

Study of perinatal mortality 1970, Maternity Hospital Kuala Lumpur*

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THE PERINATAL MORTALITY in any community is influenced by the personal and social characteristics of the mother, as well as by the standard of medical service they receive. It is widely regarded as one of the most important indices of the standard of obstetric care in any community. This study was undertaken to find out the factors influencing the perinatal mortality at the 225-bed Maternity Hospital, Kuala Lumpur, the largest maternity hospital in Malaysia.

Materials

The study was carried out from January 1970 to December 1970. The Maternity Hospital, Kuala Lumpur is a large metropolitan hospital and not only provides the main obstetric service in Kuala Lumpur, but also receives most of the abnormal obstetric cases from the outlying mid-wifery centers and district hospitals. Some of the abnormal obstetric cases are airlifted from the rural areas, but others have to be transported by road.

Data

The data obtained have been tabulated as follows.

TABLE I
Maternity Hospital Statistics for 1970

Total number of obstetric beds	225
Premature nursery beds	45
Total number of antenatal first visit	8,390
Total number of subsequent visits	14,226
Total number of admissions	11,258
Total number of deliveries	8,054
Total number of booked deliveries	6,262
Total number of unbooked deliveries	1,792

The above table shows that although there were 8,290 hospital bookings at the antenatal clinics, subsequently only 6,262 of them delivered in the hospital. This is due to the practice that some patients have their antenatal care at the hospital, but have their delivery as domiciliary case or in private nursing homes. The number of unbooked deliveries was 1,792; this high figure was due to the practice that the maternity hospital received most of the abnormal obstetric cases of the region.

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Factor		Booked	Unbooked
Social class	First	953	9
	Second/ Third	5,309	1,783
Ethnic group	Malays	2,486	548
	Chinese	1,625	628
	Indians	2,118	614
	Others	33	2
Parity	Primigravida	1,805	432
	Gravida 2 — 5	2,789	807
	Gravida 6+	1,668	553

Table II shows the relationship of social class, ethnic group, parity and booked or unbooked deliveries. The designation first, second and third class are based on the socio-economic factor, and the first class patients belong to the higher social class and second and third class to the lower social groups. As shown in Table II, there was a fair distribution of three main ethnic groups, Malays, Chinese and Indians. Because of the great demand upon the beds, it was necessary in 1954 to introduce a system of priorities for women seeking admission. All women showing abnormalities in the present pregnancy or who had previous abnormal pregnancies or confinements; all primigravidae; and all women in their sixth or subsequent pregnancies were accepted for admission, and women pregnant for the second to the fifth time were advised domiciliary deliveries, unless social or obstetric conditions required hospital deliveries.

Social class	Ethnic group	Total		Primigravida		2 — 5		6 +	
		Booked	Unbooked	Booked	Unbooked	Booked	Unbooked	Booked	Unbooked
I	Malays	4	1	—	—	3	1	1	—
	Chinese	2	—	—	—	2	—	—	—
	Indian	6	—	—	—	5	—	1	—
	Others	—	—	—	—	—	—	—	—
	TOTAL	12	1	—	—	10	1	2	—
II & III	Malay	13	25	2	5	7	13	4	7
	Chinese	14	22	5	5	4	13	5	7
III	Indian	6	10	3	—	2	2	4	5
	Others	—	—	—	—	—	—	—	—
	Total	33	57	10	10	13	28	13	19

Table III shows that the majority of the neonatal deaths for the three ethnic groups were for the unbooked cases belonging to social class two and three, and in the higher parity group, since the hospital received most of the abnormal obstetric cases from the outlying rural areas, a certain number of patients presented themselves for treatment with severe degrees of foetal distress and in spite of resuscitation, antibiotics, Caesarean section, neonatal resuscitation and care, the neonatal loss was high in the unbooked cases.

TABLE IV
Social Class/Ethnic Group/Booked/Ubooked/Parity/Stillbirth

Social class	Ethnic group	Total		Primigravida		2 to 5		6 +	
		Booked	Unbooked	Booked	Unbooked	Booked	Unbooked	Booked	Unbooked
I	Malay	2	—	2	—	—	—	—	—
	Chinese	1	1	—	—	—	2	—	—
	Indian	2	—	—	—	2	—	—	—
	Others	—	—	—	—	—	—	—	—
	Total	5	1	2	—	2	2	—	—
II & III	Malay	32	35	6	6	11	17	14	13
	Chinese	28	53	4	5	15	33	8	14
III	Indian	45	36	8	8	19	14	18	14
	Others	—	—	—	—	—	—	—	—
Total		105	124	18	19	45	64	40	41

Table IV shows that the majority of stillbirths were for the unbooked cases, of social class two and three and belonging to the high parity group. The abnormal cases from the rural areas like cephalopelvic disproportion cord prolapses, placenta praevia, accidental haemorrhage and transverse lies were referred for treatment. These cases contributing to perinatal mortality are amenable to treatment by Caesarean section, but a number of such patients, by the time they reach the hospital, present themselves with a dead baby making Caesarean section obviously useless for foetal salvage.

TABLE V
Social Class/Ethnic Group/Stillbirth/Neonatal deaths.

Social Class	Ethnic Group	Stillbirth		Neonatal death up to 1 week	
		M.S.B.	F.S.B.	Less than 5 lbs.	More than 5 lbs.
I	Malay	1	1	4	1
	Chinese	1	1	2	—
	Indian	—	2	1	5
	Others	—	—	—	—
	Total	2	4	7	6
II & III	Malay	29	39	28	10
	Chinese	46	34	26	10
III	Indian	40	41	10	6
	Others	—	—	—	—
Total		115	114	64	26

Table V shows that for stillbirths there was an equal distribution of 115 macerated stillbirths to 114 fresh stillbirths. For the neonatal deaths, the majority were premature babies, 64 deaths out of a total of 107 neonatal deaths. Although the W.H.O. classification gives 5½ lbs. and below as premature baby, at the maternity hospital we classify prematurity as 5 lbs. and below.

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TABLE VI
Maternal conditions/Neonatal deaths/Stillbirths

Maternal condition	Stillbirth		Neonatal Deaths		Total (percentage)	
	FSB	MSB	5 lbs.	5 lbs.		
Toxaemics of pregnancy						
Preclampsia/Eclampsia	37	37	10	3	87	(23.0%)
Hypertension	1	0	0	0	1	
Nephritis	0	0	0	0	0	
Antepartum Haemorrhage						
Placentae Praevia	16	6	9	2	33	(26.9%)
Abruptio Placentae	35	6	11	6	58	
Anaemia	1	28	4	1	34	(10.1%)
Multiple pregnancies	5	7	7	0	19	(5.6%)
Abnormal presentation	35	21	20	4	80	(23.4%)
Pyrexia	0	4	1	0	5	(1.5%)
Cephalo-pelvic disproportion	1	6	0	2	9	(2.5%)
Hydramnios	0	5	0	1	6	(1.7%)
Unknown	25	40	26	14	105	(31.3%)

Table VI shows that the main maternal condition associated with perinatal deaths were antepartum haemorrhage (26.9%), abnormal presentations (23.4%), toxemia of pregnancy (23.0%) and anaemia (10.1%). It is interesting to note that in 31.3% there were no associated maternal conditions.

TABLE VII
Causes of Neonatal Deaths

Disease	Neonatal deaths	Percentage
Congenital abnormalities	6	5.8%
Neonatal infections		
(a) Broncho-pneumonia	7)	21.3%
(b) Gastro-enteritis	15)	
Birth injuries	1	0.9%
Asphyxia neonatorum	8	7.9%
Haemorrhagic disease of newborn	7	6.7%
Respiratory distress synd.	18	17.4%
Neonatal jaundice	5	4.8%
Prematurity	36	34.9%

Table VII shows that the three main causes of neonatal deaths were prematurity (34.9 per cent), neonatal infections (21.3 per cent) and respiratory distress syndrome (17.4 per cent). Prematurity has always remained as the most important cause of neonatal deaths at the Maternity Hospital. It is well established that the risk with prematurity has been associated with lower socio-economic groups, and these groups are known for their tendency to premature delivery and the birth of small babies.

TABLE VIII

		Perinatal Mortality		
		Total	Booked	Unbooked
Class	Deliveries	41.9	23.9	102.1
	1st	19.8	17.8	22.2
	2nd & 3rd	43.5	25.1	101.5
Ethnic group	Malays	37.2	20.6	113.1
	Chinese	53.2	27.6	110.8
	Indians	38.4	27.8	74.9
Parity	Primi	26.8	17.1	67.1
	2 — 5	46.1	25.4	117.7
	6 +	51.7	23.9	112.1

Table VIII shows that the perinatal mortality rate for 1970 at the Maternity Hospital was 41.9, but the rate for booked cases was only 23.9 and for unbooked cases it had increased to 102.1. From this study it was observed that the perinatal mortality was influenced as follows:

- Social Class:**— the rate was lowest in the higher socio-economic group.
- Parity and Age:**— the rate was lowest in the primigravidae and increased with increasing parity and age. The lower rates in the primigravidae was due to early booking, greater care and supervision during the prenatal period and labour.
- Ethnic Factors:**— the rate was not influenced by ethnic factors and the apparent difference was due to socio-economic, nutritional and booking or unbooking, rather than to pure ethnic factors.

Comments:

The perinatal mortality in any community is influenced by biological and social factors like age, parity and socio-economic status. It is known that the perinatal mortality in the under 20 age group is lower than at any other age period, and that gradual deterioration occurs with increasing age. It is also known that socio-economic status influences age at marriage; age at the birth of the first child; the spacing and number of subsequent children; type of antenatal care sought; the place and conditions under which delivery takes place; the domestic life and attitude to pregnancy; and physique and general health of the mother. It is well known that the rates were lower in the upper socio-economic groups.

The perinatal mortality is also influenced by the standard of obstetric care available and this depends on a booked or unbooked case, and the place where the delivery takes place, home, private

nursing home, district hospital, or a maternity hospital. The overall perinatal mortality could be reduced by careful selection of cases, that is by allowing normal cases to deliver at home or a nursing home, while the high risk patients should deliver in hospitals. As such the perinatal mortality will be always higher in a hospital series than a domiciliary series.

Efforts to reduce perinatal mortality should be directed to: the long-term improvement of the general health and living conditions of a population; to encourage family planning; to improve the obstetric and neonatal care services of the rural areas.

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