

# Biomedical Facts and Social Constructs: The Relative Attention Paid to Prenatal and Postpartum Periods in Sri Lanka

*The high level and quality of prenatal care is in stark contrast to the woeful inadequacy of postnatal care*

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In Sri Lanka, a well-organized system of maternal and child health services provides care to mothers and children. However, the services provided before delivery differ markedly from those following delivery, when most of the care and attention is bestowed on the newborn and not on the

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mother. This difference may be seen with regard to both the formal health delivery system and the general attention given to the mother by the family. Although the pregnant mother receives attention from the maternal health services, it is not for the mother herself, but rather because she is carrying the baby. This is not surprising in a society where a woman's main role is child-bearing and child-rearing – a role that the mothers themselves accept. But because of such attitudes, mothers do not receive the necessary care during the postpartum period from the formal health delivery system, their families or even from themselves.

Most mothers in socially deprived sections of developing countries including Sri Lanka are unlikely to receive sufficient additional nutrition or emotional support from their families while they are breastfeeding. Breast-feeding is more prevalent among the poor, perhaps more out of economic necessity than for any other reason, so mothers in deprived communities are likely to suffer more during the lactation period than those from higher income groups.

In South Asia, most maternal deaths occur in the immediate puerperal period, but despite this few women are visited by health workers during this time (Jejeebhoy, 2000). A study conducted in rural Rajasthan, India, observed that morbidity more often occurs in the first trimester and the puerperium than in the second and third trimesters (Datta and others, 1980). As noted in many recent studies, maternal morbidity following delivery is extensive and under-recognized (Bhatia and Cleland, 1996; De Silva, 1997a; Glazener and Abdella, 1995).

Currently, Sri Lanka's Ministry of Health and Indigenous Medicine provides maternal health services which comprise a network of medical institutions and health units. The Family Health Bureau is the central organization responsible for planning, coordination, direction, monitoring and evaluation of maternal and child health (MCH) and family planning programmes. State-sponsored maternal health services, therefore, have a potentially crucial role to play in the promotion of safe motherhood in Sri Lanka. At the community level, the public health midwife (PHM) is the "front-line" health worker. She provides domiciliary health care, distributes contraceptives, follows up family planning users and assists at MCH clinics. One of her main duties is to register pregnant mothers in her area during home visits within the first four months of pregnancy. She is also tasked with providing care to pregnant and postpartum mothers and newborns in her PHM area through regular home visits.

As in other countries, the length of post-delivery stay in the hospital is decreasing in Sri Lanka owing to pressure on the availability of beds as well as maternal choice (Fortney, 1997; Koblinsky and others, 1993). And as in many developing countries, very few mothers with complications during the puerperium actually visit health facilities, which underlines the need to encourage mothers to make use of existing provisions (Nirupam and Yuster, 1995). At the same time, over two thirds of maternal deaths in Sri Lanka occur during the puerperium (Bandutilaka, 1996). All this indicates the necessity of strengthening services for mothers during this particularly important period of motherhood. The aim of the present study is to investigate the level of care mothers received from the maternal health services during their most recent pregnancy and postpartum period, and to identify those who received inadequate care.

### **Materials and methods**

The 42 days following delivery is the generally accepted definition of the puerperium and is the definition used by the World Health Organization in defining maternal death (WHO, 1990). By contrast, the word postpartum, though heavily used in the literature, has no specific definition with regard to the health of mothers immediately following childbirth (Brady and Winikoff, 1992). A number of studies of maternal deaths, however, have extended the scope of the definition to include death occurring up to three months after delivery (Koenig and others, 1988) or even one year (Walker and others, 1986).

In order to investigate the levels and patterns of health care during the prenatal and postnatal periods, the study first started with a number of focus group discussions with mothers in the post-puerperium period and with health personnel in different locations of the study area. Second, structured interviews were conducted to obtain detailed information on prenatal, natal and puerperium experience from mothers who had just completed the puerperium. The present article draws only on the second data source.

The study took place in the Kalutara district about 50 km south of Colombo. Using structured interview schedules, data were collected from 600 mothers within one week following their puerperium (i.e. 43-50 days after delivery). Mothers were identified by the research team, which comprised the principal investigator, and a sociologist and medical scientist, who acted as co-investigators. Twenty-four specially trained female health volunteers of Kalutara district were selected as interviewers to assist the team. Mothers were identified by using the PHM registers in selected areas of Kalutara district and from other sources.

The respondents were selected from three Medical Officer of Health (MOH) areas in Kalutara district, namely, Kalutara, Beruwala and Matugama. The first two of these are supervised by the National Institute of Health Sciences of Sri Lanka. Kalutara can be categorized as urban, whereas Beruwala and Matugama are semi-urban and rural respectively. The three MOH areas together include 105 PHM areas.

Each interviewer was required to cover three to five PHM areas and make an initial visit to each mother identified by the PHM's register to check her availability for the interview. At least three visits were made to locate a mother. If she had moved, attempts were made to obtain her new address. Interviewers continued to identify mothers for the study using the eligibility criteria given to them until each interviewer had identified approximately 25 mothers from the allocated PHM areas who were willing to be interviewed. According to the eligibility criteria, the mother had to satisfy three conditions in order to be selected for the interview: she had to live in the study area, to have given a live birth about 43-50 days before the intended date of interview, and the child had to be alive at the time of the interview.

The selection, location and interviewing of mothers took place from May to September 1996. Fieldwork was not conducted simultaneously in all three MOH areas because of difficulties in supervision. Interviewers were given a maximum duration of two months to identify and complete the interviews with the eligible respondents. The interview schedules were detailed and lengthy; they included household, socio-economic, cultural and demographic information along with data on care received during the prenatal and postnatal periods related to the most recent fertile pregnancy.

## **Results**

### **Prenatal care**

The proportion of mothers who received maternal care and the timing of first contact with the PHMs are key indicators of the level of prenatal care. However, the utilization of prenatal domiciliary and clinic-based services may depend on the mother's attitude at the time of conceiving. In the study population, about 86 per cent of the mothers wanted to have a baby at that time, but another 8 per cent wanted to delay it. A small proportion of the mothers wanted no more children (3 per cent).

Fertility preferences were clearly related to their parity. Almost all women with no children wanted to have the pregnancy at that time but, among those who had four or more children, 30 per cent wanted no more children at

**Table 1. Percentage distribution of women by timing of initial contact with prenatal care, according to fertility preferences, in Kalutara district, Sri Lanka**

Number of months pregnant at the time of initial contact <sup>a</sup>	Wanted more children at that time	Wanted more children later	Wanted no more children at that time	Don't know/uncertain	All women
1	4.3	4.3	5.9	4.3	4.4
2	45.3	34.8	29.4	26.1	43.5
3	38.4	43.5	35.3	47.8	39.1
4	8.0	8.7	11.8	4.4	8.1
5+	3.7	8.7	17.6	17.5	5.0
<b>Total</b>	100.0	100.0	100.0	100.0	100.0
<b>N</b>	510	46	17	23	596
Mean (months) <sup>b</sup>	2.5	2.7	3.2	2.9	2.6

<sup>a</sup> Contact with doctor, nurse or public health midwife.

<sup>b</sup>  $p < .05$ .

that time and another 24 per cent had not made up their minds (data not shown).

The mothers' fertility preferences and their utilization of prenatal care services were strongly associated. Mothers who had wanted a pregnancy at that time made their initial contact with health care services at a much earlier stage of pregnancy than those who wanted no more children or were undecided (table 1). About 88 per cent of the mothers who had wanted a pregnancy had their initial contact with prenatal health care personnel by the end of the first trimester, compared with about 70 per cent of the mothers who wanted no more children. Mothers who wanted no more children at that time had their initial contact with prenatal care services about six weeks later than did mothers who wanted the pregnancy.

Nearly three quarters (72 per cent) of the mothers received six or more home visits by the PHM during the prenatal period of their most recent fertile pregnancy, but 16 per cent received fewer than five visits and 3 per cent fewer than three visits; only a very small proportion of the mothers did not receive any domiciliary care at all (table 2). On average, women received a large number of PHM home visits in each trimester. During the second and third trimesters, the mean number of visits a mother received from a PHM was 2.6 and 3.1 respectively. Even during the first trimester, each mother received on average about one PHM visit.

Apart from the home visits by the PHM, mothers also received care through a variety of state-run prenatal clinics. About 90 per cent of the mothers

**Table 2. Percentage distribution of mothers according to the number of home visits received from a public health midwife and their visits to maternal and child health clinics at three stages of pregnancy, in Kalutara district, Sri Lanka**

Number of visit	Prenatal home visits by public health midwife				Prenatal visits to maternal and child health clinic			
	First trimester	Second trimester	Third trimester	All trimesters	First trimester	Second trimester	Third trimester	All trimesters
0	30.9	4.5	4.7	1.5	37.0	3.0	2.3	0.8
1	50.2	8.1	6.0	1.5	49.3	6.4	2.7	1.5
2	15.8	27.2	14.8	2.3	1.7	18.3	10.9	1.0
3	2.7	51.8	41.6	4.5	2.5	64.9	29.7	1.8
4	0.2	4.5	17.6	5.7	0.3	5.4	25.2	5.4
5	0.1	2.0	9.1	11.7	0.1	0.7	12.1	6.0
6+	0.2	1.8	6.0	72.4	0.3	1.3	17.1	83.8
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean visits <sup>a</sup>	0.9	2.6	3.1	6.6	0.8	2.7	3.8	7.3

<sup>a</sup> Visits by public health midwife  $p < 0.01$  ; clinic visits  $p < 0.01$ .

reported five or more prenatal clinic visits during their most recent fertile pregnancy (table 2). Only 1 per cent of the mothers made no visit to a prenatal clinic. In the second and third trimesters, women made relatively more clinic visits than domiciliary contacts; during the third trimester, they received an average of only three home visits by the PHM, compared with making an average of about four visits to the prenatal clinic. The mothers in this study received an average of about 6.6 home visits by a PHM and they also made about 7.3 clinic visits, amounting to about 14 prenatal contacts in all.

Is the number of home visits based on need? To answer this question, the visits received by women who were hospitalized during the prenatal period ( $n = 70$ ) were compared with those received by other women. The comparison was based on the assumption that women who are hospitalized suffer more serious maternal morbidities than those who are not hospitalized, and are, therefore, in greater need of attention from the MCH system. However, this proposition was found to be untrue at the community level in Sri Lanka. Those who were admitted to the hospital during the prenatal period and those who were not admitted received more or less the same number of home visits: 6.6 versus 6.7 visits. Where prenatal clinic visits are concerned, a mother who had been hospitalized made only about 0.4 more visits than those who had not (a non-significant difference), which suggests that neither the PHM nor MCH clinic staff paid special attention to mothers who needed more care and advice.

## *Content of prenatal care*

Mothers who had seen a doctor, nurse or PHM for a prenatal check-up during their most recent fertile pregnancy were asked whether or not they received specified components of care during any of the visits. Almost all mothers (97-100 per cent) in the study population had prenatal examination/preventive services related to weighing, height, blood pressure, fundal height (“abdomen measured”), foetal heart auscultation (“listened to baby”) and Leopold’s manoeuvres (“checked baby’s position”). Nearly 95 per cent of the mothers received tetanus toxoid injections (two doses).

At the prenatal check-ups, 93-98 per cent of the mothers received de-worming and iron tablets, and “Thriposha” (triple nutrient), which is a nutritious food supplement. Almost all were advised about diet, danger signs of pregnancy, breastfeeding, personal hygiene and family planning. Considering the number and content of prenatal check-ups, it could be said that whatever criteria are used to determine “adequate quality” of prenatal care, each and every mother would have received that without a doubt.

## **Perinatal care**

Every delivery should be attended by adequately trained personnel, taking into consideration any risk factors, in order to offer appropriate monitoring of labour and delivery. In Sri Lanka, about 90 per cent of deliveries take place in an institution, where it is assumed that there are adequately trained personnel and the necessary resources for routine and emergency care, though this is not true in every case.

Of the total 596 deliveries, 78 (13 per cent) were by caesarean section, the balance being vaginal deliveries (87 per cent), including 13 cases of forceps delivery (table 3). In Sri Lanka, as in many parts of the world, all women having their first babies are required by hospital protocol to have an episiotomy (WHO, 1996). Only about 2 per cent of the total deliveries took place at home or on the way to the hospital, with the vast majority being in some health institution. Almost one third of the deliveries took place in a tertiary-level institution (teaching/general/base hospital), while only 12 per cent and 9 per cent took place in secondary- and primary-level institutions respectively. A small proportion of mothers used private hospitals for the delivery.

Clearly, most mothers tend to bypass primary- and even secondary-level institutions for their confinements. Most primary- and secondary-level institutions are very under-utilized for confinements for a variety of reasons. Consequently, tertiary-level institutions are overcrowded with mothers for confinements, and hospital stay is significantly shortened. A very large

**Table 3. Percentage distribution of mothers according to place of delivery for most recent birth, by mode of delivery, in Kalutara district, Sri Lanka**

Place of delivery for most recent birth	Mode of delivery for most recent birth		
	Vaginal <sup>a</sup>	Caesarian	Both
Teaching/general/base hospital	71.4	80.8	72.7
District hospital	13.3	5.1	12.2
Rural hospital/peripheral unit/maternity home	9.5	2.6	8.6
Private hospital	3.7	11.5	4.7
Home and other	2.1	-	1.8
<b>Total</b>	100.0	100.0	100.0
<b>N</b>	518	78	596
Mean number of nights spent in hospital	1.4	5.5	2.0

<sup>a</sup> Includes 13 cases of forceps delivery.

proportion of mothers in this study reported that they preferred not to stay longer in the delivery institution, primarily owing to family responsibilities, but also owing to the poor attention they received and the filthy environment of these places.

Over 70 per cent of the mothers who had had a vaginal delivery spent only one night in the health institution, while another 5 per cent did not stay even one night. On average, mothers who had a vaginal delivery stayed 1.4 nights and mothers who had a forceps delivery stayed about two nights after the delivery. In contrast, those who underwent caesarean section on average spent five nights in the health institution, before returning home (table 3).

### Postnatal care

After a woman gives birth she faces the task of caring for a newborn – an especially challenging task for mothers with their first child – together with ensuring her own recovery from the ordeal of pregnancy and delivery. A number of childbirth-related problems experienced by mothers occur in the puerperium, the six weeks following delivery. Such problems can be identified and treated through proper follow-up visits for women during the puerperium.

According to guidelines laid down by the Department of Health, a mother who has delivered in a medical care institution should be seen by the PHM after coming home at least three times during the first 10 days and at least once during the remaining part of the puerperium. During those visits, the PHM should provide care for the mother and child and ensure that the baby is breastfed. Mothers should be counselled further and motivated to accept a suitable method of contraception.



**Table 4. Percentage distribution of mothers according to number of home visits from a public health midwife and visits to maternal and child health clinics during two stages of the postnatal period, in Kalutara district, Sri Lanka**

Number of visits	Postnatal home visits by a public health midwife			Postnatal visits to maternal and child health clinics		
	≤ 10 days	11-42 days	All	≤ 10 days	11-42 days	All
0	9.8	12.6	1.9	92.3	48.2	46.7
1	27.4	31.5	7.5	6.4	44.5	41.8
2	31.9	31.6	14.4	1.3	6.2	8.1
3	21.0	15.0	24.5	-	0.8	2.3
4	7.5	4.2	23.1	-	0.2	0.7
≥ 5	2.5	5.1	28.8	-	0.2	0.2
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0
Mean visits <sup>a</sup>	1.8	1.7	3.3	0.1	0.6	0.7

<sup>a</sup> Visits by the public health midwife are not significant; clinic visits  $p < 0.01$ .

Although the mothers received an excessive number of prenatal check-ups from the PHM and also had several clinic visits, they were given much less attention during the postnatal period. During the first 10 days postpartum, the mothers received an average of only 1.8 home visits from the PHM (table 4). About 10 per cent of the mothers received no PHM visits during this most critical part of the postpartum period. Almost 70 per cent of the mothers did not receive the recommended minimum of three PHM visits during this 10-day period. The average number of PHM visits a mother received during the second part of the puerperium (11-42 days) was more or less the same as during the first part. In the second part of the puerperium, 13 per cent of the mothers had no domiciliary contact with the PHM. When the whole puerperium is taken into account, mothers received 3.5 home visits on average from a PHM, with about half the mothers receiving four or more postnatal visits by a PHM.

Do the two different types of delivery and lengths of hospital stay influence the postnatal care given by the PHM? Although mothers delivered by caesarean section (CS) stayed longer in the hospital, the average number of PHM visits they received during the first 10 days after delivery was not significantly lower than that of vaginal-delivered mothers. During this period, 14 per cent of CS-delivered mothers and 9 per cent of vaginal-delivered mothers received no care from a PHM. However, during the 10-42 day period of the puerperium, a CS-delivered mother received a slightly higher average number of PHM visits than did vaginal-delivered mothers. By the end of the puerperium, no great difference was observed in relation to the average number of PHM visits per mother.

Mothers do not usually visit the MCH clinic during the puerperium since the clinic offers them no postpartum care. However, should a mother visit the MCH clinic and ask for postpartum assistance, whether she receives it or not will depend primarily on the attitude of the health care workers at the clinic. All MCH clinics are overburdened with the demands of prenatal care, so a postpartum mother will very rarely receive attention at these places. For this reason, very few women visit them. Only 8 per cent of the mothers in the study made a visit to a clinic during the first part of the puerperium (table 4). But during the latter part of the puerperium, just over half the mothers made at least one visit to the clinic. During the entire puerperium, mothers made an average of less than one visit to the MCH clinic.

Mothers who visited the MCH clinic during the puerperium did so to obtain the Thripasha food supplement, which clinics distribute free of charge to prenatal and postnatal mothers, or to have the newborn vaccinated with BCG (bacille Calmette-Guerin) for protection against tuberculosis. Apart from that, hardly any consultation or treatment occurred on such visits. It was concluded that the special attention given to pregnancy checks and delivery was aimed at the infant's well-being and not the mother's complete physical and nutritional recovery from a birth.

### **Content of postnatal care**

Shorter post-delivery hospital stays have increased the need for better postnatal domiciliary care by the PHM and other primary health care workers in Sri Lanka. As the front-line community health worker, the PHM is increasingly expected to detect and monitor health problems among mothers in the puerperium and to take the necessary action. Mothers who received at least one postnatal home visit by a PHM were asked whether or not they received specified components of care during any of her visits. Body temperature was taken for only about half the mothers; abdominal and breast examinations were done on 70 per cent and 74 per cent of the mothers respectively.

Nearly 70 per cent of the mothers who received at least one PHM visit during the puerperium were examined to evaluate the status of the cut in the vagina (episiotomy) or assess the level of the fundus. The vast majority of mothers received advice regarding family planning, breastfeeding and baby care.

### **Relationship between prenatal and postnatal care**

The link between prenatal and postnatal care is assessed in table 5. There appears to be a strong positive association between the number of prenatal visits and visits during the first 10 days of the puerperium. For instance, 91 per cent of mothers who had three or more postnatal PHM visits also had five or

**Table 5. Relationship between prenatal and postnatal visits, and mean number of postnatal visits at different levels of prenatal visits, in Kalutara district, Sri Lanka**

Number of postnatal home visits	Number of prenatal home visits			Total	N
	None	1-4	5+		
<b>During 0-10 days<sup>a</sup></b>					
None	1.3	31.3	63.4	100.0	58
1	1.8	16.6	81.6	100.0	163
2	0.5	13.7	85.8	100.0	190
3+	1.1	8.1	90.8	100.0	185
<b>Stages of postnatal period</b>					
	Mean number of postnatal home visits				
0- 10 days <sup>a</sup>	1.2	1.6	2.1	1.8	
11-42 days <sup>a</sup>	1.0	1.4	1.9	1.7	
0-42 days <sup>a</sup>	2.2	3.0	4.0	3.5	

<sup>a</sup> p <0.001

more prenatal PHM visits, compared with 63 per cent of mothers who received no postnatal visits.

The mean number of PHM visits received by a mother during the first 10 days of the postnatal period increased from 1.2 for those mothers who received no prenatal visits to 2.1 for those who received five or more visits. When the 42-day postnatal period is considered, mothers who had received five or more prenatal visits by a PHM received an average of four postnatal visits, compared with only three visits for mothers who had received 1-4 prenatal visits.

### **Adequacy of postnatal care**

Mothers who received fewer than three postnatal home visits by a PHM during the first 10 days of the puerperium, and not a single home visit by the PHM during the 11-42 days of the puerperium are categorized as having received inadequate postnatal care from the MCH system. The remaining women were categorized as having received adequate postnatal care. Almost 70 per cent of mothers in the study population received fewer than three PHM home visits during the first 10 days of the puerperium, while 13 per cent received none during the rest of the puerperium. When the two conditions are taken together, over 73 per cent of mothers in this study population did not receive adequate postnatal care by PHMs.

Which mothers are more likely to have received inadequate PHM postnatal care during the puerperium? This question was investigated using a number of demographic, maternal and socio-economic factors for the early (0-10 days) and late (11-42 days) puerperium period and the puerperium as a whole (0-42 days).

Reflecting the fact that female age at marriage in Sri Lanka is about 26 years (De Silva, 1997b), the majority of the delivered mothers in the study population were aged 25-34. Although no significant difference by age was observed during the puerperium, older mothers (35+years) were more likely than younger mothers to have experienced inadequate postnatal care (table 6).

Sri Lanka is at, or even below, the replacement level of fertility (De Silva, 1994), and thus nearly half the delivered mothers in our study population were found to be first-time mothers. No significant association was found between the level of postnatal care and parity. However, during the first 10 days of the puerperium, inadequate prenatal care was received by a relatively higher proportion of mothers at parity four and above than of other mothers.

A strong statistical association was observed between fertility preference at the time of conceiving the most recent fertile pregnancy and the level of postnatal care received by individual mothers. Mothers who said that their most recent birth was unwanted were more likely to receive inadequate postnatal care than were mothers whose pregnancies were anticipated.

Compared with the others, mothers who delivered at the tertiary level (state) or private hospitals tended to miss out on PHM services during the puerperium. These mothers tended to obtain services from private consultants during the puerperium, rather than receiving the PHM domiciliary service. However, the mode of delivery did not make any significant difference to postnatal care.

As reported elsewhere, the prevalence of ill-health during the puerperium, particularly during the early part of it, was high in the study population (De Silva, 1997a). The overall health of about 31 per cent of the mothers during the puerperium was classified as unsatisfactory; for 49 per cent, it was less than satisfactory and for 20 per cent it was satisfactory. It might be expected that mothers whose health situation was unsatisfactory would have been visited by a PHM more frequently than mothers with satisfactory health. However, the data do not support this expectation.

Primary health care workers, including PHMs, face frequent public criticism about their work and accusations of being biased towards well-to-do people. In support of this view, the study found that mothers from low-income households were more likely to receive less frequent PHM postnatal domiciliary care than were mothers from high-income households. However, no relationship between the schooling of mothers and postnatal care was found.

**Table 6. Percentage of mothers who had received inadequate postnatal domiciliary care from public health midwives, by selected characteristics, in Kalutara district, Sri Lanka**

Characteristics	During 0-10 days of post-natal period (percentage)	During 11-42 days of post-natal period (percentage)	During 0-42 days of post-natal period (percentage)	N
<b>Age (years)</b>				
Less than 25	64.0	22.0	72.0	50
25-34	68.7	10.9	72.7	476
35+	74.3	14.3	78.6	70
<b>Parity</b>				
1	69.1	14.7	74.5	259
2-3	67.8	10.2	71.7	283
4+	74.1	11.1	75.9	54
<b>Fertility preference</b>				
Wanted	66.9 <sup>a</sup>	11.0 <sup>a</sup>	71.2 <sup>a</sup>	510
Unwanted	81.4	19.8	86.0	86
<b>Hospitalized during pregnancy</b>				
Yes	71.4	14.3	75.7	70
No	68.5	12.0	73.0	526
<b>Place of delivery</b>				
Tertiary/private	70.5	13.2	75.3 <sup>a</sup>	461
Secondary	58.9	9.6	60.3	73
Primary	68.4	8.1	74.2	62
<b>Mode of delivery</b>				
Vaginal	69.3	12.4	73.6	518
Caesarian	66.7	11.5	71.8	78
<b>Health status during puerperium</b>				
Satisfactory	70.3	14.4	74.6	118
Less satisfactory	67.8	11.5	72.9	295
Unsatisfactory	69.9	12.0	73.2	183
<b>Education</b>				
Primary (1-4 years)	69.3	6.8	70.5	88
Secondary (5-9 years)	67.8	10.7	70.5	149
Higher (10+ years)	69.4	14.2	75.2	359
<b>Religion</b>				
Buddhist	70.9	14.9 <sup>a</sup>	75.8 <sup>a</sup>	447
Muslim	65.7	4.0	65.7	99
Hindu/Roman Catholic	58.0	14.0	66.0	50
<b>Residence (MOH)</b>				
Urban (Kalutara)	67.7 <sup>a</sup>	18.4 <sup>a</sup>	75.6 <sup>a</sup>	217
Semi-urban (Baruwala)	60.5	7.4	64.8	162
Rural (Matugama)	76.5	9.7	77.4	217
<b>Household income</b>				
High	57.1 <sup>a</sup>	17.1	60.0 <sup>a</sup>	35
Moderate	67.7	11.5	72.9	436
Low	77.4	13.7	79.0	124
<b>All</b>	69.0	12.2	73.3	596

<sup>a</sup> p 0.05.

Buddhists comprised the majority of respondents; Muslims accounted for 17 per cent of the sample and Hindus/Roman Catholics 8 per cent. Muslim mothers appeared to receive much better PHM postnatal services than the others during both parts of the puerperium. Cultural practices are part of the explanation. Muslim mothers are less likely than others to leave their homes for employment or other activities, and so are more easily contacted by the PHM than are other mothers. A Buddhist mother will often move to her parents' home before delivery and stay for a couple of weeks after delivery. For this reason, a significantly higher proportion of Buddhist mothers tend to receive inadequate postnatal care compared with both Muslim and Hindu/Catholic mothers.

The mother's place of residence had some influence on postnatal PHM domiciliary care. Mothers who lived in the Beruwala Medical Office of Health (MOH) area, which is semi-urban were more likely to receive the stipulated level of PHM postnatal care. However, this may be partly explained by the fact that the area also contained a large proportion of Muslim mothers. Mothers in the Matugama MOH area, a rural environment, received a much lower level of postnatal care than the guidelines stipulate. Mothers living in the Kalutara MOH area, an urban locality, tend to be missed by the PHM domiciliary care programme, but they may have better access to forms of postnatal care outside the government MCH system. Two of these MOH areas, Kalutara and Beruwela, come under the supervision of the National Institute of Health Sciences, but there appears to be no institutional effect on the level of postnatal domiciliary care service provided by PHMs.

### **Conclusions and policy implications**

The overall impression given by many health personnel in Sri Lanka is that mothers are well looked after by the well-established island-wide network of MCH systems and that no change is therefore required. Moreover, the relatively low rates of maternal mortality (40 per 100,000 live births) and infant mortality (15 per 1,000 live births) are advanced as justification. However, the study suggests that, compared with prenatal care, the MCH system is not delivering enough in terms of quantity and quality of care during the postnatal period. This view is supported by the high prevalence of puerperal morbidity identified among the study population, findings which have been reported elsewhere (De Silva, 1997a). Although maternal mortality has declined over the last couple of decades, there has been no detailed investigation to document the prevalence of maternal morbidity, and this is particularly so in the case of the postpartum period.

Pregnant mothers are given special care by the health care system in Sri Lanka, but after delivery most of the care is diverted to the newborn. However, the process of normalization of the reproductive and other systems can expose new mothers to various morbid conditions following childbirth. The success of the normalization process depends mainly on the socio-economic status of the mother and the availability and utilization of health care facilities during the postnatal period. Consequently, care provided by PHMs and MCH clinic facilities, institutional care by hospitals and family support are immensely important.

This study investigated the level of support received by mothers during the pregnancy and postnatal period through MCH clinical and domiciliary services. The results indicate an excessively high level of prenatal care, but an inadequate level of postnatal care. An expectant mother in Sri Lanka can expect to receive on average almost seven prenatal home visits by a PHM, to make over seven visits to prenatal clinics and a couple of visits to a private specialist/consultant. The effectiveness of prenatal care in preventing maternal death and severe obstetric complications is uncertain because most of the complications that do occur during labour and delivery can be unpredictable and sudden in onset. Moreover, evidence exists to show that four antenatal visits can be sufficient for routine checking and educational purposes (Villar and Bergjo, 1997). In conclusion, the level of prenatal care provided and utilized in Sri Lanka appears to be excessively high.

Most mothers in Sri Lanka select tertiary-level institutions for their confinements, thus by-passing all the primary- and secondary-level institutions, which are quite capable of handling most confinements. The length of stay in the hospital is steadily declining in response to the pressure on beds as well as maternal choice. An average hospital stay of only two nights indicates the level of institutional care mothers receive in Sri Lanka before the responsibility of caring for the postpartum mothers is handed over to the MCH system for the remaining 40 days. On discharge, some hospital authorities advise mothers and their relatives to remind the respective area PHM to visit mothers on their return. However, this process is not effective, since there is no direct official communication to validate it.

The MCH postnatal care system has major deficiencies. Very few MCH clinics provide services for postpartum mothers, so they have to rely mainly on the PHM domiciliary service to obtain care. Although the prevalence of morbidity during this part of motherhood is extensive and unrecognized by many health personnel or even by the mother (De Silva, 1997a), no strong action has been taken to rectify this situation.

Most mothers see child-bearing as a natural biological phenomenon. Any subsequent inconveniences are also considered natural and largely ignored. Nor do PHC workers have any suitable monitoring/evaluating systems or correct indicators for quality of care assessment; thus, they do not make postpartum mothers aware of possible complications. However, the postpartum period is when an overwhelmingly large proportion of maternal deaths in Sri Lanka occurs. Consequently, there is a strong need to improve postnatal care at the community level, which currently is very poor in terms of quality and quantity.

Postpartum mothers received an average of 1.8 PHM domiciliary visits during the first 10 days of the puerperium although the number of visits stipulated by health authorities is much higher. According to the Family Health Bureau, a PHM should make three visits within the first 10 days for an institutional delivery and five visits for a home delivery, plus at least one visit during the remainder of the puerperium. The study found that 73 per cent of the mothers did not receive the stipulated level of postpartum care by the PHM. Postpartum care is particularly inadequate during the first 10 days of the puerperium, when many postpartum mothers report illnesses (De Silva, 1997a).

Better care is needed for these postpartum mothers to reduce the burden of ill-health. Postpartum illness is costly in terms of delayed mother-infant interaction, lactation difficulties, readmission to the hospital, increased expenses and possible permanent injury or death. PHMs and public health nursing sisters are in a unique position to identify women at risk, recognize early warning signs and provide teaching and counselling for prevention and care (Clark 1995).

Mothers who received relatively few prenatal PHM home visits also tended to have inadequate postnatal care compared with mothers who received a large number of prenatal visits. This suggests a pattern of preference made by PHMs for domiciliary care service. Significantly fewer postnatal home visits by PHMs were observed among poor, rural and Buddhist mothers.

The Government has increased the coverage of primary health care by providing and expanding existing facilities and staff, but no similar programme exists to enhance the quality of care provided by health institutions. Mothers are increasingly expecting postnatal care in terms of quality and quantity, at both the domiciliary and the institutional level. The high level and quality of prenatal care is in stark contrast to the woeful inadequacy of postnatal care in this country. It appears that the special attention given to pregnancy checks and delivery is focused on the infant and not followed through in respect of the mother's complete recovery from childbirth.



Home visiting provides a familiar environment for mothers to receive friendly care and advice from PHMs. An overwhelmingly large proportion of mothers were satisfied with their prenatal domiciliary care. Not surprisingly, mothers who received a relatively higher number of either prenatal or postnatal home visits were more satisfied than the mothers who received fewer visits. Mothers are delighted to receive care and advice in a homely environment, so it should not be difficult to provide adequate postnatal care through the same domiciliary services.

During the last few years, PHMs have taken on duties other than MCH activities. Health authorities in Sri Lanka need to investigate whether postnatal care is neglected as a result of PHMs being given inadequate time to perform all the duties assigned to them.

Under the present system of MCH care, no proper information system is available to evaluate the postnatal care. The mother's record card kept and maintained by PHMs has space for only limited information on postnatal care. Since the card is kept with the PHM, she can make entries any time as she wishes. If the same information were entered on the mother's appointment card, which is kept with the mother, supervising officers could more easily assess the quality and quantity of care by undertaking audits on postnatal PHM visits. There is also a potentially high demand for postnatal clinics in the field in addition to prenatal, family planning and child welfare clinics. They may be conducted alongside the well-woman clinics initiated recently, at the end of the first, second and sixth weeks of the postnatal period.

The frequency of PHM postnatal visits should be decided according to the health status of the mother and baby on discharge. It is also important to heighten awareness among the mothers and family members so that they know they should contact the PHM whenever necessary during the postnatal period. Postpartum contact with the husband particularly offers an opportunity to educate men about this important part of motherhood and the value of spacing subsequent births. The diminishing length of hospital stay and the emphasis on reducing health care costs create the need for innovative, low-cost postpartum follow-up programmes either at the domiciliary or the institutional level in Sri Lanka.

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