

PA-1170-1061

HOSPITAL C.U.E.M.

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Center 430

Study 903

February 1981

International Fertility Research Program

Research Triangle Park, NC 27709

USA

I. INTRODUCTION

Data for 1020 women delivering at the Hospital C.U.E.M. during the period from February 1, 1980 to October 7, 1980 were received by the IFRP as of December 31, 1980. A total of 1041 infants were delivered, including 21 sets of twins. There were five maternal deaths and 105 perinatal deaths before discharge. The rate of maternal deaths was 5.45 per 1000 live births, the stillbirth rate was 62.02 per 1000 deliveries and the death rate for newborns was 42.36. This gives a combined mortality rate of 101.74 deaths per 1000 deliveries. It must be noted that these rates reflect mortality only for the time the patients spent in the hospital and thus may appear lower than they actually are.

II. PATIENT CHARACTERISTICS

Sociodemographic Characteristics (See Table I)

The average age of women delivering at the Hospital C.U.E.M. during this period was 26.6 years. Women under 20 years of age made up 19.4% of the patients and women 35 years and older accounted for 15.4%. Most of the women (96.5%) were currently married. Two percent of the patients had never been married and 1.3% were in consensual unions. The average age of marriage for these patients was 18.2 years.

Over 80% of the women delivering at this hospital had no formal education. Of those women who had some schooling, half had less than three years. Most (94.4%) of the patients lived in rural areas. Almost all (99.3%) were private patients and approximately half (51.1%) were booked at their own choice. A large proportion (47.2%) of the patients were admitted as emergency cases.

Reproductive History (See Table II)

There was a large number of high-parity women delivering at this center. The average number of previous live births was 2.5, with 28.1% of the patients having had four or more live births, 39.5% one to three and 32.4% no prior live births. Women delivering their first infant had a mean age of 20.5 years, while women delivering their fifth or higher birth-order infant averaged 36.0 years. By the time a woman reached 40 years of age, she had delivered, on the average, 8.1 live births.

More than 13% of the patients reported one or more previous stillbirths, 12.9% had had at least one spontaneous abortion (there were no induced abortions reported) and 28.5% reported at least one infant death. Only 3.4% of the patients at this center had previously been delivered by cesarean section.

Approximately 28% of the patients delivered at the Hospital C.U.E.M. have never been pregnant. Of those women who have been pregnant, 61.8% reported that their last pregnancy resulted in a live infant that was still living at the time of the present delivery; 22.4% delivered a live infant that later died; 7.8% reported a stillbirth; and 6.9% said they had a spontaneous abortion.

Overall, women delivering at this center have a spontaneous abortion rate of 63 per 1000 pregnancies, a stillbirth rate of 68, and a live-birth rate of 869. Their infant mortality rate is 187.5 deaths per 1000 live births. These rates include the current delivery.

The average interval between the last delivery and the current one was 30.9 months. Less than six percent of the patients delivered within one

year of their last pregnancy. This is a fairly long interval, particularly since very few of the women used contraceptives prior to the current pregnancy. The long interval between pregnancies may be due, in part, to lactation amenorrhea. More than 94% of the women who had previously delivered a live birth breast-fed their last infant. Half of these women breast-fed their infant for more than 16 months.

The interval between pregnancies varied greatly by the outcome of the last pregnancy and the duration of breast-feeding of the last live birth. Women whose last pregnancy ended in a spontaneous abortion waited an average of 18.6 months before giving birth again. Those who delivered a stillbirth had their next delivery approximately 21.7 months later. Women whose infant died after birth waited an average of 27.6 months, while women whose infant was alive at the time of the current delivery had given birth an average of 34.8 months earlier (see Figure 1).

Women who breast-fed their last live birth had an average interval between births of 31.7 months, while women who did not breast-feed their infant averaged 22.9 months between deliveries. The interval varied a great deal by duration of breast-feeding. Those women who breast-fed for less than six months averaged 26.4 months between births; those who breast-fed for six months to one year averaged 30.5 months; and those who breast-fed their infants for more than one year delivered an average of 35.7 months after their previous birth (see Figure 2). The differences in these intervals may be due to factors associated with breast-feeding or related to the higher probability of an infant death associated with shorter periods of breast-feeding and an increased desire to replace the infant as quickly as possible.

III. ANTENATAL STATUS

More than 87% of the women delivering in this hospital were seen there at least once before admission for delivery (see Table III). Nearly 15% made seven or more antenatal visits; the average number of antenatal visits was 3.7. Only 21% of the patients had no antenatal condition reported. The most frequent problems were infectious or parasitic diseases (39.3%) and blood disorders (25.6%). Only 26% of the patients had normal thyroid conditions. Forty percent had palpable thyroids and an additional 29% had a visible condition. Almost four percent of the patients showed some sign of cretinism. More than 30% of these women were given lipiodol during their pregnancy, most often during the third trimester.

There were no differences in age, level of education, parity or previous pregnancy outcome between women who did or did not receive lipiodol during their pregnancy. However, patients with normal thyroids were more likely to be given lipiodol than those with thyroid problems. Almost 40% of the women with a normal thyroid condition received lipiodol; 30.9% of the women with palpable thyroids, 29.7% of those with visible thyroids and only 18.9% of the patients showing signs of cretinism received the drug.

Hemoglobin at admission for delivery was known for 40% of the patients. Of those women, a fourth were anemic (less than 10 grams).

IV. LABOR AND DELIVERY

Almost two thirds of the patients had spontaneous rupture of membranes, with 13.1% occurring more than 24 hours before delivery. Five percent of the patients had their membranes ruptured during cesarean section

(see Table IV). Most of the women had spontaneous labor (98.7%), 29.2% of which was augmented either by artificial rupture of the membranes or drugs. Approximately 3% of the women delivering at this hospital had a breech presentation and an additional 9% had some other type of malpresentation during labor. Nine percent of the patients were delivered by cesarean section and 81.3% delivered spontaneously. These rates are very similar to rates seen in other centers participating in the Maternity Record study.

Almost 60% of the patients showing signs of cretinism were delivered by cesarean section compared to approximately seven percent of the other patients.

The majority of the patients received neither an anesthetic (70.9%) nor an episiotomy (83.7%).

Almost eight percent of the patients sustained some injury of labor and/or delivery. Again, this is about average. Just under a third (30.6%) had complications, the most frequent being hemorrhage (8.7%) and prolonged or obstructed labor (6.7%). This is a higher rate of complications than is seen in other centers. The average proportion of patients in other centers with some complication of labor and/or delivery is 17.4%. The higher complication rate is due almost entirely to hemorrhage (the average was 0.9%) and "other" problems (average of 2.5% compared to 9.3% in this center).

Patients averaged 3.4 nights in the hospital postdelivery, with 16.8% of them staying for more than one week.

V. OUTCOME

A total of 468 girls and 573 boys were delivered, which gives a sex ratio of 122.4. The 21 sets of twins represent a ratio of one twin delivery per 49 deliveries. This is a higher number of twin deliveries than the average of one per 30 deliveries, but it is probably due to the more difficult twin pregnancies being delivered in the hospital rather than at home, as well as a higher rate of twinning in African populations.

The average duration of pregnancy was 38.7 weeks, with 19.1% of the women being delivered before 37 weeks gestation. However, there was a great deal of heaping of gestational age at 40 weeks, the "normal" duration. Almost half of the pregnancies were recorded as being 40 weeks compared to an expected 26%. The mean birth weight of single deliveries was 2750 grams. Twenty-seven percent of the infants weighed less than 2500 grams. About 60% of the cretin women had infants weighing less than 2500 grams while approximately 25% of the other women delivered low birth weight babies. The mean birth weight of infants born to cretin patients was 2336 grams. Mean birth weight for the other infants was 2750 grams. There was very little difference in either mean birth weight or the proportion of infants under 2500 grams between women with normal, palpable and visible thyroid conditions. There was about a week's difference in duration of pregnancy between cretin women and other patients. Cretins averaged 37.5 weeks' duration while the other women had pregnancies lasting an average of 38.8 weeks. The proportion of pregnancies of less than 37 weeks' duration ranged from 16.7% for normal women to 32.4% for cretins. Because of the heaping problem, the information on pregnancy length should be considered with caution.

Mean Apgar scores were 6.4 at one minute and 7.1 at five minutes. Average length of the newborns was 48.1 cm and mean head circumference was 34.1 cm. There was a high degree of correlation between length and head circumference, which is to be expected.

Almost one third of the infants experienced some type of fetal or neonatal problem, the most common being fetal distress during labor (14.1%). Infants were discharged alive in 89.1% of the cases. Approximately seven percent of all births were stillbirths and four percent of the infants died after birth. Again, cretins had the worst pregnancy outcome. Almost 38% of their infants suffered from some problem, and nearly 19% were not discharged alive.

Patients who received lipiodol at some time during their pregnancy had pregnancies of longer duration, larger infants and fewer infant problems or deaths than those women who did not receive the drug (see Table VI). The lipiodol improved pregnancy outcome (measured by gestation, birth weight, size of infant, neonatal condition and fetal/newborn death) for women with normal, palpable and visible thyroid conditions. In cretin patients, however, there was no difference in outcome whether they did or did not receive lipiodol.

Twenty-one percent of the patients had some puerperal problem, the most common being fever (12.8%). Puerperal problems were reported more frequently for cretin patients (59.5%) than for other patients (19.1%). The high rate of problems may be attributed, in part, to the careful observation of patients and the meticulous recording of the data.

VI. MATERNAL MORTALITY

Five of the patients admitted for delivery died before discharge from the hospital.

A 38-year-old grandmultipara was admitted in a state of shock with a dead fetus after being in labor in her village for more than three days. She experienced a uterine rupture and a laparotomy was performed. The cause of death was listed as hemorrhagic shock due to uterine rupture. Contributing conditions were prolonged labor, grand multiparity and malpresentation.

A 22-year-old nulliparous cretin with a large goiter and evident mental retardation was admitted in labor. She had feto-pelvic disproportion and was delivered by cesarean section. The cause of death was recorded as absolute cardiac decompensation due to dehydration, severe anemia and cardiac failure. The infant was discharged alive.

A 20-year-old woman with two previous live births was admitted in a pre-trauma state with an extended abdomen, no uterine contractions and no fetal heart sounds. She had been in labor in her village for two days. A uterine rupture and hemorrhage was discovered and the patient was delivered by laparotomy. The cause of death was listed as infectious trauma and acute heart failure due to rupture of the uterus, prolonged hemorrhage, fever, acute congestive cardiac decompensation and convulsion. Contributing conditions were prolonged labor, death of fetus in utero, undernourishment, dental carries, TBA manipulation to increase uterine contractions and physical exhaustion.

A patient of unknown age with one previous live birth was admitted after two days of labor in her village. She had a frontal presentation, complete dilatation, and no fetal heart sounds. During an embryotomy she received a long cervical tear that was repaired immediately. Fifteen days later she experienced hemorrhagic episodes and was treated with a laparotomy and hysterectomy. The cause of death was severe anemia after hemorrhage due to the cervical tear in the long ligament. Contributing conditions were long duration of labor, deficient nutritional status, fetal death in utero and a vasico-vaginal fistula.

A 25-year-old nulliparous woman was admitted in a subfebrile condition more than 29 hours after the membranes had ruptured with the fetal head engaged, 6 cm dilation and weak contractions. Labor stopped and a symphysiotomy was performed followed by a cesarean section. The patient died of septic shock due to infection of the amniotic fluid and the operation wound, loosening of sutures and peritonitis followed by septicemia. Contributing conditions were the patient's deficient nutritional state, anemia, prolonged labor and premature rupture of membranes. The child was discharged in good health with no infection.

VII. FAMILY PLANNING

Contraceptive use prior to pregnancy was very low among this group of women (see Table VII). Ninety-eight percent of the patients used no method before conception; 1.5% used orals; and 0.5% used IUDs. However, a much larger proportion of the patients (65.9%) planned to contracept after delivery. Approximately one third (34.0%) planned to use IUDs; 21.6% orals; 8.8% female sterilization; and 1.6% some other method. Planned

contraception varied a great deal by age of the patient, with older women being more likely to accept contraception, particularly sterilization, than younger woman (see Figure 3). This is due to the likelihood that older women are closer to achieving their desired family size (see Figure 4). Nearly 82% of the women over age 45 want no additional children. The average age and parity of women who want no more children are 34.5 years and 5.7, respectively.

The mean total desired family size of these women is 6.1 children. There is very little variation in this desire by age of the patient. Women under 20 want an average of 5.9 children, while women over 40 want 6.5 children, on the average. The proportion of women who plan some sort of contraception increases as the number of additional children wanted decreases (from 41.8% of women who want eight or more additional children to 95.6% of those who want no additional children). It seems as though some, but not all, women plan to use contraception for birth spacing purposes. In all, 13.8% of the patients want no additional children. Sterilization was the planned method of contraception for 65.4% of them, and 88.8% of the woman desiring sterilization actually were sterilized before discharge.

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TABLE I

Sociodemographic Characteristics
Hospital C.U.E.M.
Karawa, Zaire

Maternal age (%)	
<20	19.4
20-34	65.2
35+	15.4
Mean age (years)	26.6
Marital status (%)	
Never married	2.0
Currently married	96.5
Consensual union	1.3
Other	0.3
Mean age at marriage	18.2
Education (%)	
None	80.4
1-4	7.8
5-8	9.4
9-12	2.2
13+	0.3
Residence (%)	
Rural	94.4
Urban	5.6
Registration status (%)	
Booked, patient's choice	51.1
Emergency	47.2
Other	1.7
Patient's status (%)	
Private	99.3
Non-private	0.7

TABLE II

Reproductive History
Hospital C.U.E.M.
Karawa, Zaire

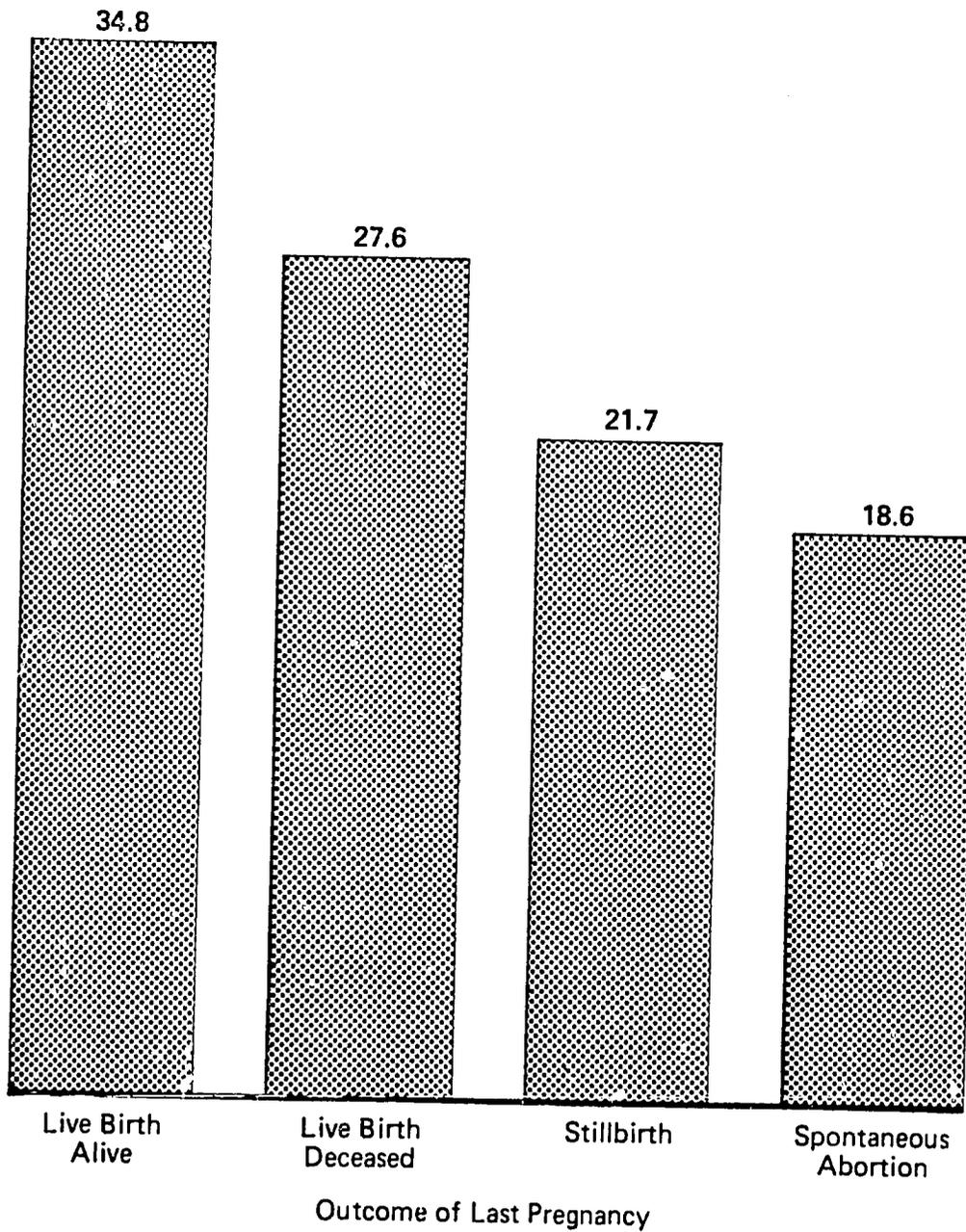
Previous live births	
0	32.4
1-3	39.5
4+	28.1
Mean	2.5
Stillbirths	
0	86.3
1	9.9
2	2.6
3+	1.2
Spontaneous abortions	
0	87.1
1	9.2
2	2.4
3+	1.3
Infant deaths	
0	71.5
1	17.2
2	6.8
3+	4.5
Previous cesarean sections	
0	96.6
1	2.8
2	0.4
3+	0.2
Living children	
0	39.6
1-3	42.1
4+	18.3
Mean	1.7
Outcome of last pregnancy	
Live birth, living	61.8
Live birth, deceased	22.4
Stillbirth	7.8
Spontaneous abortion	6.9

TABLE II (Cont'd)

Reproductive History
Hospital C.U.E.M.
Karawa, Zaire

Interval between deliveries (years)	
<1	5.7
1-2	31.1
2-4	55.2
4+	8.0
Mean (months)	30.9
Breast-feeding of last live birth (%)	
None	5.8
<6	10.6
6-11	21.8
12-17	23.9
18+	38.0
Median (months)	15.7

Figure 1. Birth Interval in Months by Outcome of Last Pregnancy
Hospital C.U.E.M., Karawa, Zaire



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Figure 2. Birth Interval in Months by Duration of Breastfeeding
Hospital C.U.E.M., Darawa, Zaire

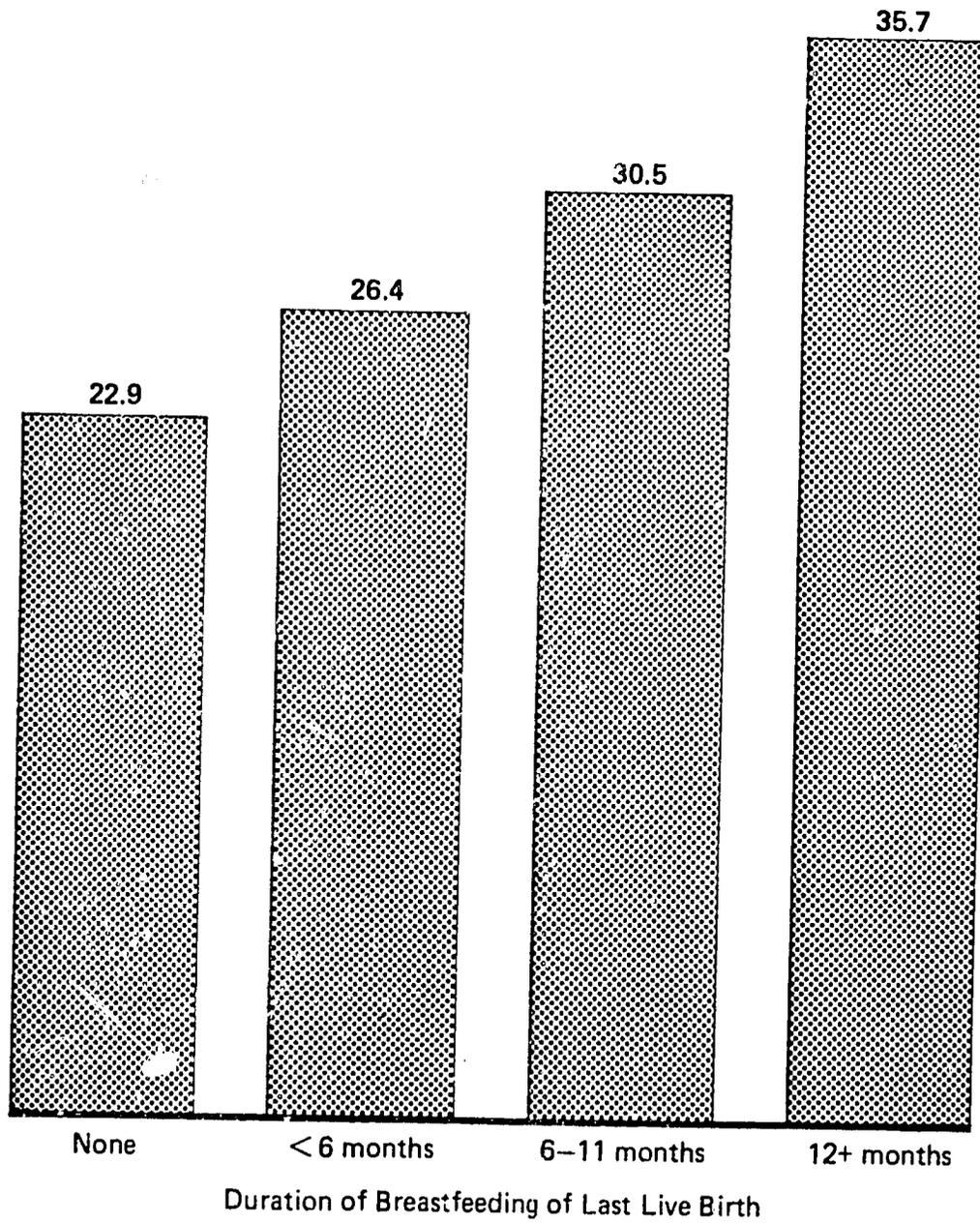


TABLE III

Antenatal Status
Hospital C.U.E.M.
Karawa, Zaire

Number of antenatal visits (%)	
None	12.7
7+	14.6
Mean	3.7
Primary antenatal condition (%)	
None reported	21.0
Blood disorders	25.6
Infectious/parasitic diseases	39.3
Other	14.2
Hemoglobin at admission (%)	
<10 grams	25.2
10+ grams	74.8
Mean (grams)	10.3
Trimester of pregnancy when lipiodol given (%)	
Not given	67.8
1st	0.1
2nd	4.6
3rd	27.5
Maternal thyroid condition (%)	
Normal	26.5
Palpable	40.5
Visible	29.4
Sign of cretinism	3.6

TABLE IV

Labor and Delivery
Hospital C.U.E.M.
Karawa, Zaire

Rupture of membranes (%)	
Spontaneous	61.1
Percent 24+ hours	(13.1)
Artificial	34.0
During cesarean section	4.9
Type of labor (%)	
Spontaneous	98.7
Percent augmented	(29.2)
Induced	0.6
No labor	0.7
Type of presentation (%)	
Normal	88.1
Breech	3.1
Other malpresentation	8.8
Type of anesthetic (%)	
None	70.9
Local only	20.1
Other	9.0
Episiotomy (%)	
None	83.7
Midline	3.3
Mediolateral	13.1
Type of delivery (%)	
Spontaneous	81.3
Spontaneous/assisted	4.6
Cesarean section	9.0
Other	5.1
Some injury of labor/delivery (%)	7.6
Some complication of labor/delivery (%)	30.6
Hemorrhage	8.7
Prolonged/obstructed labor	6.7
Other	15.2
Hospitalization after delivery (%)	
8+	16.8
Mean (nights)	3.4

TABLE V

Pregnancy Outcome
Hospital C.U.E.M.
Karawa, Zaire

Mean weeks' gestation	38.7
Percent under 37 weeks	19.1
Mean birth weight	2750
Percent under 2500 grams	26.6
Mean Apgar scores	
1 minute	6.4
5 minutes	7.1
Some fetal/neonatal problem (%)	31.1
Status of newborn (%)	
Stillbirth	6.6
Neonatal death	4.2
Discharged alive	89.1
Some puerperal problem (%)	20.7

TABLE VI

Means for selected birth outcomes by
administration of lipiodol

	No lipiodol	Some lipiodol
Gestation (weeks)	38.4	39.4
Birth weight (grams)	2679	2855
Length (cm)	47.8	48.8
Head circumference (cm)	34.0	34.3

TABLE VII

Family Planning Characteristics
Hospital C.U.E.M.
Karawa, Zaire

Some contraception before pregnancy (%)	2.0
Some contraception after delivery (%)	65.9
IUD	34.0
Orals/injectables	21.6
Female sterilization	8.8
Other	35.6
Percent desiring no additional children	13.8
Planning sterilization	65.4
Actually sterilized	88.8

**Figure 3. Percent Women Planning Sterilization or Other Contraception
by Age of Patient
Hospital C.U.E.M., Karawa, Zaire**

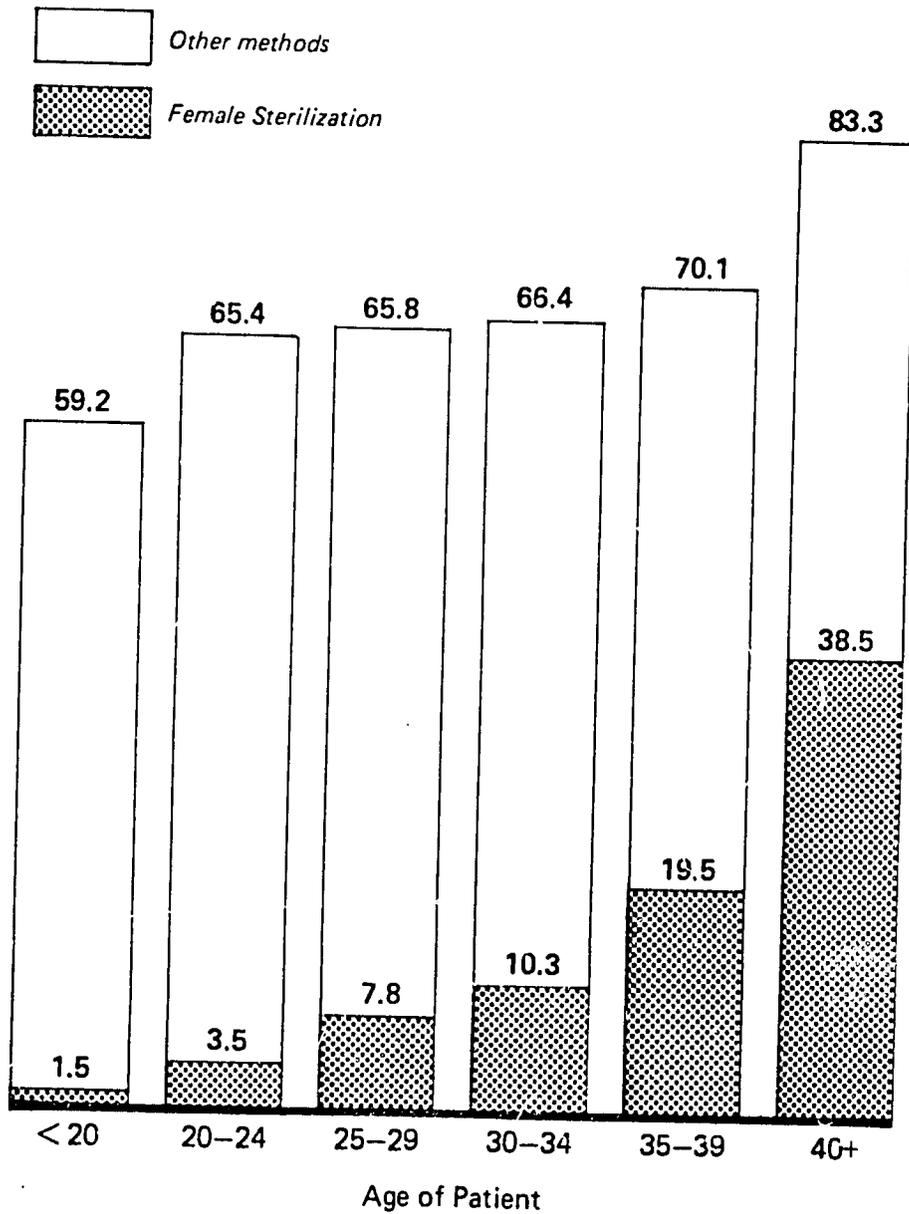
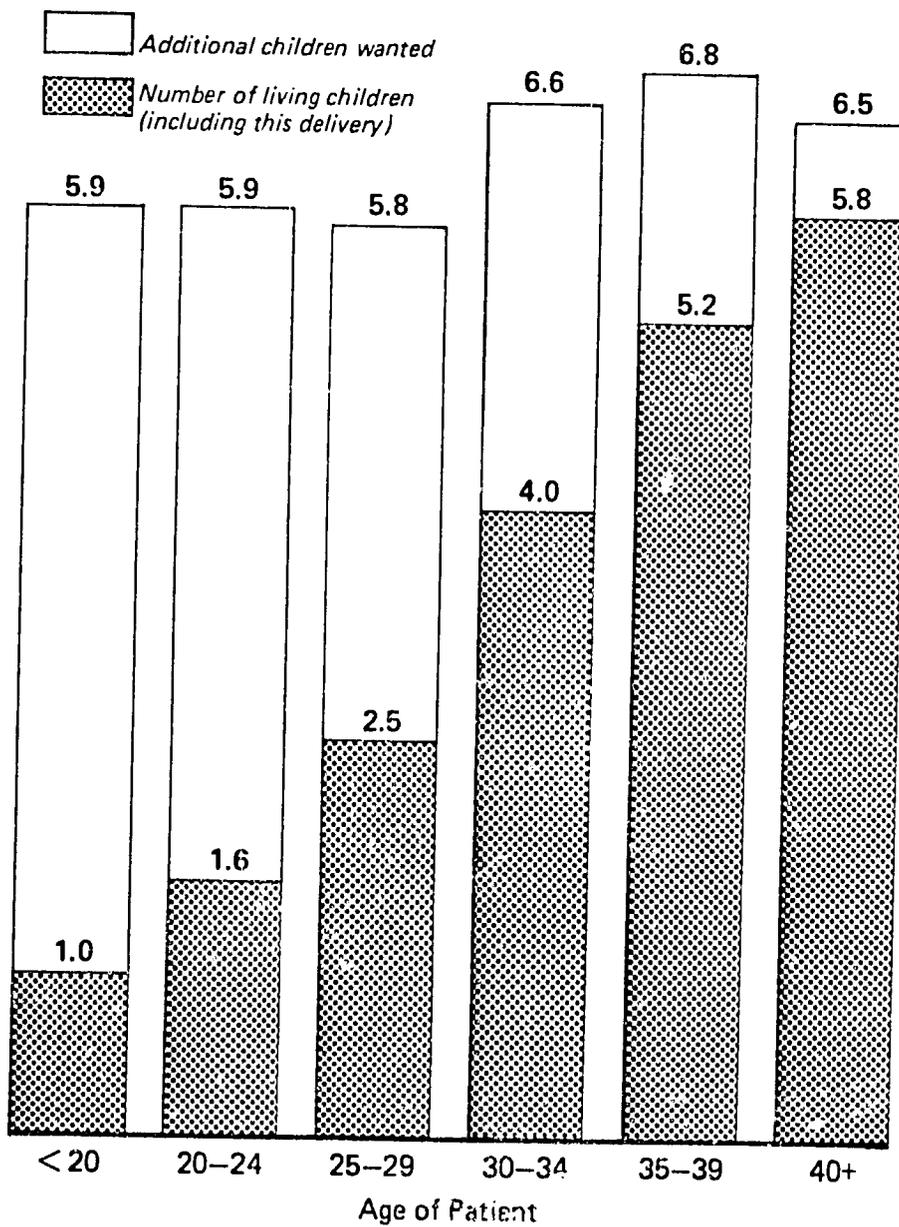


Figure 4. Number of Living Children and Desired Family Size by Age of Patient
Hospital C.U.E.M., Karawa, Zaire



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