OF DIARRHEA



Notes: ? The percentages in the column graph do not relate to the entire sample of 273 respondents but only to those 207 respondents who could correctly identify at least one sign or symptom of diarrhoea.
? Some respondents identified more than one symptom of diarrhoea.

In figure 85 the most frequently cited response (provided by over 30% of the entire sample) was the lethargy or weakness was a sign of diarrhoea. Lethargy or weakness are a general sign of illness rather than a specific sign of diarrhoea. Whilst awareness of this sign might lead to increased attendance by mothers at health service posts it does not really help them to identify and take initial ameliorative action, such as providing oralites, against diarrhoea.

The most important sign of diarrhoea which, in the opinion of the DHO and WATCH Project all mothers should be aware of, is the passing of watery stools more than three times per day. A total of 80 respondents (38.5% of those respondents who could identify at least one sign of diarrhoea or 29.3% of the entire sample) were able to identify this sign.

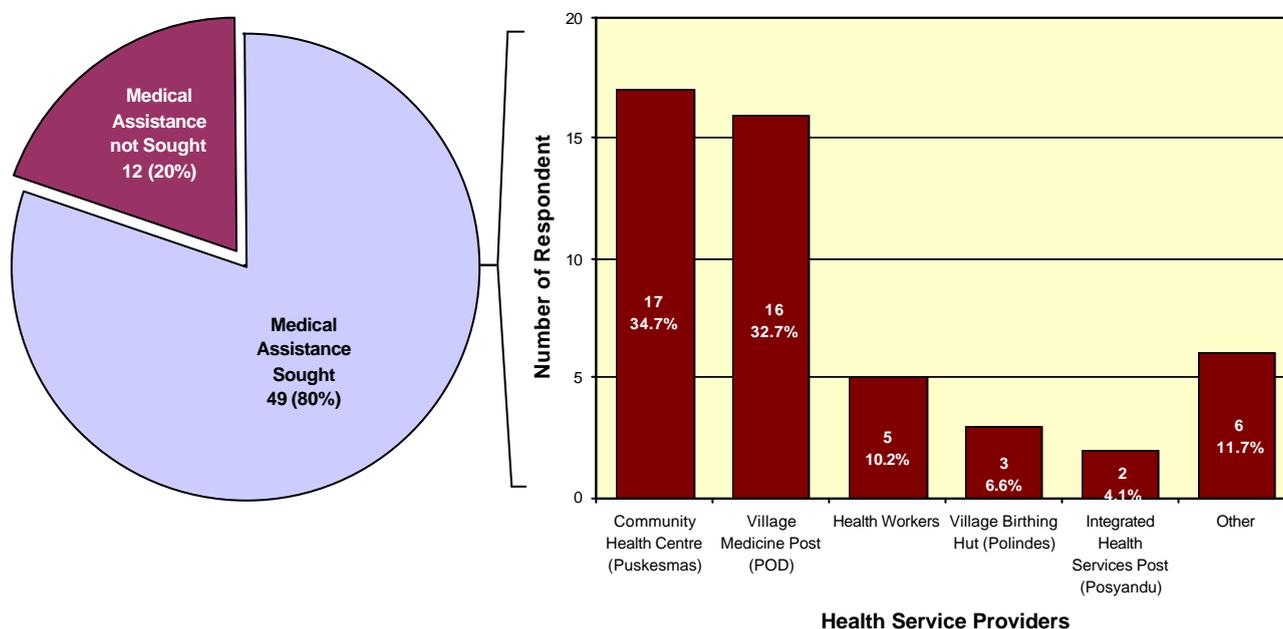
Of particular concern was that very few respondents (only 18 or 6.6% of the entire sample) mentioned bloody stools as a sign of diarrhoeal infection. As this is an important symptom of dysentery, one of the most dangerous forms of diarrhoea, such a low level of awareness may be a significant factor in the high rates of infant morbidity or mortality from dysentery.

Aside from the seven most frequently cited responses shown in figure 85, respondents also provided a range of other responses including: bodily pain, coughs and runny nose, coldness, loss of weight, rumbling stomach, stomach-ache and paleness.

3.1.2 COURSES OF ACTION BY RESPONDENTS IN CASES OF DIARRHEA

A total of 61 survey respondents said that their children had experienced the symptoms of diarrhoea during the preceding fortnight. Of these 61 women, 49 (80%) stated that they had sought medical assistance whereas 12 women (20%) stated that they had not sought medical assistance. The 49 respondents who had sought medical assistance were further asked to identify which health service providers had been approached in order to receive curative treatment services. Their responses are shown in Figure 86.

FIGURE 86.
COURSES OF ACTION TAKEN BY MOTHERS WHEN THEIR CHILDREN SHOW SIGNS OR SYMPTOMS OF DIARRHEAL INFECTION



- Notes:**
- ? Respondents were allowed to identify more than one health service provider whom they'd approached.
 - ? The percentages in the pie graph do not relate to the entire sample but only those 61 respondents who said that their children had shown signs of diarrhoea during the previous fortnight.
 - ? The percentages in the column graph are taken from the group of 49 respondents who claimed to have sought medical assistance during their child's recent illness.

From this data it is clear that when they identify the signs or symptoms of diarrhea in their babies or infants a considerable majority of women in the target areas are willing to seek assistance from medical personnel. Community health centres and village medicine posts (*POD*) are the health service providers they are most likely to approach.

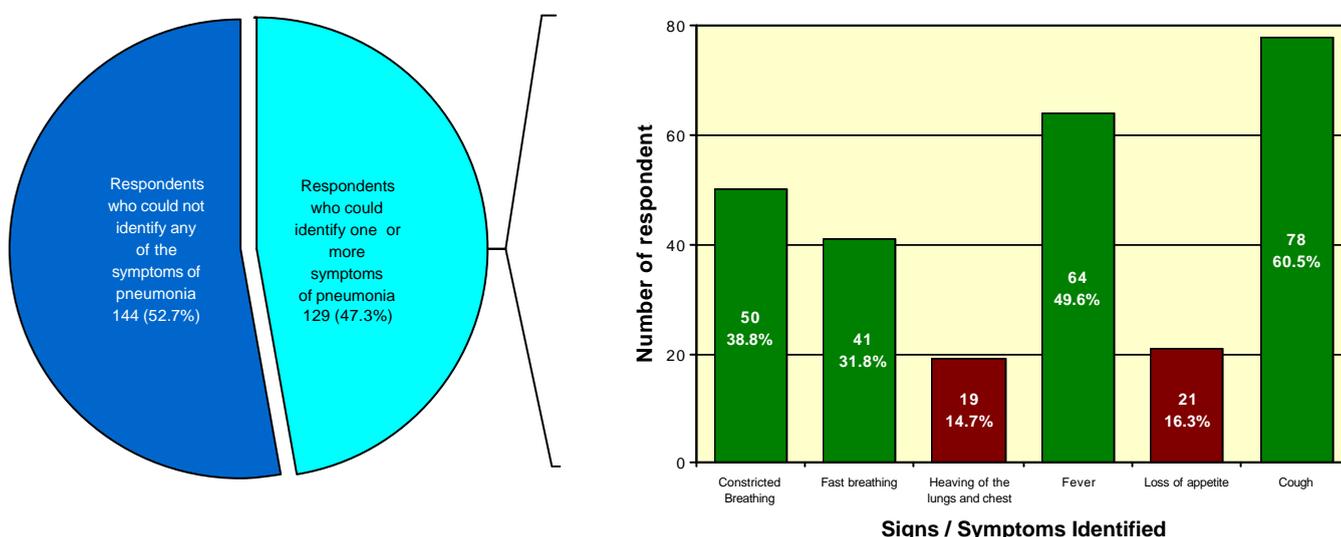
3.2 UPPER RESPIRATORY TRACT INFECTIONS

As discussed in section II / 3.1.2, the high incidence of upper respiratory tract infections, including pneumonia, has been linked to local housing which is designed to trap heat. It is believed that poor ventilation in their houses causes considerable levels of indoor air pollution.

3.2.1 COMMUNITIES AWARENESS AND UNDERSTANDING OF PNEUMONIA AND OTHER RESPIRATORY TRACT INFECTIONS

From the total sample of 273 respondents, 144 (52.7%) could not identify any symptoms of pneumonia or other respiratory tract infections. The remaining 129 respondents (or 47.3%) were able to identify one or more of the signs or symptoms of pneumonia. The main signs and symptoms identified are summarised in the following figure:

FIGURE 87.
NUMBER AND PERCENTAGE OF RESPONDENTS WHO COULD CORRECTLY IDENTIFY SPECIFIC SIGNS OR SYMPTOMS OF PNEUMONIA / RESPIRATORY INFECTIONS .

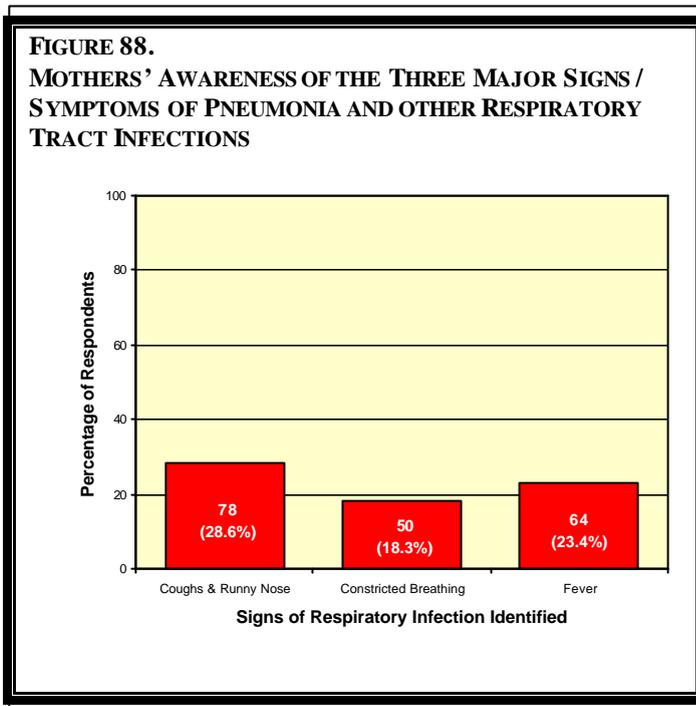


A wide variety of other responses were also provided in answer to this line of questioning. These included: lethargy or weakness, bodily pains, runny nose, sneezing, dry lips, sore chest, coldness, profuse

sweating, sore throat, whiter tongue, shivering, dry throat, muscular pains, loss of appetite and headache.

The most important signs of pneumonia, and which, in the consideration of the DHO and the WATCH Project, should be known by all mothers, are: (1) Cough and runny nose, (2) constricted breathing, and (3) Fever. Whilst the column graph in Figure 87 shows that these three symptoms of pneumonia / respiratory tract infections were the signs most commonly identified by survey respondents, if viewed as a percentage of the entire sample of 273 respondents (as is displayed in Figure 88), the data suggests that the actual level of awareness is dangerously low, at less than 30%. Those respondents who were able to identify these three symptoms claimed to have derived this knowledge from both personal observation of people suffering from pneumonia and/or through community education campaigns conducted by health workers and cadres / volunteers.

From these findings it is clear that greater emphasis must be invested into promoting awareness of the three major signs of pneumonia through the production of improved IEC materials and further promotion of health awareness campaigns. WATCH has already completed new IEC materials in the Lani language, which incorporate simple health messages for pneumonia awareness.



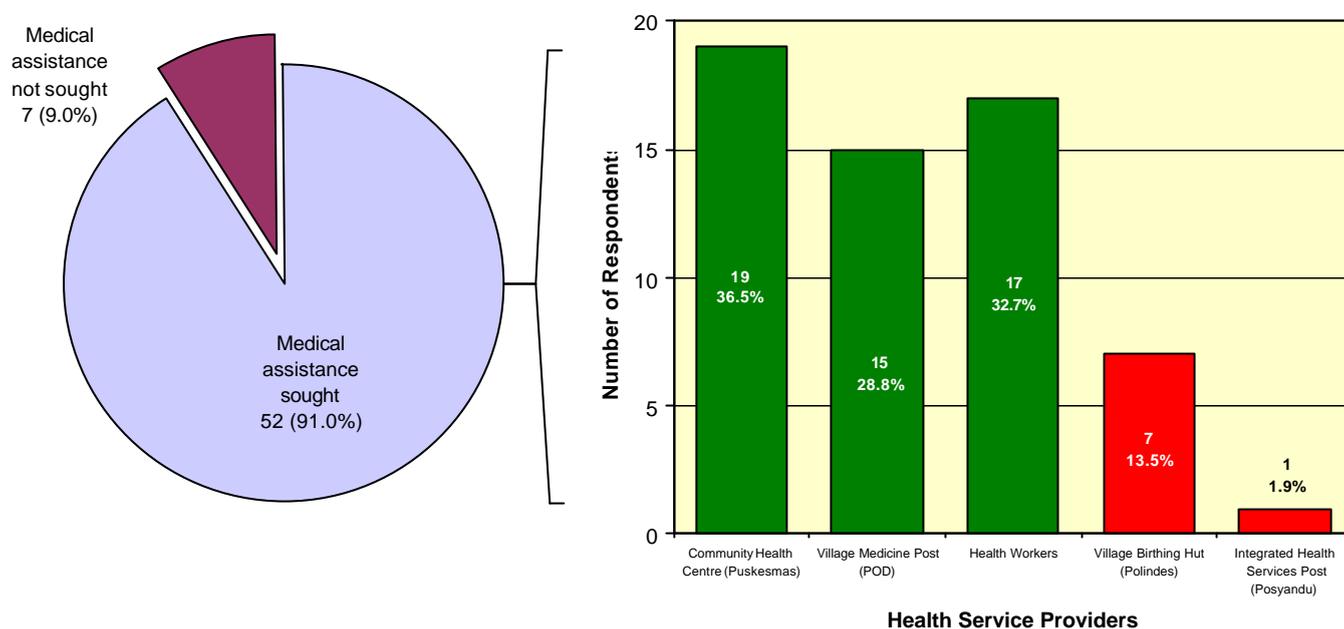
3.2.2 COURSES OF ACTION IN CASES OF PNEUMONIA AND OTHER RESPIRATORY TRACT INFECTIONS

A total of 57 survey respondents said that their children had experienced the symptoms of malaria during the preceding fortnight. Of these 57 women, 52 (91%) stated that they had sought medical assistance whereas 5 women (9%) stated that they had not sought medical assistance. The 52 respondents who had sought medical assistance were further asked to identify which health service providers had been approached in order to receive curative treatment services. Their responses are summarised in figure 89.

From the data displayed above it seems apparent that the percentage of women in the target areas who are willing to seek medical assistance if their children show signs of pneumonia or other respiratory tract infections is somewhat higher than is the case with diarrheal infections. This possibly reflects a higher degree of concern amongst mothers regarding the potential dangers of respiratory illnesses.

FIGURE 89.
COURSES OF ACTION / TREATMENT TAKEN BY MOTHERS WHEN THEIR CHILDREN SHOW SIGNS OF PNEUMONIA OR OTHER RESPIRATORY TRACT INFECTIONS

Notes: Some respondents nominated more than one place where they had sought medical assistance.



From the data displayed in Figure 89 it is clear that rather than seeking assistance from the *Posyandu* or *polindes*, respondents showed a clear preference to visit the health centres, village medicine posts (*POD*) or to directly approach health workers. As the *puskesmas* provides the best local clinical service and is open for at least part of every day it is not surprising that respondents showed preference for it. The low number of respondents who sought treatment at the *Posyandu* is also unsurprising given that the *Posyandu* is only open for a few hours each month and provides a quite limited range of clinical services to patients. It is likely that poor attendance at the *polindes* are caused by the fact that some *Desa* do not yet have *polindes* and where *polindes* have been established the midwife is not always in attendance. In the case of the *PODs*, attendance is high because nearly every church parish has already established its own *POD* and the *POD cadres*, being drawn from the local community, are much more likely to be in attendance.

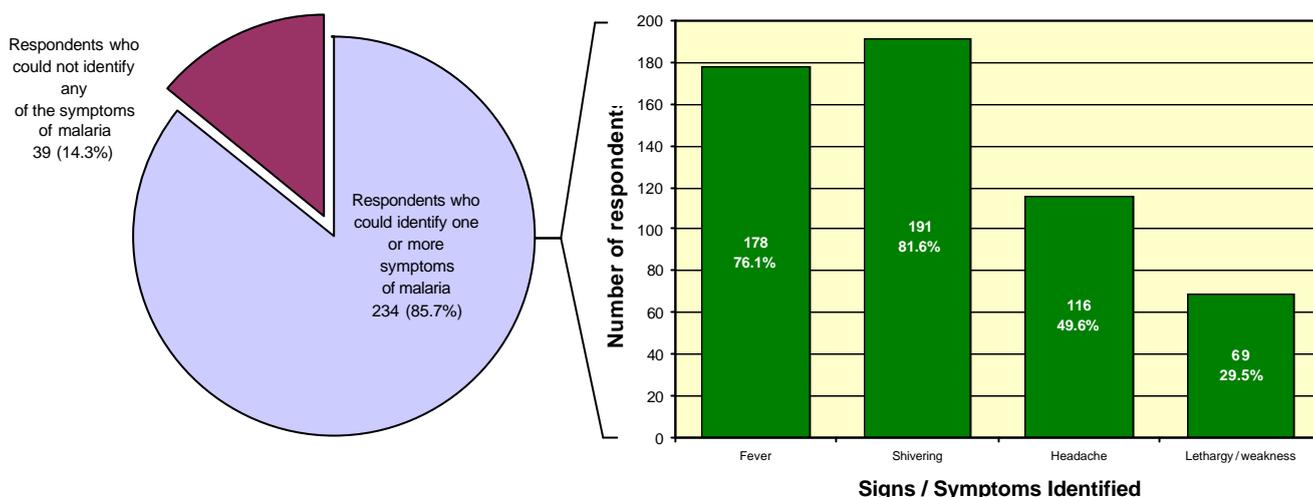
3.3 MALARIA

3.3.1 COMMUNITIES AWARENESS AND UNDERSTANDING OF MALARIA

From 273 respondents a total of 234 (85.7 %) were able to identify at least one of the signs or symptoms of malaria whereas 39 (14.3%) could not identify any of the signs or symptoms of malaria.

FIGURE 90.

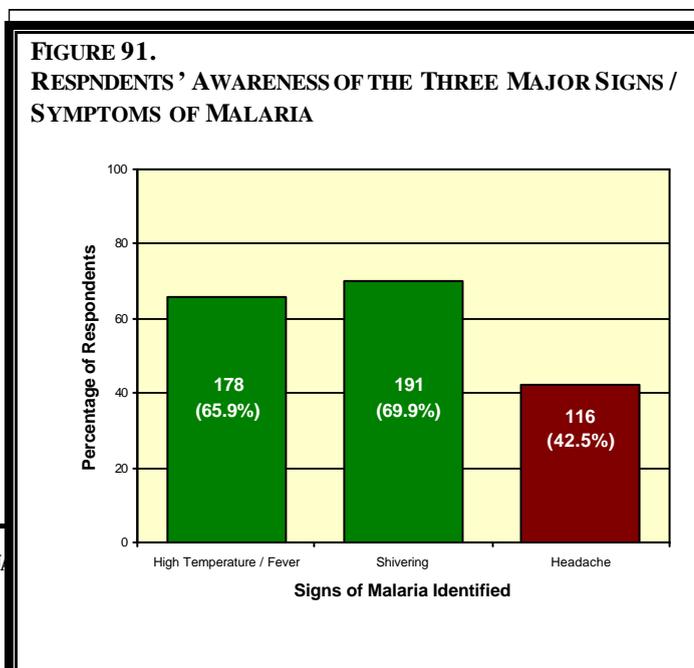
NUMBER AND PERCENTAGE OF RESPONDENTS WHO COULD CORRECTLY IDENTIFY SPECIFIC SIGNS OR SYMPTOMS OF MALARIA



Besides the four main responses shown above, a small percentage of survey respondents identified other symptoms. These included: stiffness or pain in muscles and joints, coughs and runny nose, back pain, dry lips, drop in body weight, hands and feet feel sore or swollen, coldness, pale face and sore bones.

According to the DHO and the WATCH Project, the signs of malaria that all mothers should know are: (1) high temperature / fever, (2) shivering, and (3) headache. Figure 91 shows that over 2/3 of the sample were able to identify fever and shivering as signs of malaria while just under half recognised headache as being associated with malaria. This is a significantly better result than was obtained for the respondents awareness of the three major signs of pneumonia. Less than 1/3 of respondents could identify any of the three symptoms of pneumonia (see Figure 91.). These findings suggest that either (1) malaria is an easier disease for Lani people to recognise and understand, (2) that it is of greater concern in the eyes of the community than is pneumonia, or (3) that malaria education campaigns have been more effective than pneumonia / respiratory tract infection awareness campaigns. Unfortunately, questions in this survey have produced data that tells us little regarding the degree to which these three factors have brought about the good level of awareness of malaria symptoms.

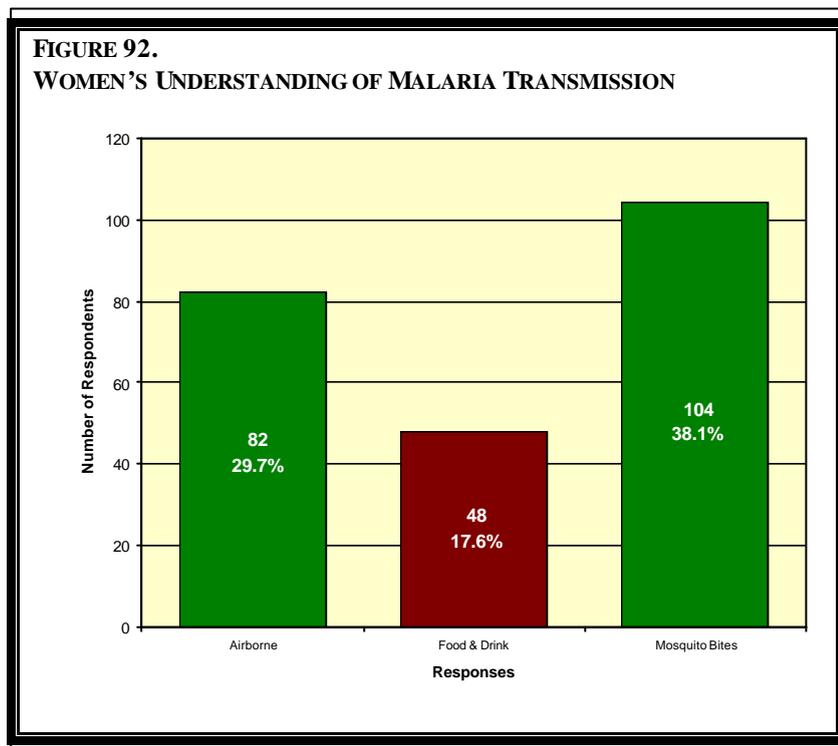
Whilst these results still fall short of



the 100% coverage targeted by the DHO and the project, it is probably fair to conclude that in almost all cases where a child falls ill with malaria in Kanggime and Kembu-Mamit Sub-districts, someone in their immediate community will be able to identify that the child has malaria.

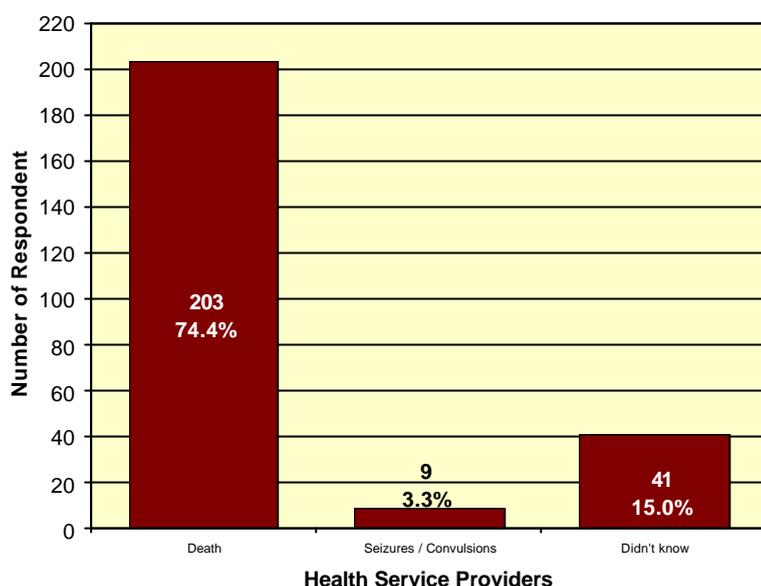
3.3.2 MOTHER'S AWARENESS AND UNDERSTANDING OF MALARIA TRANSMISSION

When questioned regarding the means by which malaria is transmitted, only 104 respondents (or 38.1% of the entire sample) identified mosquitoes as being the vector. Other responses included that malaria could be transmitted through air (82 respondents or 29.7%), food and drink (48 respondents or 17.6%), through clothes that were not washed properly or through sitting or sleeping where an infected person had recently been. According to many of the women interviewed, children and other family members should not eat or drink from the utensils used by people who were ill with malaria.



3.3.3 WOMEN'S AWARENESS OF THE RISKS ASSOCIATED WITH MALARIA

FIGURE 93.
RESPONDENTS' AWARENESS OF THE RISKS RELATED TO MALARIA



Notes: Respondents could give more than one reply to this question
Only the most frequent responses are included in this graph.

It is considered important that all mothers have an awareness of the risks associated with malaria. Awareness is likely to encourage mothers to seek medical assistance for their children at an earlier stage of illness. Figure 93 highlights how almost ¾ of the respondents were aware that malaria could cause death. Only a very small percentage (3.3%) showed an awareness that malaria could cause seizures and 15% said that they did not know the effects of malaria. Respondent's knowledge about the possible effects of malaria went beyond the survey categories. A small percentage of respondents were able to identify a variety of other effects including: paleness or yellowing of the skin, weight loss, swollen spleen, dizziness and

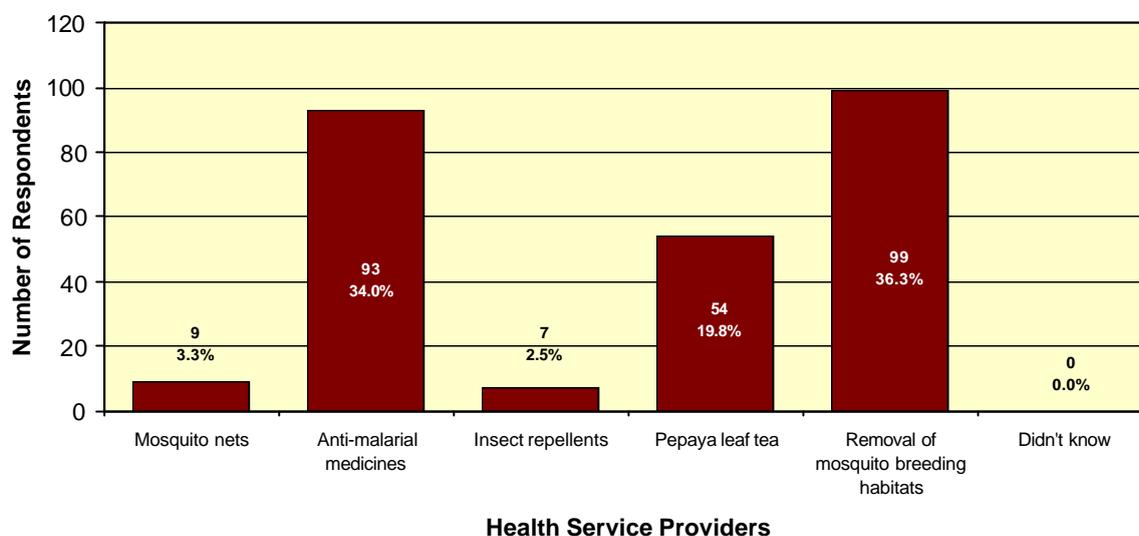
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3.3.4 MOTHERS' AWARENESS AND UNDERSTANDING OF MALARIA PREVENTION

It is important that all mothers have an understanding about how to prevent malaria. Prevention is considered the most effective way to control this disease in malaria endemic areas. To this end WATCH has implemented a malaria prevention program in Kanggime and Kembu-Mamit Sub-districts using mosquito nets in an attempt to reduce the transmission of the disease. Unfortunately, the results of this program were quite poor, principally because the nature of Lani architecture and social behaviours do not facilitate the use of bed nets.

Some local people know that their environment holds resources to combat malaria. For example, pawpaw leaf teas have recently come into use as an anti-malarial treatment whilst a number of other endemic plant species, such as the milkwood tree (*Alstonia scholaris*) and the yellow vine (*Berberidaceae sp.*) have long been employed as anti-malarials.

FIGURE 94.
FORMS OF MALARIA PREVENTION IDENTIFIED BY RESPONDENTS



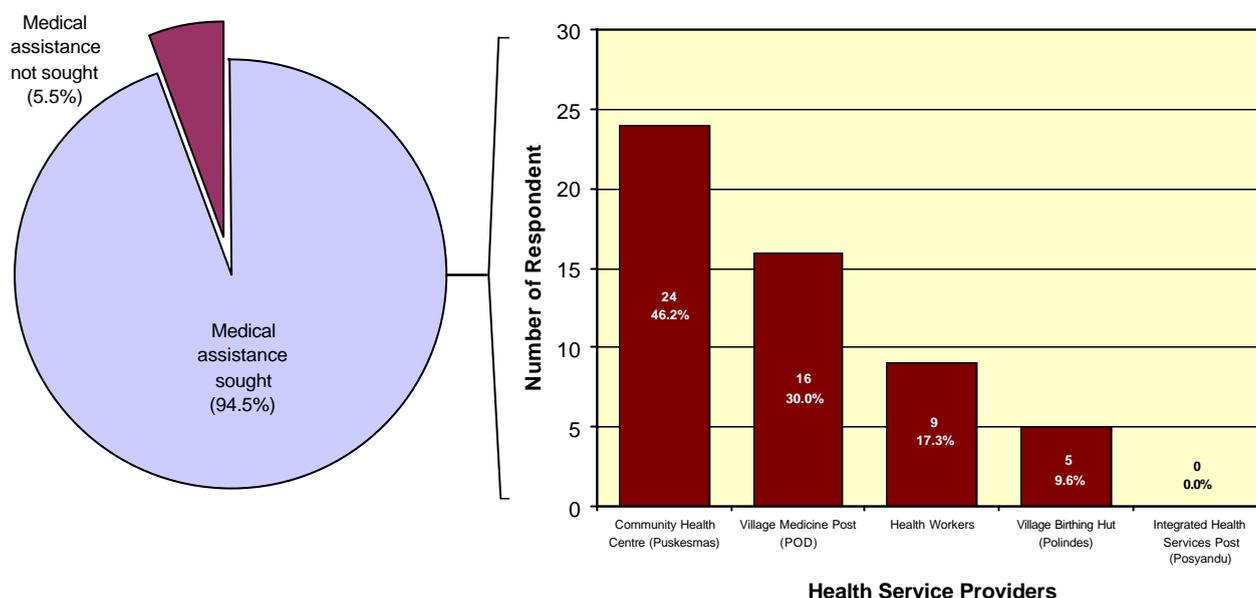
*Notes: Respondents could give more than one reply to this question
 Only the most frequent responses are included in this graph.*

Figure 94 shows us that the most commonly known form of malaria prevention was pharmaceutical prophylaxis. Most likely this was because respondents have had direct experience with this kind of prevention as village midwives provide chloroquine tablets to pregnant women for prophylaxis. Unfortunately, this form of prevention is not sustainable on a long-term basis since long-term exposure to malaria prophylactics can lead to health problems resistance in the malaria pathogens. Two other major responses to this question were the use of pawpaw leaf teas (19.8%) and the removal of mosquito breeding habitats from around the home (36.3%). Obviously, further work is needed to raise awareness about malaria prevention.

3.3.5 COURSES OF ACTION TAKEN IN THE CASE OF MALARIA

A total of 55 survey respondents said that their children had experienced the symptoms of malaria during the preceding fortnight. Of these 55 women, 52 (94.5%) stated that they had sought medical assistance whereas 3 women (5.5%) stated that they had not sought medical assistance. The 52 respondents who had sought medical assistance were asked to identify which health service providers they had approached. Their responses are shown in the following graphs.

FIGURE 95.
COURSES OF ACTION / TREATMENT TAKEN BY MOTHERS WHEN THEIR CHILDREN SHOW SIGNS OF MALARIA



Notes: Some respondents nominated more than one place where they had sought medical assistance.

Figure 95 suggests people prefer to seek treatment at the community health centres. This perhaps reflects a community perception that malaria is a more dangerous disease than either diarrhea or pneumonia. If this is the case than this perception does not reflect statistical realities as in Jayawijaya malaria is not actually a more significant killer than either diarrhea or pneumonia. In fact malaria is officially rated the number three most deadly disease after pneumonia and diarrhea respectively. Whilst the rate of malaria infection in the target area, especially in the lower altitude areas of Kembu-Mamit Sub-district, is higher than for Jayawijaya as a whole, it remains interesting that the community should consider it to be a greater concern than the two other major causes of infant mortality.

4. IMMUNISATION AND CHILD GROWTH MONITORING

4.1 KMS CARDS AND IMMUNISATION COVERAGE

The child immunisation program is conducted through the integrated services posts (*Posyandu*) by community health centre (*puskesmas*) staff with assistance from *Posyandu cadres*. The program aims to immunise all children with five different vaccines that protect against seven diseases. These are: the Bacillus Calmetted-Guerin (BCG) vaccine for Tuberculosis; the DPT vaccine, which provides protection against diphtheria, pertusis and tetanus; the polio vaccine; the measles vaccine and; the Hib (Haemophilus influenzae type b) vaccine for Hepatitis B. Full immunisation with these vaccines requires that children receive a total of

twelve doses during the first 11 – 12 months of their lives according to the timetable already shown in Table 17.

As the measles vaccine contains a small dose of freeze dried but living measles virus, it is important that children under the age of 11 months are not given this vaccine as it may actually cause significant health risks whilst the infants immune system is still too immature to handle it. Other issues affecting the immunisation campaigns at the village levels include problems with the supply of vaccines, breakdowns or gaps in the cold chain, the lack of skills / experience amongst the health workers who conduct the campaigns, poor understanding as to the importance of immunisation coverage and a lack of supervision by the DHS & DHO.

Another major women and children's health program conducted through the integrated health services posts (*Posyandu*) is the child growth-monitoring program. A five-step service procedure is followed by staff to monitor infant and maternal health activities. The first step is registration, the second is the weighing of children under five, the third is the filling in the growth record cards (*Kartu menuju sehat - KMS*), the fourth is individual health and nutrition education, and the fifth procedure is the provision of professional health and family planning services by the paramedical staff. It should be noted that whilst the *Posyandu* program is designed to be an innovative and effective means for providing PHC extension services, it has been reported that even in some of the more developed parts of Indonesia, most poorer members in rural communities reluctantly participate in the maternal and infant health clinics³⁹. This has been related to the fact that the child weighing/growth-monitoring activities are conducted publicly and many fear that if their children do not meet the prescribed growth norms it will reflect badly on them in the eyes of their communities. Furthermore, even when a problem has been detected human resource constraints entail that *Posyandu* staff can offer little or no support or clinical services.

In order to establish the extent of coverage being achieved by the child immunisation and growth monitoring programs run through the *Posyandu* the survey team questioned respondents regarding coverage and their awareness of the immunisation and infant health and growth monitoring programs. They further cross-checked the responses with data from the *KMS* cards of the respondents.

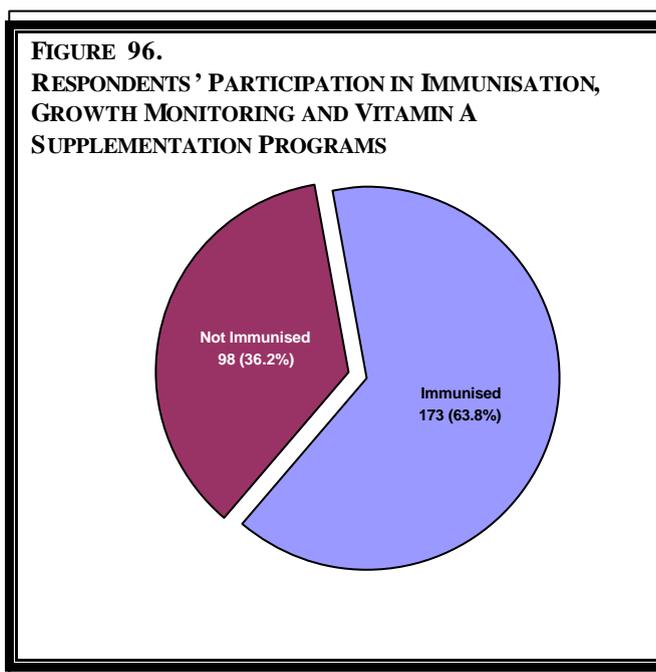
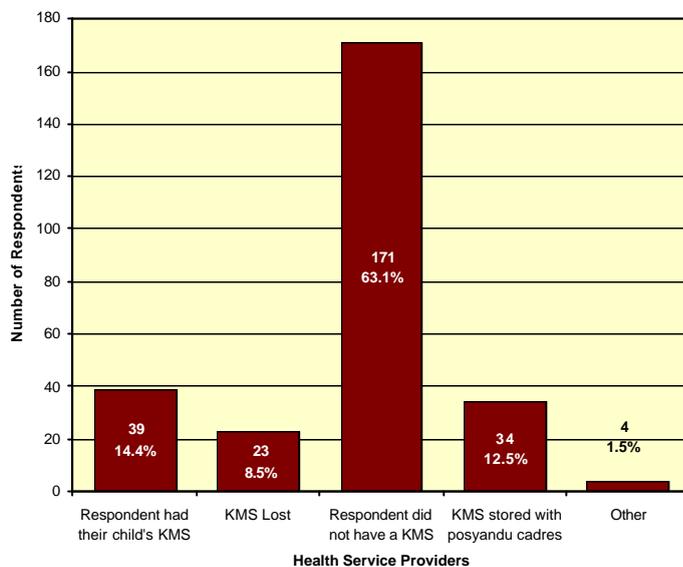


Figure 96 shows that 173 respondents (63.8%) claimed that their children had been immunised.

39 For more information on problems affecting the *posyandu* and the Indonesian health services in general refer to (Achmad, 1999).

FIGURE 97.
RESPONDENTS' RETENTION OF KMS GROWTH MONITORING CARDS



Notes: Respondents were allowed to identify more than one health service provider whom they'd approached.

Cross checking verbal responses with *KMS* record cards was difficult because very few respondents could produce a *KMS* card to the survey team. If we look at the data in Figure 97 we can see that only 39 respondents (14.4%) showed their child's *KMS* card to the survey team. A further 61 respondents (22.5%) claimed that their child had been issued with a *KMS* but it had been lost (23 respondents / 8.5%), stored with the *Posyandu* volunteers (34 respondents / 12.5%) or for other reasons (4 respondents / 1.5%). The remaining 171 respondents (63.1%) claimed they had not been issued with a

KMS for their child. As the *KMS* is an important tool in the Health Service's strategy for monitoring and reducing child malnutrition this situation is considered serious. Tracking the provision of immunisations and vitamin A supplements to children is challenged when over half of the children amongst those surveyed seem to have not been issued with a *KMS* and when a significant proportion of those who have received a card seem not to have retained them. Possible factors contributing to this problem include:

- Shortages in supply of *KMS* cards in the *Posyandus*,
- Poor levels of community participation in *Posyandu* clinics;
- Poor understanding on the part of both health workers and volunteers and the community as to the importance of the *KMS* records; and
- The nature of the highland climate, Lani architecture and the Lani way of life, which do not facilitate the safe storage of paper documents like the *KMS*.

In the process of examining the 39 *KMS* cards the survey team found a number of other problems relating to the way that *KMS* cards were being completed by *Posyandu* personnel. There were some obvious errors in at least 39 of the *KMS* cards examined such as:

- The first column on the *KMS*, which should be filled with the child's birth date, was often filled with the date of the child's first visit to the *Posyandu* or the date of the *KMS* was issued.
- Child weight records were often either filled in incorrectly or not filled in at all.

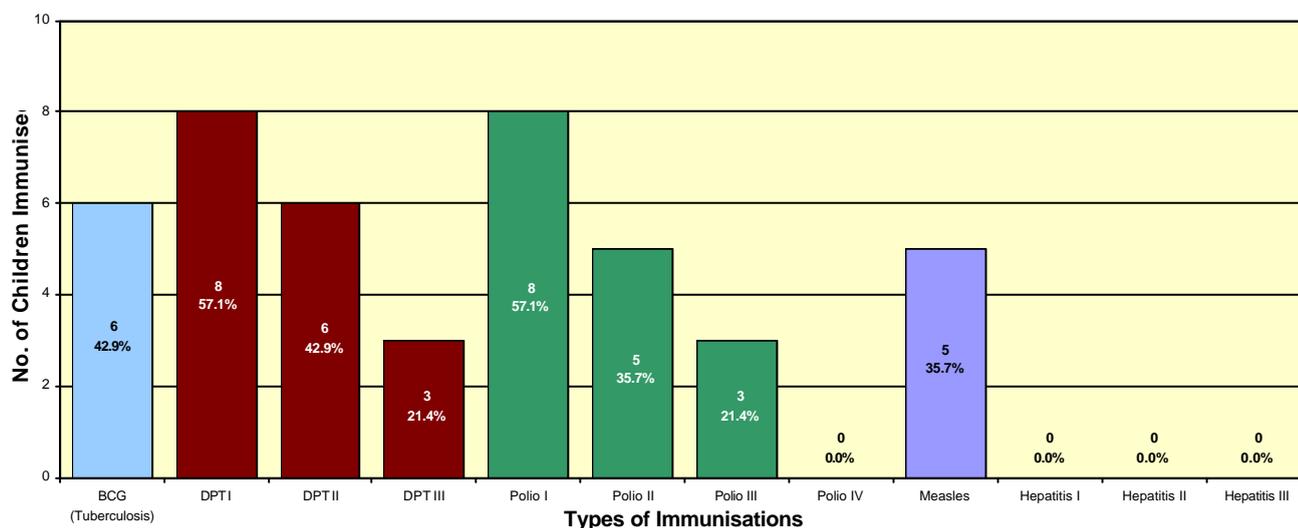
- The dates on which vitamin A supplements were issued were left blank.
- The number of months filled in on the *KMS* cards was sometimes greater than the child's age.

As a result of these problems, *KMS* cards could not provide an adequate picture of the results of *Posyandu* activities including growth monitoring, vitamin supplementation and nutritional monitoring. Even in the case of immunisation records, which tended to have less obvious errors, the reliability of the data taken from *KMS* cards must be considered low.

The problems of errors or gaps in *KMS* record cards is in turn related to the fact that most health workers and *cadres* involved in running the *Posyandu* clinics have fairly limited literacy and numeracy skills and a poor understanding as to the purpose of *KMS* record keeping. Problems with supplying *Posyandus* with cards may also have impacted upon the quality and reliability of *KMS* records. WATCH has previously assisted the DHO with distributing supplies of *KMS* cards to the village midwives but shortages are still routinely experienced at the village level.

A child should receive a total of 12 doses of five different vaccines in the first eleven months of his/her life. In order to determine the extent of immunisation coverage actually achieved for infants prior to their reaching the age of eleven months, the survey team waited in the *Posyandu* and looked at children's *KMS* cards while they were being vaccinated. The results in figure 98 are based on a small sample of 14.

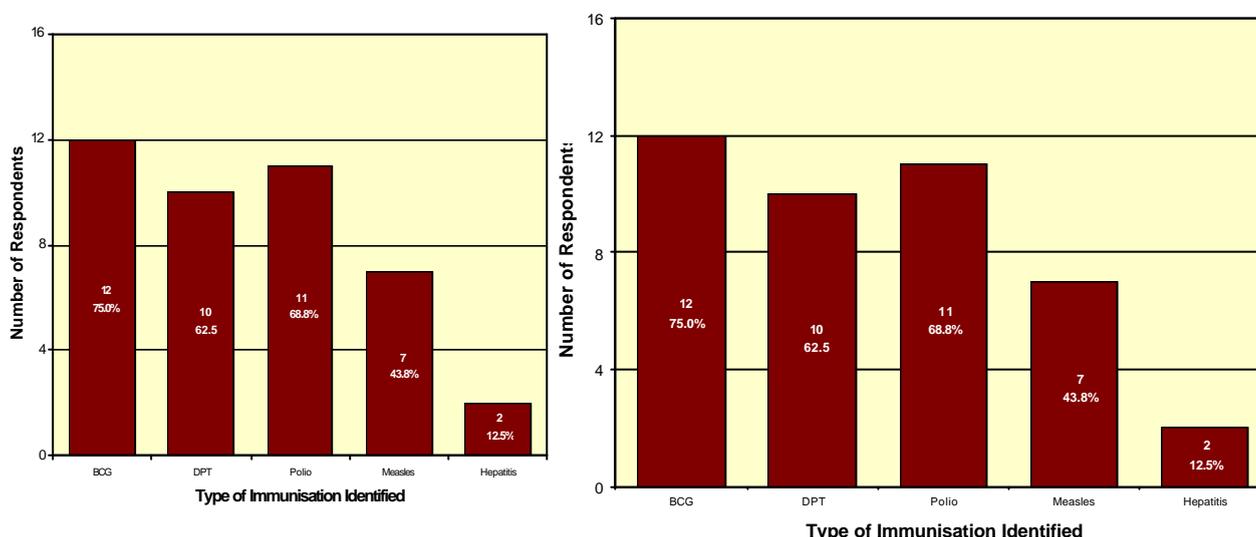
FIGURE 98.
REALISATION OF CHILD IMMUNISATION COVERAGE TARGETS
AS DETERMINED FROM INFANT GROWTH MONITORING RECORDS (KMS)



4.2 RESPONDENTS' KNOWLEDGE REGARDING THE TYPES OF IMMUNISATION

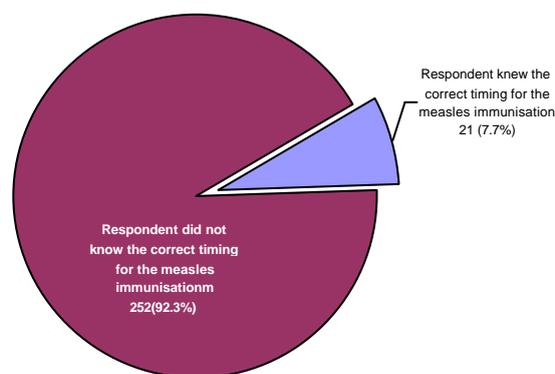
When questioned about what types of immunizations should be given to children before their first year 257 respondents (94.1 %) could not identify any vaccines used or diseases covered. This result is considered quite worrying and suggests that the vaccination awareness and education campaigns provided by health workers for the benefit of local women are not effective. Remembering that most of the women in the target areas have generally had extremely limited formal education, the DHO needs to continue to look at ways in which to simplify the materials and messages being conveyed through these campaigns, to make the materials much more locally relevant and comprehensible, including if possible by translating materials into the local language, and to improve the teaching methods and skills being applied by community health educators.

FIGURE 99.
RESPONDENT'S ABILITY TO IDENTIFY THE DIFFERENT TYPES OF IMMUNISATIONS



Of the 7 respondents who were able to identify the measles vaccine, only 3 appeared to be clear regarding the correct timing for the injection. The principle factor limiting an understanding of the timing of the measles vaccination is the non-numerate nature of traditional Lani society and ongoing innumeracy, particularly amongst Lani women. This leads to problems in communicating a

FIGURE 100.
RESPONDENTS' KNOWLEDGE OF THE TIMING OF THE MEASLES IMMUNISATION

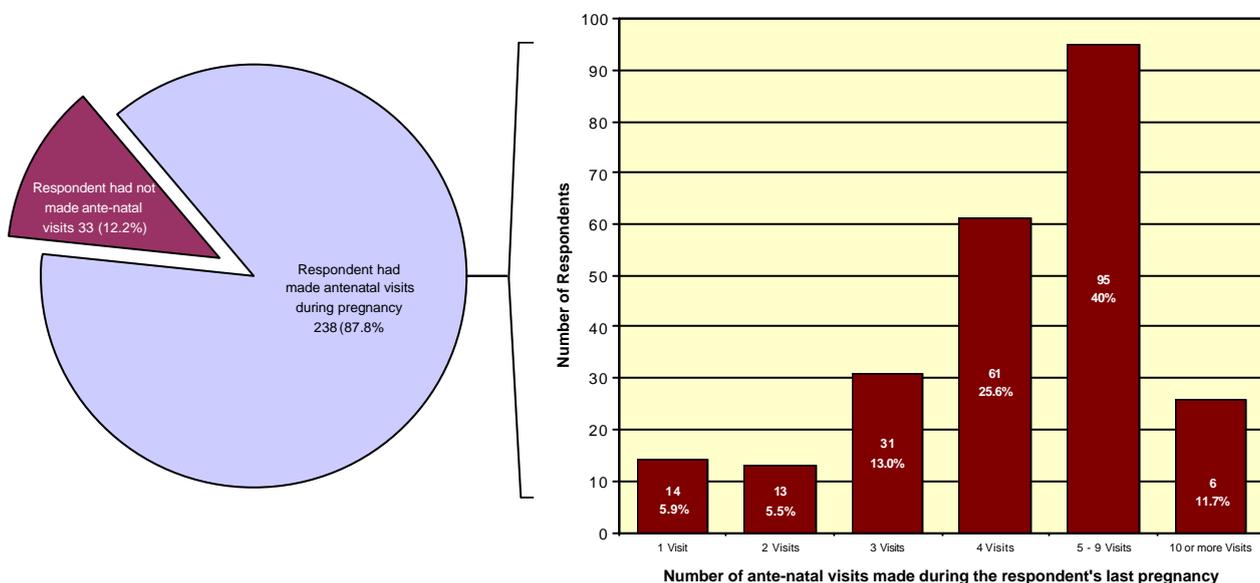


range of health messages where age is used as a guide for appropriate health treatment. This problem can be overcome by linking into locally meaningful growth phases or indicators and training community health educators to use them in their education campaigns. In the case of how to time the measles vaccine, the development of teeth or ability to laugh might be successfully promoted as indicators of the right time to vaccinate.

5. ANTE NATAL CARE

From the data displayed in Figure 101 we can see that 238 respondents, or 87.8% of the sample, said that they had made one or more visits to the midwife for antenatal care during the course of their last pregnancy. Of these, 24% made less than four visits to the midwives, 25.6% made exactly four visits to the midwife whilst the remaining 51.7% made more than four visits. The most variant cases, where several women had visited the midwife as many as 21 times, were due to the fact that the midwife had encouraged the women to return on a weekly basis in order to receive their weekly iron supplements. This was done both to ensure that the women kept in close contact with the midwife and also to ensure that the iron supplements were being properly spaced. Whilst this data suggests that a slight majority of women in the target areas are receiving an adequate number of ANC checks during pregnancy, it should be remembered that Lani women tend to commence their ANC visits once the pregnancy is already quite advanced, normally no earlier than 12 weeks, and therefore the spacing of ANC visits over the course of the pregnancy may still be poor.

FIGURE 101.
COVERAGE AND FREQUENCY OF ANTE-NATAL VISITS



Furthermore, skills and services offered by midwives remain limited. The importance of having well trained and highly skilled midwives stationed in the peripheral areas of Jayawijaya, such as Kanggime and

Kembu-Mamit, is extremely important if maternal and infant mortality and morbidity rates are to be reduced.

When we consider there are almost no doctors servicing these areas, and also the extremely rugged nature of the terrain and the consequent difficulties involved in providing emergency health services in remote locations, it is clear that the role played by the health center and village based midwives must be optimised. In particular their existing knowledge and skills should be improved through ongoing training and supervision and they should also be authorized, trained and equipped to deal with critical obstetric cases. The midwives should also be encouraged to extend community access to their services, both through maintaining more reliable attendance times at their *polindes* / birthing hut and through making themselves more open to making home visits for cases where the women cannot easily come to the *polindes*.

As has been discussed in section III / 2.2.1, many women in the target communities prefer to give birth at home with the assistance of other family members or traditional womens' healers. Most women still find the concept of high-risk pregnancy strange as they regard pregnancy as principally a social condition rather than a biomedical condition. In this regard the DHO, midwives and other health workers need to continue to impress upon local women the possible risks involved in pregnancy.