Home confinement: the positive results in Holland

S. M. I. DAMSTRA-WIJMENGA, MD

General Physician, Groningen; Consulting Physician, SNOV (Northern Orthopaedagogic Facilities Foundation)

SUMMARY. This study was an objective evaluation of the outcome of home confinement, which is still common in Holland, compared with delivery in hospital. To this end, 1,692 women in Groningen were interviewed three weeks after confinement to find out how their pregnancy, delivery and childbed period had progressed according to the place of confinement, and to obtain facts about the morbidity of their babies.

Among women who had opted for home confinement (if allowed) significantly fewer complications occurred during pregnancy, delivery or puerperium than among those who had their babies in hospital. Morbidity was also lower among babies born at home. The study suggests that it is a responsible decision for a normal healthy woman given the right kind of antenatal supervision to have her baby at home with the least risk of complications.

Introduction

HOLLAND is the only country in western Europe where home confinement is still common: every year, more than one third of all babies are born at home. Nevertheless, over the past few decades there has been a steady decrease in the actual number of children born at home. This is due, on the one hand, to a decline in the birth rate—from 21.1 per 1,000 in 1960 to 12.5 per 1,000 in 1981.[1] On the other hand it is a result of changing social relations and ideas about obstetric care, which caused a drop also in the percentage of home confinements—from 72 per cent in 1960 to 34.7 per cent in 1981.[1] The various media, especially women's magazines, have had (and still have) an important role in this process. By advocating hospital confinement as 'safer' they have had an influence on public opinion. That is why many inhabitants of the larger towns, with hospitals within easy reach, are becoming less likely to opt for delivery in their own homes. In 1979, in towns of over 100,000 people, 16.7 per cent of all childbirths took place at home, whereas in towns with less than 5,000 inhabitants the percentage was 45.6 per cent.[1]

For a normal healthy woman after a pregnancy without complications, it is questionable whether a hospital is, in fact, the 'safer' place for having the baby. It should be realized that when a woman decides to have her baby in an environment designed to cope with childbirths in which there is a certain degree of risk, there is a good chance that the hospital facilities will actually be used on her,[2] thus imposing a risk of iatrogenic damage.

To find out whether the location of childbirth by normal healthy women has any impact on the outcome of the confinement, 1,692 female inhabitants of the town of Groningen who all gave birth in 1981 were questioned on the course of their pregnancy, delivery and puerperium. The morbidity of their babies was also part of the study.

Obstetric care in Holland

Obstetric care in Holland is rather different from the systems in use in other western European countries. It is characterized by selection during antenatal care.[3] When a woman becomes pregnant, she will contact either her family doctor, a midwife or an obstetrician, depending on local conditions (Is there a midwife in her area? Is her general practitioner still prepared to do a delivery?) and on the rules laid down by the regional health insurance funds and private insurance companies.

From a list of 'medical indications'[4] that is used almost universally although it is not mandatory, a first selection is made. In about 15 per cent of pregnancies there will be a 'primary medical indication', which means that the woman in question will have to deliver in hospital under the supervision of an obstetrician.[5] If there is no 'primary medical indication', it is left to the mother-to-be to decide where she wants to have her baby—at home or in hospital. This choice is also influenced by external factors: women who live in large towns opt for home confinement less frequently (approximately 20 per cent) than women who live in the country (approximately 60 per cent). Furthermore, social and financial circumstances influence the decision.

If the woman decides to go to a hospital she can register for confinement followed either by hospitalization for 24 hours or for seven days. The demand for confinement in hospital followed by 24 hours stay is on the increase: whereas in 1970 only 2.5 per cent of births took place on this basis, by 1979 the figure had risen to 20 per cent. This is because in Holland puerperium in hospital without complications is charged at normal daily rates, and since September 1980 insurance schemes have ceased to provide cover for this type of hospitalization. The fact that parents now have to pay the hospital bill themselves has contributed greatly to the upward trend in short hospitalization for confinement at the expense of the seven days stay. Only in towns with an obstetric training centre (usually part of a medical school) can mothers spend their puerperium in the maternity clinic of that centre at a cost no higher than the cost of home confinement.

If in the course of the pregnancy one of the complications listed by Kloosterman[4] arises, the woman is usually referred to an obstetrician. In that case there is a 'secondary medical indication', and even for the woman who had chosen to have her baby at home this means confinement in hospital; the cost will then be borne by insurance. Thanks to the selection system customary in Holland, childbirth which involves some degree of risk is given optimum attention.

The system of home confinement or hospital delivery plus a stay of 24 hours pivots on the system of home maternity nursing that is usual in Holland. In principle, a specially trained nurse is present during the confinement to assist both the obstetric professional and the woman having the baby. After the delivery, the nurse not only provides professional care of mother and infant in their home for an average of seven days, she also performs all normal household duties and looks after any older children. Alternatively, a specially trained nurse comes twice daily to look after the mother and the infant, while relatives and neighbours run the home and look after the other children in the family. About 90 per cent of the mothers who have their babies at home or in hospital where they stay for 24 hours opt for one of these types of care.

Method

In this study the outcome of deliveries of 1,692 non-selected women were examined with regard to the location where they wanted to give birth—at home or in hospital.

The women were all inhabitants of Groningen, a town of more than 163,000 people and covering an area of nearly 20,750 acres. Groningen comprises a large town centre, two newly developed peripheral districts at some distance from the town centre, two annexed neighbouring villages, and some countryside; it can be said that all types of residential environment that might have had an impact on the choice of confinement location[6] were represented in the sample.

The mothers-to-be were more or less free to choose whichever type of obstetric assistance they desired: their family doctor, a midwife or an intern from the academic hospital attached to Groningen University Medical School. The fairly wide range of people available in the town who are able to render obstetric assistance ensures a certain variety of views on what guidance should be given during pregnancy and delivery. These different viewpoints were taken into account when preparing the list of references for this article. (In a previous report,[7] the results achieved by the various types of obstetric professionals were also compared.)

The mothers in the study were, on average, interviewed three weeks after parturition. During this interview they were asked a number of questions related to their pregnancy, delivery, puerperium and the condition of the infant. Answers were used to fill out questionnaires drawn up beforehand. Analysis was mostly by computer processing methods and was based on the assumption that the mothers had been free to choose the location of confinement. The starting point of the interview and of the analysis were the questions:

1. 'When you first observed you were pregnant, where did you intend to have your confinement take place?'
2. 'Where did your confinement take place in reality? If not at the place of option, which circumstances were responsible for that?'

For evaluation purposes, the mothers were divided into four categories:

a) mothers who had opted for home confinement;

b) those who had opted for hospital confinement followed by 24 hours stay;

c) those who had opted for hospital confinement followed by a stay of seven days;

d) mothers who had to be closely supervised by an obstetrician from the start of pregnancy and had to deliver in hospital owing to an increased risk ('primary medical indication').

The mothers in groups a), b) and c) were considered to have been 'low risk' pregnant women. They were compared for the number of referrals to an obstetrician.

The number of babies born without intervention, who had been hospitalized to receive special care (in group a–c), were also compared.

Results

In the town of Groningen in 1981, 1,720 viable babies were born to 1,703 mothers. In addition, there were 10 stillbirths and two deaths. In home confinements, no infants were stillborn or died on their way to hospital. Since legislation on protection of privacy forbids publication of data on stillbirths, their mothers were not involved in this study. None of the mothers died in childbirth. Of the total number of 1,703 women, 1,692 took part in the survey—a response rate of 99.3 per cent. The age distribution of the mothers according to parity is shown in Table 1. The age of the mothers was calculated from the year they were born and the year in which the infants were born (1981).

Obstetric help chosen by the women

The women who, when pregnant, had been selected for a 'primary medical indication' and referred to an obstetrician to assist at their confinement did not have any other option. These women make up a separate group, which will not be considered any further.

Table 2 shows which obstetric professionals the other women applied to for supervision during pregnancy and which of them actually assisted in the delivery. A clear shift towards the obstetrician can be observed, which is a result of referrals during pregnancy and confinement.

Location chosen for confinement

As explained above, the selection system customary in Holland[3] implies that women with a 'primary medical indication' can only have their babies in hospital. They cannot opt for home confinement. All other (in principle, 'low-risk') women are free to choose either home confinement or delivery in hospital with a stay there of 24 hours or seven days.

The percentage of home confinements in the town of Groningen is much lower (18.4 per cent) than the national average (34.7 per cent). This is due to a number of factors, one of the most important being parity. As the main town in the northern part of the country, Groningen occupies a central position in education and therefore there is a relatively high number of young people. This in turn means that the number of primiparae is substantially higher than the national average (in 1981 Holland 42.8 per cent, Groningen 49.2 per cent).

In the fairly recent past (1970–76), a number of midwives were in the habit of making it more or less obligatory for the primiparae in their practices to have their babies in hospital. However, due to lobbying by pressure groups for home confinement for primiparae, requests for home confinement could no longer be rejected by midwives, and, as a result, the percentage of primiparae having their babies at home is once more increasing.

Another factor contributing to the overall downward trend in home confinements is the University Hospital. The maternity clinic of the University Hospital provides accommodation for normal delivery followed by normal puerperium of seven days at a cost no higher than that of home confinement plus seven days of care by a home maternity nurse. This favourable financial arrangement, together with the image of a university clinic providing 'the best of everything', has influenced many women, particularly the young primigravidae who often live in small houses, to opt for confinement in this clinic. Nearly 50 per cent of the infants born to women living in Groningen in 1981 were delivered in the University Hospital maternity clinic.

The location chosen by the women for confinement sometimes differed from the actual place where the baby was born, as can be seen in Table 3.

The influence of parity on the option for home confinement was as follows: I-para, 18.4 per cent; II-para, 22.8 per cent; III-para, 38.5 per cent; >III-para, 43.9 per cent. As parity increased, the option on home confinement was used more frequently.

The residential area also influenced the choice. With inhabitants of Groningen-town proper the home confinement percentage was 18.6 per cent, while for those mothers who lived in the suburbs it was 57.5 per cent.

Table 1. Age according to parity ($n=1,692$ women).

Age (years)	Parity I	II	III	>III	Number of women	(Percentage of total)
<15	2	0	0	0	2	(0.1)
15–19	43	6	0	0	49	(2.9)
20–24	270	125	23	1	419	(24.8)
25–29	370	284	91	12	757	(44.7)
30–34	129	139	75	37	380	(22.4)
35–39	14	31	16	16	77	(4.6)
40–44	1	2	1	2	6	(0.4)
≥45	1	0	0	1	2	(0.1)
Total (%)	830 (49.0)	587 (34.7)	206 (12.2)	69 (4.1)	1,692 (100.0)	

Table 2. Choice of obstetrical assistance ($n=1,692$ women).

Agent	Original choice Number of women (%)		Actually assisted Number of deliveries (%)	
Midwife	992	(58.6)	718	(42.4)
General physician	489	(28.9)	344	(20.4)
Obstetrician	209[a]	(12.4)	620	(36.6)
None	2[b]	(0.1)	10[c]	(0.6)
Total	1,692	(100.0)	1,692	(100.0)

[a] Twenty-four women without 'primary medical indication.'
[b] Two women did not want any medical supervision.
[c] Eight cases where birth took place before arrival of midwife or physician.

Table 3. Location of delivery, intended and in reality ($n=1,692$ women).

Location	Original choice Number of women (%)	Actual confinements At home	In hospital + 24 h	In hospital + 7 days
At home	396 (23.4)	308	42	46
In hospital and 24-h stay	547 (32.3)	11	356	180
In hospital and 7-day stay	551 (32.6)	2	—	549
No choice allowed	198 (11.7)	—	84	114
Total (%)	1,692 (100.0)	321 (19.0)	482 (28.5)	889 (52.5)

Table 4. Referrals to an obstetrician in the antenatal period ($n=1,470$ women).

Location chosen for confinement	Number of women	Number of referrals	(%)
At home	396	22+3[a]	*(5.6)*
In hospital and 24-h stay	536	58	*(10.8)*
In hospital and 7-day stay	538	67	*(12.5)*
Total	1,470	147	*(10.0)*

[a] Three pregnant women at term were given the advice to go into hospital for delivery because of a possibility of small-for-dates baby. They were not referred to an obstetrician, had normal deliveries, and their babies had normal birthweights.

Table 5. Referrals to an obstetrician during labour and in early puerperium ($n=1,323$ women).

Location chosen for confinement	Number of women	Number of referrals	(%)
At home	371	58+12[a]	*(15.6)*
In hospital and 24-h stay	481	110	*(22.9)*
In hospital and 7-day stay	471	131	*(27.8)*
Total	1,323	299	*(22.6)*

[a] Twelve mothers were brought into hospital during labour by way of precaution, but not referred to an obstetrician. They all had normal deliveries and returned home within 24 hours.

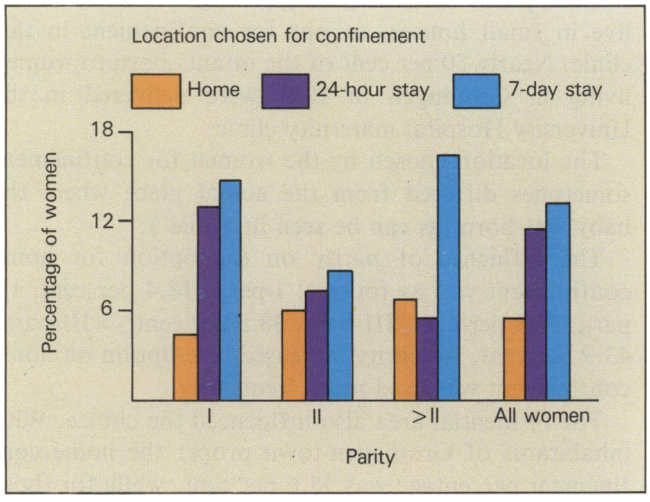

Figure 1. *Referrals to an obstetrician in the antenatal period, according to parity.*

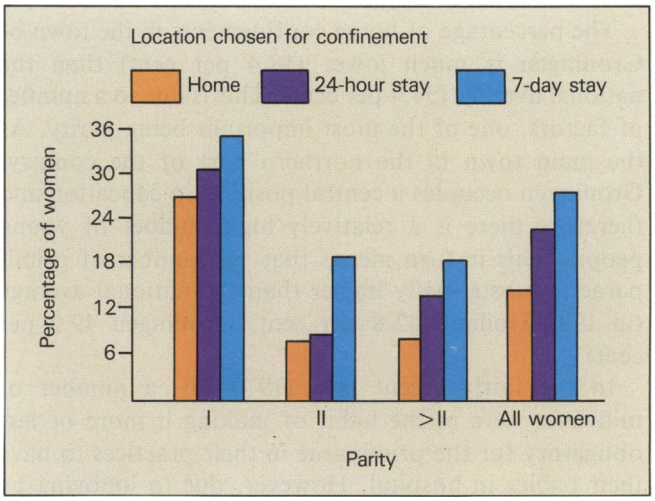

Figure 2. *Referrals to an obstetrician during labour and in early puerperium, according to parity.*

Referral to obstetrician during pregnancy

In a number of cases disorders developed in the course of pregnancy, both related and unrelated to gravidity, which necessitated transferring supervision to an obstetrician. It would not be expected that preference for one rather than the other locations for confinement would have any bearing on the number of referrals; after all, the women all belonged to the groups of 'low-risk' pregnant women for whom there was no 'primary medical indication.' Yet, a clear difference was observed: the number of referrals was lowest among those who had decided to have their babies at home (Table 4, Figure 1).

On average, 10.0 per cent of the women in the sample were transferred to the care of an obstetrician during their pregnancy. The most frequent indications for referral were hypertension/toxicosis (30.6 per cent), malpresentation (20.4 per cent) and suspected lack of fetal growth (17.7 per cent).

Course of delivery

Women who experience a pregnancy without complications (and therefore are not referred to an obstetrician) will not necessarily have a confinement without complications, but it could be expected that the percentage of complications will be the same regardless of the location of delivery. Here again, however, the lowest percentage of referrals to an obstetrician during labour or early puerperium occurred in the group of women who had opted for home confinement (Table 5, Figure 2).

The indications for referral are listed in Table 6. Delivery was not always without problems among those who had been referred to an obstetrician during pregnancy ($n=147$). Although hypertension, diabetes, suspected lack of fetal growth etc are not reasons why parturition should be characterized by complications, only 97 (53.7 per cent) of these women gave birth without any complications. Also, delivery was without complications for only 13 (54 per cent) of the 24 women who of their own volition had applied to an obstetrician for help and guidance during pregnancy and confinement, without there being a 'primary medical indication'.

Infant morbidity

Any study which attempts to compare home and hospital delivery should also consider the condition of the infants.

For the purpose of comparing the various morbidity percentages, the babies who were born without complications were classified according to the place of birth: at home, or in hospital with 24 hours or seven days confinement. It should be noted that this classification differs from the one based on the location chosen by the mothers early in pregnancy (Table 3). Again, it might be expected that the morbidity of infants born without complications would be more or less the same for the different confinement locations, but the most favourable results were among children born at home. Of the three groups of babies—born at home, born in hospital with a 24-hour stay, born in hospital with a seven-day stay—2.8, 8.2 and 10.8 per cent, respectively, were taken to a special infant care unit immediately or within one week after parturition. There was no perinatal mortality among the infants born at home.

Table 6. Indication for referral to an obstetrician during labour and in early puerperium ($n=1,323$ women).

	Women still at home		Women already in hospital	
Indication	Number	(%)	Number	(%)
Premature labour	6	(1.6)	22	(2.3)
Malpresentation	7	(1.9)	21	(2.2)
Induction of labour	17	(4.6)	46	(4.8)
Lack of progress	17	(4.6)	111	(11.7)
Postpartum haemorrhage	1	(0.3)	10	(1.1)
Retained placenta	1	(0.3)	6	(0.6)
Third-degree tear	2	(0.5)	10	(1.1)
Others	7	(1.9)	15	(1.6)
Total	58	(15.6)	241	(25.3)

Discussion

The results cannot be taken as average figures for the whole of Holland. The region selected for the study is not representative of the whole of the country since the sample included a relatively high percentage of primiparae (1981: Groningen 49.2 per cent, Holland 42.8 per cent) and, furthermore, there is the University Hospital maternity clinic in the area which, because of its facilities, attracts many pregnant women (48.3 per cent of the confinements occurred there). Therefore, the outcome of this study only applies to the northern part of Holland.

It was shown that among those women who had opted for home confinement significantly fewer complications occurred during pregnancy, delivery and puerperium than among those who had their babies in hospital followed by a 24-hour stay there or followed by a seven-day stay in a maternity ward. Morbidity was also lower among the babies born at home than among those born in hospital.

When the outcome of confinements is evaluated, the incidence of complications is important. The difference between the results of home and hospital confinements requires an explanation. It could be surmised that those women who opt for home confinement have a greater degree of self-confidence, which has a positive impact on their results. This is an improbable answer, however, because the home confinement rate (ranging from 10–70 per cent in the region studied) appears to increase with the increasing distance from hospital: it would be illogical to assume that self-confidence among women increases the further they live from a clinic.

It might also be expected that parity would have an influence on the decision to have delivery at home. This actually proved to be the case. Even so, with regard to referrals to an obstetrician, for any parity the lowest percentage of referrals occurred among those who gave birth to their children at home (Figures 1 and 2).

Finally, the difference between the referral percentages may be thought to arise from the reasons for referral. Table 6 shows that the only significant difference in reasons for transfer to the care of an obstetrician resulted from 'poor progress in parturition', which occurred with 4.6 per cent of home confinements and with 11.7 per cent of hospital deliveries. Among the total number of referrals during labour or puerperium, the percentage of referrals that were due to poor progress in labour was 29.3 per cent for home confinements and 46.1 per cent for deliveries in hospital. In other words, the diagnosis 'poor progress in labour' was given much less often to those women who wanted to have their babies at home. A discernible cause of this lower referral rate could be that delivery at home, in the privacy of their own surroundings (the main argument put forward by women who chose home confinement), did actually progress faster. It could also be that at home 'progress in parturition' was judged differently, causing the diagnosis of 'poor progress' to be given less often (or, possibly, too rarely?). However, the favourable outcome of home confinement for mother and infant would seem to argue against the latter possibility.

Conversely, the much higher referral rate among women who opted for hospital confinement could be explained by the fact that parturitions in hospital were generally characterized by a much slower rate of progress. The slower speed of parturition could be related to a greater feeling of dependence, an attitude adopted (subconsciously) by women in labour. It could also be due to the atmosphere in the delivery room, which appears to have such an inhibiting effect on some women that a 'natural parturition' can no longer be expected. A possibility one cannot rule out is that intervention was resorted to too soon (or, perhaps, too often) when the natural delivery seemed to be progressing at a lower pace than was expected on the basis of the average time known from experience. By their very nature, obstetric clinics are equipped to enable intervention. This may lead to those facilities being called upon sooner (also at the request of the woman in labour) than

if delivery occurred in surroundings where these facilities were not available.

In western countries the percentage of artificial deliveries is increasing at an alarming rate. In Holland the figure rose from approximately 10 per cent in 1978 to approximately 15 per cent in 1981. It would not be logical to assume that the general physical condition of women for whom there is no 'primary medical indication' has deteriorated through the years to such a degree that delivery in the natural way is now more problematical than it used to be. If these figures indicate that more complications occurred among those women who, of their own free will, opted for hospital confinement than among those who decided to have their babies at home, it might be wondered how many of these complications were induced by the medical professional during labour.

Although a number of women in the sample who had opted for home confinement had to be taken to hospital during labour, two of the three primiparae and six of the seven multiparae actually gave birth to their children at home. Those who were hospitalized during labour or shortly afterwards did not consider this too much of a disappointment. Many of them stated that if they decided to have another baby they would again have it at home, provided their condition during the future pregnancy did not render hospital confinement necessary.

Pregnancy and labour are, in fact, physiological phenomena. In Holland the percentage of instrumental deliveries, in spite of the increase in recent years, is lower than in any other western country;[8] maternal and perinatal mortality rates are among the lowest in the world. Are these favourable figures achieved as a result of, or in spite of, the system of home deliveries? It is true that complications may occur during home confinement which make immediate intervention necessary, for which the women involved have to be taken to hospital as rapidly as possible. Fast transport is usually available, yet there is an unavoidable delay before medical action can be initiated. On the other hand, when an acute emergency condition occurs in most maternity clinics and smaller general hospitals, immediate intervention is also often impossible because the obstetrician is absent, particularly during weekends and at night, or because the right equipment is not available. In clinical surroundings, therefore, time may also be lost before the obstetrician arrives or because the woman in labour has to be transported to a better-equipped hospital.

Naturally, it does happen that babies are stillborn at home or that they die shortly after delivery (3 per 1,000 in Holland in 1979). Unfortunately, the available statistics do not contain data about circumstances and causes of reported deaths. It also happens that unexpected deliveries occur at home, particularly of premature babies, and also that some of the babies born at home have congenital disorders which are incompatible with life.

This mortality is not caused by the custom of home confinement as such. In 1979 perinatal mortality in England and Wales was studied statistically.[9] Perinatal mortality among home confinements, which made up only 1.4 per cent of the total number of deliveries, was as high as 24.3 per 1,000, while the national average was 14.6 per 1,000. Further analysis showed that perinatal mortality among babies born at home was strongly influenced by the high number of illegitimate births, particularly among teenage girls (201.8 per 1,000). Obviously, perinatal mortality among infants born at home is not a useful yardstick for measuring the safety of home confinement in the UK either.

The increasing medicalization of obstetrics has given rise to the notion that it would be 'safer' to deliver in hospital. The safety aspect is emphasized in many publications, both in the professional literature and the lay press. The fact that in a hospital or maternity clinic the very surroundings and equipment may give rise to iatrogenic complications is apparently overlooked. This study has shown clearly that, in the region examined, it was a wholly responsible decision for a normal healthy woman who is given the right kind of antenatal supervision to have her baby at home, with the least risk of complications. It also showed that morbidity was lowest among infants born at home.

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Address for correspondence

Dr S. M. I. Damstra-Wijmenga, Van Ketwich Verschuurlaan 5, 9721 SB Groningen, Holland.