OBSTETRIC OUTCOME OF THE UNWED ADOLESCENTS

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ABSTRACT

Two hundred and fifty-six unmarried primipara were analysed retrospectively over a five year period in the Department of Obstetrics and Gynaecology, Toa Payoh Hospital. Thirteen were omitted because of insufficient data. The patients were subdivided into an adolescent group, and those more than 18 years of age at time of booking. Maternal complications and neonatal outcome were compared between the two groups of patients. The mode of delivery, in particular the Caesarian section rate, were also compared. Cross comparison was also made among the various ethnic groups in the two categories of patients. Conclusions drawn from these data did not indicate that the adolescent unwed mothers were at higher risk than older women of similar marital status.

Keywords: Unmarried primipara, adolescent, maternal complications, neonatal outcome, caesarian section rate

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INTRODUCTION

One area of adolescent health that has received little attention but has in recent years caused increasing concern in Singapore is that of reproductive behaviour and specifically of the physiological, psychological and legal implications of pregnancy in the adolescent girl.

Better nutrition in childhood appears to be the main factor in the earlier age of menarche (1). This earlier sexual maturity has coincided in the past 10 years with what is believed to be a greater sexual permissiveness which, however, has not been preceded by better sex education or by better and more accurate knowledge of contraceptive practice. The result has been an increased in adolescent pregnancies.

In the past, several investigators reported an increased incidence of obstetric complications in adolescent pregnancies (2). Toxaemia occurs twice as often as in older patients. Anaemia, prematurity, prolonged labour, cephalo-pelvic disproportion, perinatal loss and lacerations have been shown to be increased (3).

In recent years, however, other reports have not shown such a high incidence of complications (4). The question then appears to be whether the adolescent patient is inadvertently more susceptible to obstetric problems because of an immature physical or emotional status, or whether there is an artificial situation present due to extrinsic factors such as inadequate prenatal care and the additional fact that the majority of these patients come from a lower socio-economic background.

The aim of our survey therefore was to assess the occurrence of specific complications, if any, in this 'high risk' population of unmarried adolescent mothers as compared to older women of similar marital and socio-economic status, as well as differences in the various ethnic groups present in Singapore.

MATERIALS AND METHODS

The case records of all unmarried primipara were analysed retrospectively for the five year period 1980 to 1984. Only single births were included and the women were subdivided into an adolescent group and those more than 18 years of age at the time of booking. The social class was generally poor.

The certainty of gestation was noted and complications of pregnancy were recorded. In patients with uncertain dates, radiological or ultrasonic investigations were undertaken and collaborated with clinical findings.

Complications include :

1) Anaemia (haemoglobin level of less than 10g/dl at any stage of the pregnancy)
2) Urinary tract infection
3) Hypertension (2 blood pressure readings of 90mmHg diastolic at any time)
4) Antepartum haemorrhage

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5) Premature labour (occurrence of spontaneous labour resulting in delivery before 37 completed weeks gestation)
6) Threatened abortion
7) Postpartum haemorrhage (loss of more than 350 ml of blood)

An Apgar score of less than three at one minute was taken as evidence of severe birth asphyxia.

Hyperbilirubinaemia as a cause of admission to neonatal nursery would have a level greater than 10mg/dl.

RESULTS

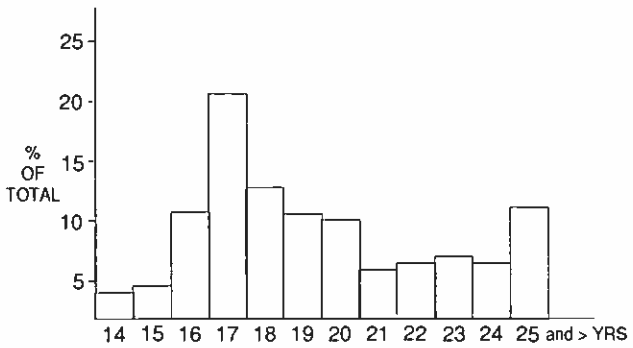
There were altogether 256 patients in the study group of which 13 were omitted because of insufficient data. The final number of patients studied was 243. There were 119 women in the adolescent and 124 women in the older age group. The distribution of the population studied were divided into the different ethnic groups as shown in Table I.

TABLE I
ETHNIC GROUP DISTRIBUTION

Age group	Chinese	Malay	Indian	Others	Total
⩽18 yrs	67	39	13	0	119
	(27.6%)	(16.1%)	(5.4%)		(49%)
> 18 yrs	57	41	24	2	124
	(23.5%)	(16.9%)	(9.9%)	(0.8%)	(51%)
Total	124	80	37	2	243
	(51%)	(33%)	(15%)	(0.8%)	

The Chinese formed the major ethnic group in the population studied, comprising 51% of the total. The Chinese and the Malays had almost equal distribution in the two age groups while the Indians had almost twice the number in the older age group as compared to the adolescent group.

Fig. 1
AGE DISTRIBUTION



As shown in Fig. 1, of the adolescent group, the highest percentage was in the 17 years age group, comprising 21.4% whereas in the older age group, the highest percentage belonged to the 25 years and above age group comprising 11.5%.

The height distribution of the two age groups is shown in Table II. Five percent of the adolescents and almost nine percent of the older age group were less than 150 cm tall.

TABLE II
HEIGHT DISTRIBUTION

Height	⩽ 18 years	> 18 years
⩽ 150 cm	6 (5%)	11 (8.8%)
> 150 cm	113 (95%)	113 (91.2%)
Total	119	124

Only 18.5% of the older women had booked by 28 weeks gestation compared with 21.8% of the adolescent group, whereas 58.9% of the older women and 61.4% of the adolescents booked after 28 weeks (Table III). Forty nine percent of the adolescents were unsure of the date of their last menstrual period, compared with 41% in the older group (Table IV).

TABLE III
GESTATION AT BOOKING

⩽ 18 yrs	> 18 yrs	Total	
Unbooked	20 (16.8%)	28 (22.6%)	48
< 28 weeks	26 (21.8%)	23 (18.5%)	49
> 28 weeks	73 (61.4%)	72 (58.9%)	146
Total	119	124	243

TABLE IV
CERTAINTY OF DATES

Dates	⩽ = 18 yrs	> 18 yrs	Total
Certain	60 (51%)	73 (59%)	133
Uncertain	59 (49%)	51 (41%)	110
Total	119	124	243

Complications of pregnancy

Table V shows the frequency of pregnancy complications in both groups as well as in different ethnic groups in the individual group. There was a noticeable increase in complications of anaemia, antepartum haemorrhage, premature labour and postpartum haemorrhage in the adolescents whereas in the older age group, an increase in incidence of urinary tract infection, hypertension and threatened abortion was evident. When broken up into the different ethnic groups, the Indians appeared to be more prone to develop anaemia in both groups, whereas there was no definite pattern of affinity towards the different ethnic groups when comparing the other complications.

TABLE V
MATERNAL COMPLICATIONS OF PREGNANCY ACCORDING TO AGE AND ETHNIC GROUPS

⩽ 18 yrs	Chinese	Malay	Indian	Others	Total
Nil	42(63%)	25(64%)	7(54%)	0	74(62%)
Anaemia	15(23%)	6(15%)	3(23%)	0	24(20%)
APH	0	2(5%)	2(15%)	0	4(3%)
PPH	4(6%)	3(8%)	0	0	7(6%)
UTI	1(2%)	1(3%)	0	0	2(2%)
Hypt	3(5%)	0	0	0	3(3%)
Prem. Labour	4(6%)	6(15%)	2(15%)	0	12(10%)
Thr. Abortion	1(2%)	0	0	0	1(1%)

> 18 yrs	Chinese	Malay	Indian	Others	Total
Nil	37(65%)	25(61%)	13(54%)	1(50%)	76(61%)
Anaemia	9(16%)	7(17%)	5(21%)	1(50%)	22(18%)
APH	1(2%)	0	0	0	1(1%)
PPH	1(2%)	0	1(4%)	0	2(2%)
UTI	1(2%)	1(2%)	3(13%)	0	5(4%)
Hypt	6(11%)	5(12%)	3(13%)	0	14(11%)
Prem Labour	2(4%)	3(7%)	1(4%)	0	6(5%)
Thr. Abortion	2(4%)	0	0	0	2(2%)

APH = antepartum haemorrhage
PPH = postpartum haemorrhage
UTI = urinary tract infection
HYPT = hypertension
Prem Labour = premature labour
Thr. Abortion = threatened abortion

Delivery

The method of delivery was compared in the two age groups (Table VI). Significantly, the adolescents had a lower Caesarian section rate (2.5%) than the older women (12.1%). More of the adolescents had spontaneous vaginal deliveries also.

TABLE VI
MODE OF DELIVERY

	⩽ 18 yrs	> 18 yrs	Total
Caesarian section	3(2.5%)	15(12.1%)	18(7.4%)
Forceps	11(9.2%)	12(9.7%)	23(9.5%)
Breech	5(4.2%)	5(4%)	10(4.1%)
Spontaneous	0	0	0
Normal delivery	100(84%)	92(74.2%)	192(79%)
Total	119	124	243

Perinatal Mortality

Two deaths occurred in the adolescents, giving a rate of 16.8/1000 births and one death occurred in the older age group, giving a rate of 8.1/1000 births. In the adolescent group, the two deaths occurred in the Malay and Indian ethnic groups, whereas in the older age group the solitary perinatal death was a Malay child.

The number of babies born who were admitted to the Nursery in the two groups was used as one of the parameters to assess neonatal morbidity.

Indications for admission include :

1) Intrauterine growth retardation (IUGR)
2) Respiratory distress syndrome (RDS)
3) Congenital heart disease
4) Asphyxia neonatorum
5) Prematurity
6) Infection
7) Hyperbilirubinaemia

Table VII shows the distribution of the cases admitted from the various groups. In the adolescent group, the highest number of admissions came from the Indian community, while the Malays were predominant in the older age group. Taking into consideration the total number of admissions of the 2 study populations, it can be seen that the Chinese community has the least number of babies admitted to the Nursery.

Coupled with the fact that none of the perinatal deaths were from the Chinese community, it appears that the Malays and Indians were the higher risk women.

Taking the total admissions of the two age groups, it could be seen that the older age group had a higher percentage of babies admitted (19.4%), as compared to the adolescent group (9.2%).

TABLE VII

DISTRIBUTION OF CASES ADMITTED TO NURSERY

Ethnic group	⩽ 18 yrs	> 18 yrs	Total
Chinese	7 (10.4%)	10(17.5%)	17(13.7%)
Malay	1 (2.6%)	10(24.4%)	11(13.8%)
Indian	3 (23 %)	4(16.7%)	7(18.9%)
Others	0	0	0
Total	11 (9.2%)	24(19.4%)	35(14.4%)

Future of the babies

Table VIII shows the outcome of the babies delivered. They were either kept by their parents, given up for adoption or the mothers were not sure what to do with them at the time of discharge from hospital.

TABLE VIII

FUTURE OF THE BABIES DELIVERED

⩽ 18 yrs	Chinese	Malay	Indian	Others	Total
Adoption	18(27%)	15(39%)	4(33%)	0	37(32%)
Mother keeping	40(60%)	14(37%)	7(58%)	0	61(52%)
Not sure	9(13%)	9(24%)	1(9%)	0	19(16%)
Total	67	38	12	0	117

> 18 yrs	Chinese	Malay	Indian	Others	Total
Adoption	17(30%)	18(44%)	12(50%)	0	47(39%)
Mother keeping	33(58%)	16(39%)	10(42%)	2	61(49%)
Not sure	7(12%)	6(15%)	2(8%)	0	15(12%)
Total	57	40	24	2	123

Fifty-two percent of the adolescent group and 49 percent of the older age group wanted to keep their babies, whereas 32 % of the adolescent group and 39 % of the older women gave up their babies for adoption. More of the Chinese of both groups wanted to keep their babies than the other two ethnic groups.

CONCLUSION

As we noted earlier, at the start of this study, most investigators have reported a higher incidence of complications associated with pregnancy involving young patients (5). However, there has been little recent information published to judge if this statement, based on information collected some 15 to 20 years ago, is still applicable. It is likely that the increased frequency of pregnancy in adolescents and changes in obstetric practice have affected the outcome of adolescent pregnancy. Furthermore, many surveys were limited to patients less than 16 years of age, and some series were too small to be conclusive (6).

A review of our statistics does not demonstrate that the adolescent unwed mother is at higher risk than the older women of similar marital status. The only positive data which might suggest a more hazardous pregnancy was the high perintal mortality rate of 16.8/1000 births as compared to 8.1/1000 births of the older women. A similar result was also obtained in other studies (7). A larger longitudinal study is required to interpret these figures.

Singapore is a small country where the population is not distributed sparsely and over a wide area of land. Maternal and Child Health Clinics are within easy reach of every expectant mother. The vast majority of our adolescent mothers received antenatal care and the majority were seen by the second trimester. This is in contrast to most studies in which a much higher number are seen only in labour or with very few antenatal visits.

It has been shown that pre-eclampsia was a common problem in adolescent pregnancy with an incidence of up to 36 % (8). In contrast, we found a comparatively low occurrence of any type of hypertension in adolescent pregnancy and a slightly higher rate in the older age group. There was an increase in the number of adolescents with premature labour in our series as compared to the older women. This was also reported by Aznar and Bennett in 1961 (5). Of the 12 cases delivered prematurely, only two were assessed to be premature clinically by the paediatrician after delivery, and both babies were discharged with no adverse sequelae with their mothers after observation in the Nursery.

The outcome of labour was favourable in the adolescent mothers with 84% spontaneous deliveries. The Caesarian rate of 2.5 % compares very favourably with that of the older mothers as was also demonstrated in the study by Israel and Woutersz in 1963 (9). The Caesarian rate in Toa Payoh Hospital for all mothers, is usually in the region of 12 %. There was no increase in perinatal complications to suggest that the interests of the fetus were jeopardised in an attempt to achieve vaginal delivery.

There appears to be a trend for the mothers in both age groups to keep their babies instead of giving them up for adoption (10). This is a cause of concern, as a study done on a London population by Underhill and Atkins in 1978 (2) of such infants of single parent families showed them to be at particular risk of suffering physical or emotional retardation. When comparison was made among the different ethnic groups, the Indians and Malays generally appeared to develop more maternal complications of pregnancy than the Chinese in both age groups.

There was also a higher percentage of Indian and Malay babies admitted to the Nursery. This could indicate an increase in neonatal morbidity among these babies, which would reflect the lower socio-economic status of these two ethnic groups in this country. As far as the

future of the babies was concerned, the Chinese seemed to be more keen to keep their babies than the other two major ethnic groups.

Our findings thus showed that adolescent pregnancies are no more hazardous than pregnancies in older women, and the majority will enjoy a complication-free pregnancy.

REFERENCES

1. Derek LJ. Human reproduction and society. 1st ed. Faber and Faber Ltd, London, 1974:383-99.
2. Underhill R, Atkins N:Schoolgirl pregnancies. J Maternal Child Health 1978;3:404-9.
3. Leading Article: Suicide risk in teenage pregnancy. Br Med J 1971;2:602.
4. Dwyer JF: Teenage pregnancy. Am J Obstet Gynecol 1974;118:373-6.
5. Aznar R, Bennett AE: Pregnancy in the adolescent girl. Am J Obstet Gynecol 1961;81:934-40.
6. Utian WH: Obstetrical implications of pregnancy in primigravidae aged 16 years or less. Br Med J 1967;2:734-6.
7. McIlwaine GM, Howat RCL, Dunn F, Macnaughton MC: Scotland 1977, Perinatal Mortality Survey, University of Glasgow, Glasgow 1979;10-20.
8. Lewis BV, Nash PJ: Pregnancy in patients under 16 years. Br Med J 1967;2:733-4.
9. Israel SL, Woutersz TB: Teenage Obstetrics. Am J Obstet Gynecol 1963;85:659.
10. WHO: Pregnancy and abortion in Adolescence - Technical Report Series No. 5833, Geneva. 1975:8-19.