

## Childbirth with Preparation and Support in Labour: An Assessment

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The purpose of this survey was to establish whether or not there were demonstrable advantages resulting from a programme which involved careful preparation of the obstetric patient, together with adequate supportive management during labour and delivery. Widespread interest in the psychosomatic approach to the management of the obstetric patient had been stimulated by the work of G. Dick-Read. His first important publication was *Natural Childbirth* (1933), which outlined a whole new philosophy for the management of pregnancy and labour. And yet much of this was not new, but had become obscured

by a reliance on heavy drug sedation and anaesthesia, used in association with a predominantly mechanistic concept of labour. Dick-Read had devoted himself to a study of the woman herself, in the obstetric situation, with her fears, anxieties and varying emotional reactions. Until his death in June, 1959, Dick-Read maintained a lively interest and contributed many articles via the medical and lay Press. He wrote several instructive booklets and rewrote *Natural Childbirth* as *Revelation of Childbirth* (1942). This appeared in two subsequent editions in 1943 and 1954 as *Childbirth Without Fear*. Jacobson's text *Progres-*



*sive Relaxation* (1929) formed the basis for passive relaxation techniques employed by Dick-Read.

There are many who have, in the conduct of their obstetric work, applied principles similar to those enunciated by Dick-Read. Goodrich and Thoms (1948), Thoms and Wyatt (1951), Miller (1956), Soldenhoff (1958), and Nixon (1955), and many others, have made valuable contributions.

During the past 10 years, a modification of this work, under the name of psychoprophylaxis, has been widely practised on the Continent of Europe and in Russia. The chief difference is in the employment of "active" rather than "passive" relaxation and in the employment of a more systematised conditioning of the patient. Lamaze (1958), Valet (1959), and Velvovsky, Platonov, Ploticher and Shugom (1960) have given lucid descriptions of this work. P. G. de Watteville (1961) has described the sound practical modification of this approach, employed in his hospital in Geneva. Owing to difficulties of selection, or to difficulties in providing adequate management, there has not hitherto been reported a series of cases, where an adequate assessment has been made of the results obtained with a group of adequately managed, unselected, primigravid patients.

In an attempt to evaluate prenatal training, St. Van Eps (1955) presents a series from the Training School for Midwives, Amsterdam, in which neither the control group nor the trained group were given any kind of analgesia. "In the Netherlands childbirth is generally conducted on the assumption that a normal healthy woman should be able to go through a normal labour without any form of relief of pain by drugs." The fact that a significant number of the women were classed as fair or poor, as judged by their performance in labour, is sufficient to invalidate the assumption quoted. To conduct labours in this manner, without offering analgesics where they are obviously required, would seem to indicate an attitude not compatible with adequate management in labour.

In the series reported by Helen Heardman (1948), Dick-Read (1949), and Miller (1956) there could have been selection, in that one could argue that the better adjusted and more favourable type of patient would choose this type of management. In the larger series from hospital practice, such as those reported by Rodway (1957), Burnett (1956) and Roberts (1953), the provision of adequate individual attention was not stressed, and again the element of selection was present. Despite these difficulties, the evidence obtained in the past has suggested considerable advantages when extra trouble and attention have been given to the care of obstetric patients.

### *Material*

For this survey, the treatment and control groups were formed as follows. Of the primigravid patients who booked for care at the hospital clinic, 123 were taken by blind random selection to comprise the *treatment group*. Of the remaining primigravid patients, the 66 who delivered within a prescribed period of time were taken as the *control group*. Those beyond the 28th week at the time of booking were not accepted, as there would have been insufficient

time for preparation if labour should have begun prematurely. When checked, the groups were found to be comparable with respect to the period of gestation at which delivery took place, the height and age of the mothers and the birth weights of the babies.

Patients in the treatment group were not given any option in the matter of participating. It was explained to them that they would receive instruction and encouragement to make their labours easier and more satisfying to them. Labels such as "Natural Childbirth" or "Dick-Read Method" were carefully avoided, as these are a little misleading, and tend to evoke unreasonable emotional reactions in many who do not understand the terms.

Patient co-operation with the scheme varied, but in general was good. Difficult patients were not excluded, but rather given extra attention. Deliveries took place over a period of seven months, as an addition to the usual duties of an Obstetrical and Gynaecological Registrar.

### *Methods*

#### *Preparation and Management*

During the antenatal period, each patient had, on the average, four individual half hour teaching sessions with a trained assistant. Free discussion was encouraged, so that fears, anxieties and misconceptions were ventilated, to form a starting point for explanation and education. Patients were given a good general concept of what they could expect in labour, and what would be expected of them. The aim was to be realistic, and not to present a picture of the ideal easy labour which rarely eventuates.

This hospital is of a temporary nature and, therefore, the greater part of labour is conducted in a community seven-bed labour ward. The nearby delivery rooms do not have adequate sound proofing. Patients were, therefore, warned that they would hear the cries of frightened women, and that others in adjacent beds would moan and groan and become upset. It was explained to them in a general way why others might be in this condition. They were told the type of thoughtless and damaging comments which might be made within their hearing. Reassurance was given that they themselves would not be left alone for any length of time when well advanced in labour.

No attempt was made to depict labour as free of discomfort, but care was taken to reduce anxiety and induce confidence. It was explained that pain-relieving drugs would be given when asked for, and when the attendants thought them necessary. It was also pointed out that labours differ, some would not have any drugs, whereas others would need several injections; the necessity for drugs would be greatly reduced by active and fearless co-operation. There was to be no sense of success or failure, and it would be in the patient's own interest to accept whatever course her particular labour should take. Some would have short labours, whereas others would be slow starters, and have labours lasting several days. If, during the course of labour, some abnormality should develop necessitating a forceps delivery or Caesarean section, nothing would be lost. Instruction and training were still essential, in order to cope with labour



up to the time of intervention. A simple explanation of these procedures was given, in order to remove the bogey of "complications".

At all times the picture was presented as it would appear to the patient, and emphasis was given to explaining how she, as the chief performer, would feel and act. The aim was to bring each patient to labour with a satisfactory orientation to the task ahead. She was encouraged to accept the fact that she was pregnant, and that labour was an inevitable outcome, and then to face up to it, and contemplate it honestly. It was explained how her attendants would be responsible for guiding her through labour—that she must have faith and be prepared to give herself up to the strong forces which at times would almost take charge of her. At the same time, she must maintain her self-control, be patient, and be determined in carrying out the instructions she had received (Nixon, 1955). Formal anatomy and physiology were not taught. These subjects are undoubtedly of interest to a few, but, for the average person, involve difficult concepts which cannot be grasped in the time available, and are of little practical value. Care was taken to keep diction and nomenclature at a level easily understood by the patient. In this country, anatomical terms are meaningless for the majority of people. By simple analogy, and with the aid of the Birth Atlas of the Maternity Centre, New York, a practical working concept of labour was presented.

Emphasis was placed on teaching the type of sensation and emotional reaction which would be experienced at the various phases of labour. Second stage and delivery, which are prominent in the imagination of patients, tend to follow a similar pattern—these were given detailed attention. Physical strengthening and stretching exercises, often reputed to improve labour performance, were omitted. Pelvic floor contraction was taught as the most important exercise to be performed in the postnatal period.

Patients are taught physical relaxation and controlled thoracic breathing for the contractions of first stage. The signs and symptoms of established second stage were emphasised and careful attention given to the expulsive effort. This is regarded as an important skill, and one which is not automatically mastered by the majority of patients. A slow superficial breathing was taught to aid relaxation at delivery. Patients were encouraged to practise relaxation and breathing regularly throughout pregnancy, and to practise the expulsive effort when at the toilet, and also in front of a mirror. The signs and symptoms of established labour were emphasised, and patients were accorded free telephone and personal access to the writer, in order to avoid admission to the labour ward in the premonitory phases.

The writer, with the aid of the clinic nursing sisters, carried out the routine antenatal care and, during labour, saw and examined patients as the indication arose. He was present at the transition between first and second stage, during the greater part of the second stage, conducted the delivery and collected relevant data on the mother and baby. The assistant who trained the women during the antenatal period, was present intermittently throughout labour,

and constantly during late first stage, second stage and at delivery.

Previous experience had shown that, during labour, patients frequently forget what they have been taught antenatally. They were, therefore, constantly reminded, reassured and given further instruction. Even more important, they were controlled and directed throughout labour, so that there was no opportunity for the loss of self-control and composure, which is frequently seen during the stress of labour. Husbands who have had adequate prior instruction, and who are tactfully handled during the time of labour, may be very useful members of the obstetric team. They were excluded from this survey because of the community nature of the labour ward, and because of the hospital policy of excluding husbands.

The *control group* received the routine hospital antenatal and intranatal care. For a considerable proportion, this included lectures and exercise classes as well as some support in labour. There was a notable tendency for the personnel conducting the control group to attempt to employ, in labour, an approach similar to that employed with the treatment group. The same type of pain relief was used in the two groups—pethidine in the first stage and intermittent trilete inhalation in second stage and at delivery. For operative deliveries, pudendal block, epidural or general anaesthesia were used as indicated. Operative deliveries were carried out in accordance with the usually accepted criteria—where there was delay in the progress of labour or evidence of foetal distress.

Episiotomies were performed for the following reasons: forceps and breech deliveries, any evidence of impending laceration (bleeding from the vaginal mucosa when the head receded, was the usual sign), unyielding type of tissue at the introitus impending delivery, prematurity and evidence of foetal distress. The line of the episiotomy was infiltrated with xylocaine prior to incision.

The placenta was delivered by the Brandt-Andrews technique, aided by the mother's expulsive effort. A routine was to give 0.5 mgm. of ergometrine intramuscularly to the mother with the birth of the anterior shoulder. This injection was given intravenously to a number of the control group. Further ergometrine was given as indicated.

As soon as delivered, all babies in both groups were held head down, and the nasopharynx aspirated. If respiration had not become established within two to three minutes of delivery (or sooner in babies showing signs of asphyxia), oxygen was given per nasal catheter and artificial respiration performed by the Melbourne technique of intermittent occlusion.

#### Assessment

As well as conducting the labours and deliveries of the treatment group patients, the writer was present during the second stages and at the deliveries of the control group patients. This was in order to ensure that, for the collection of data, comparable criteria were used in the two groups. The time spent in hospital in labour before delivery was noted. (Patients who were already in the hospital for ante-



## APGAR SCALE

SCORE	0	1	2
CLINICAL SIGN			
Heart rate	Absent	Slow (Below 100)	Over 100
Respiratory Effort	Absent	Slow Irregular	Good Crying
Muscle Tone	Limp	Some Flexion Of Extremities	Active Motion
Reflex Response to Catheter in Nose	Absent	Grimace	Vigorous Cry
Colour	Blue Pale	Body Pink Extremities Blue	Completely Pink

APGAR SCALE -- 60 seconds after complete extrusion of the infant, these 5 objective signs are evaluated and each given a score of 0, 1, or 2. A score of 10 indicates a baby in the best possible condition at birth.

Figure 1

natal care, or whose labours were induced, were excluded from this assessment).

An estimate was made of the lengths of labour and of the second stage. As it is often not possible to be in any way accurate in timing the lengths of labour and of the second stage, irrespective of the criteria employed, an additional more objective measurement was made in the "peep" to delivery interval. The "peep" was taken as the time when an area of the scalp of the foetus the size of a one shilling piece was visible at the height of a contraction, with the patient in the dorsal position, with the knees drawn up and parted.

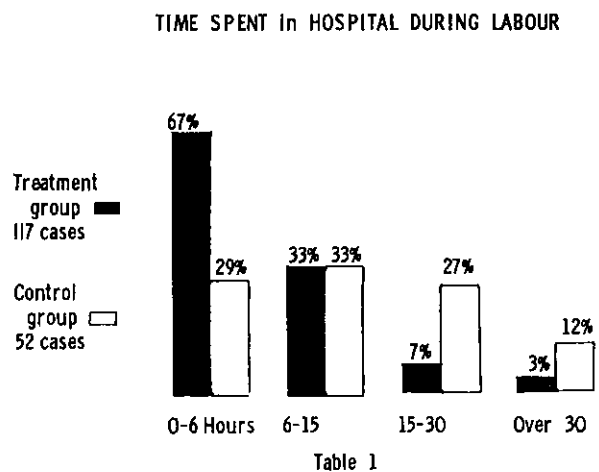
The condition of the babies following delivery was assessed by noting the time from delivery to the establishment of satisfactory regular respiration; the time from delivery to when the gums and tongue were noted to be pink; and by rating them on the scale suggested by Apgar (1952). This scale is set out in Fig. 1.

The midwife present was asked to make an assessment of the patient in second stage, at delivery and following delivery, using as criteria the co-operation, calmness and general attitude of the patient. In this assessment, a patient making use of trilene was not marked down if it appeared that a satisfactory result was being obtained with the aid of the analgesia.

Almost all patients of both groups were interviewed in the puerperium, but the results of interview were not subjected to analysis, as the psychologists who were to carry out this work were, unfortunately, not available.

### Results

The average time spent in hospital in labour (Table I) was less in the treatment group, and there



was in it a notable absence of admissions in "false labour" and less tendency for admission in the premonitory phases of labour.

There was little difference in the overall lengths of labour (Table II).

LENGTH of LABOUR

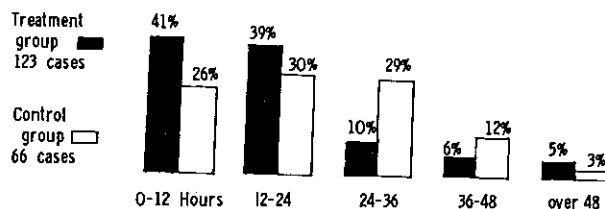


Table II

The second stages were notably shorter in the treatment group (Table III).

LENGTH of SECOND STAGE

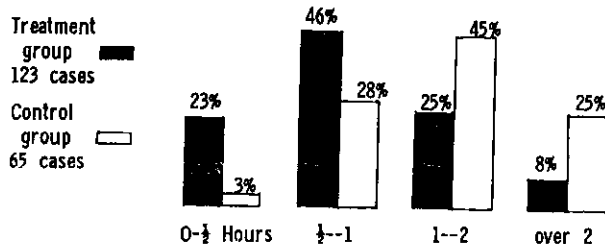


Table III

The average "peep" to delivery interval (time taken to negotiate the pelvic floor) (Table IV) was, in the treatment group, approximately one half that of the control group.

DELAY at the PELVIC FLOOR

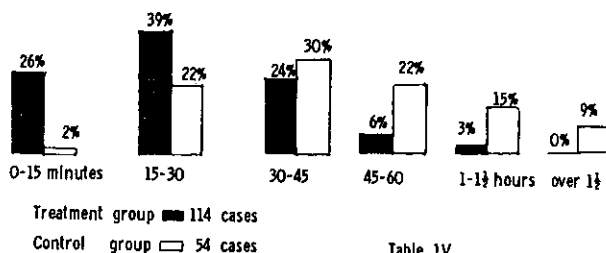


Table IV

The treatment group showed a considered reduction in the incidence of both low and mid forceps operations (Table V). In it, the two low forceps deliveries were for foetal distress developing early in the second stage. Of the six deliveries from mid-cavity, two were for foetal distress and four for arrested labour—one in the anterior position, two with the occiput transverse and one a persistent occipito-posterior position in a patient who had sustained a fractured pelvis in a motor car accident suffered in early adolescence. Fifteen per cent. of

OPERATIVE DELIVERIES

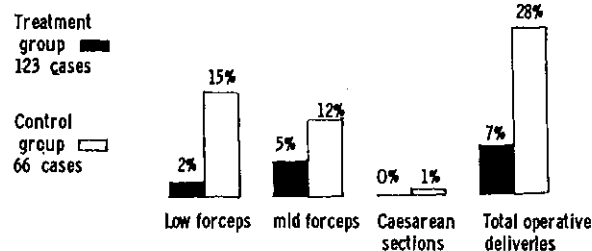


Table V

patients in the control group had forceps deliveries for delay at the pelvic floor, an indication not present in the treatment group.

There were, in the treatment group, eight spontaneous face to pubes deliveries. Several patients had temporary hold up of the asynclitic head in the low transverse position, but by determined effort, achieved spontaneous delivery without undue delay.

The one breech delivery (footling-baby 7 1/2 lb.) was carried out with perfect co-operation.

Where a pudendal block technique was used for forceps delivery, there was a striking difference—the treatment group patients remained quite co-operative and were easily controlled.

There was a relatively high episiotomy rate in both groups, with less lacerations in the treatment group (Table VI).

EPISOTOMIES and PERINEAL LACERATIONS

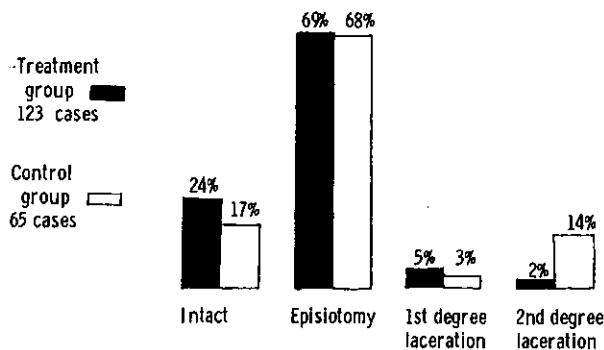


Table VI

LENGTH of 3rd STAGE and MANUAL REMOVALS

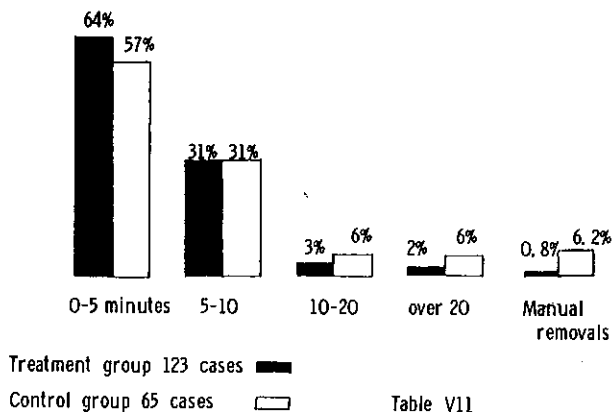


Table VII

The third stages were somewhat shorter in the treatment group and considerably less manual removals of the placenta were required (Table VII).

Blood loss was notably less in the treatment group with a post-partum haemorrhage rate of 3% compared with a rate of 20% in the control group (Table VIII).

BLOOD LOSS

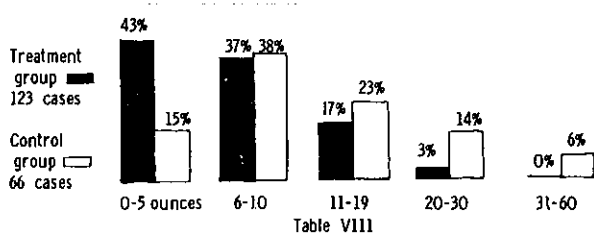


Table VIII

The dosage of pethidine required during the first stage of labour was very much less in the treatment group (Table IX), but despite this, the control group patients were less well sedated as judged by their behaviour.

PETHIDINE DOSAGE

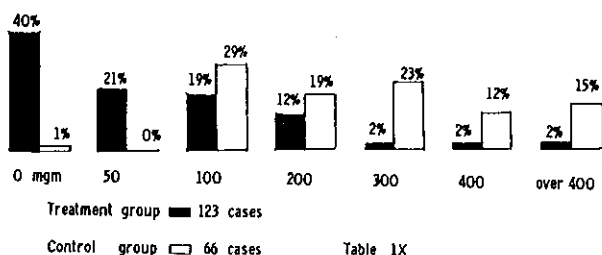


Table IX

TRILENE INHALATION in SECOND STAGE and at DELIVERY

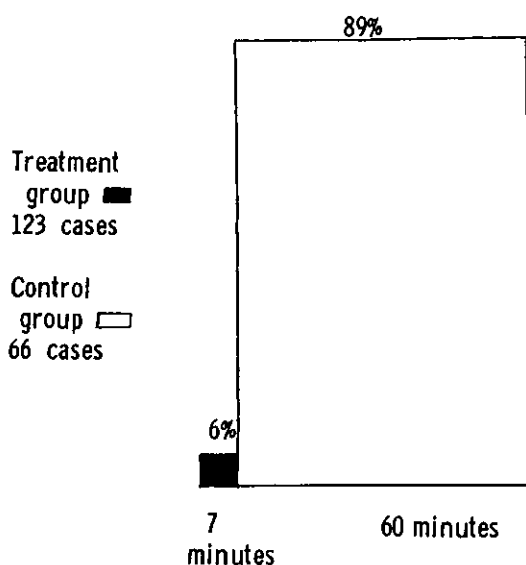


Table X

During the second stage, trilene analgesia was used in 6% of the treatment group for an average of seven minutes intermittent inhalation, whereas 89% of the control group used it for an average of 60 minutes each (Table X). In addition, the increased operative delivery and manual removal rates, meant a higher regional and general anaesthesia rate in the control group.

The condition of the babies following delivery was clearly better in the treatment group as shown by the time for the establishment of respiration (Table XI), the time elapsing before the lips, gums or tongue became pink (Table XII) and by the assessment on the Apgar scale (Table XIII). On the latter rating, there were 7% of the treatment group babies in the depressed group (scoring 1, 2 or 3) and 34% of the control group. Again, there were 85% of the treatment group babies in good condition (scoring 7, 8, 9 or 10) and 34% of the control group.

TIME from BIRTH to ESTABLISHMENT of REGULAR RESPIRATION

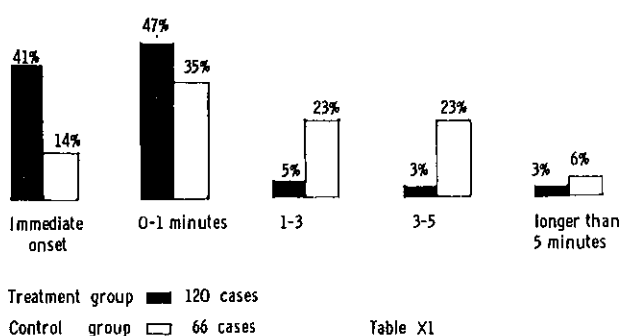


Table XI

TIME from BIRTH to Disappearance of CYANOSIS from LIPS or GUMS

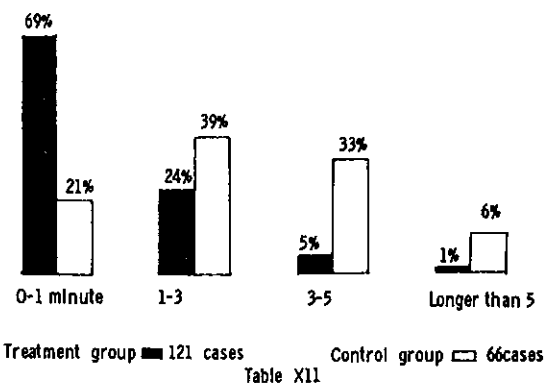


Table XII

The striking overall difference in the condition of the babies was quite evident to casual observers present at delivery. It was of interest to note that the depressed babies in the treatment group were born after long or unusually strong labour, or those in which there had been some evidence of placental separation. There were two where the reason was not evident and where the depressed state was not anticipated.

When the patients were assessed, 93% of the treatment group were rated very good compared with only 14% of the control group (Table XIV).

## APGAR RATING

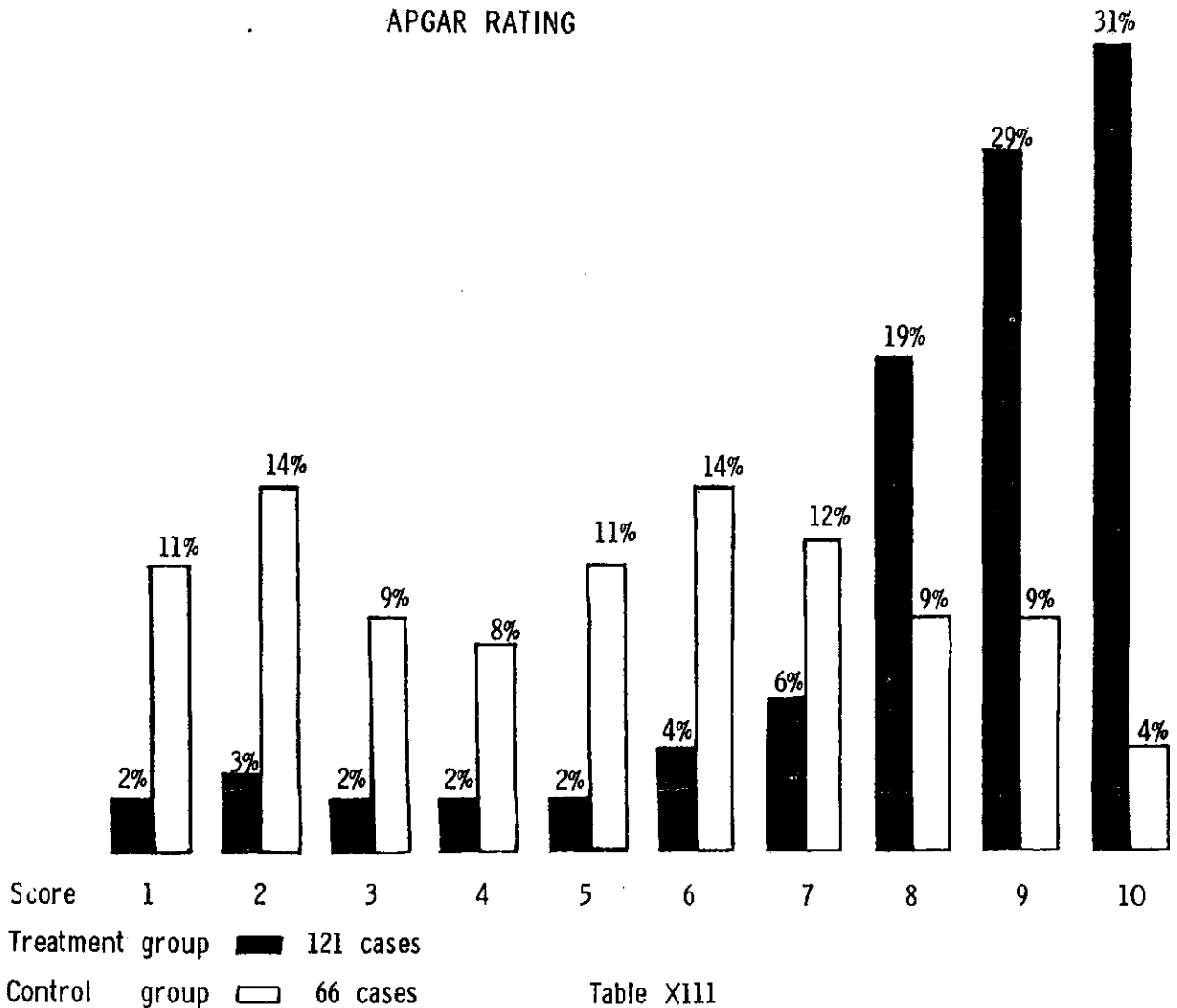


Table XIII

All who had the opportunity of observing the women in labour, were impressed by the calm co-operative attitude shown by the treatment group throughout labour, and by their reactions at, and following, delivery. It was also impressive to note the

### ASSESSMENT of PATIENTS

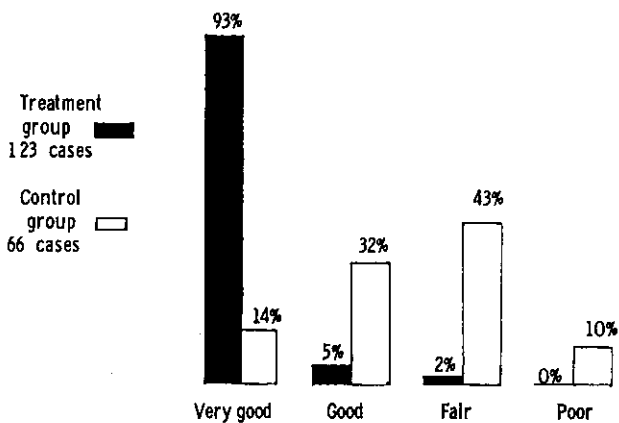


Table XIV

number of nurses who spontaneously remarked: "This is the way I want to have my baby".

Questioning in the puerperium showed clearly that the women of the treatment group had not been adversely affected by their labours—most were already looking forward to having their next baby, and many were obviously elated by the experience. In marked contrast were the reactions of many of the control group patients who were often despondent, and expressed the wish not to have further babies—they often "dissolved into tears" when discussing the experience of labour.

Five babies of the treatment group died in the perinatal period from a series of mishaps unrelated to the obstetric management.

#### Baby P—

No foetal heart audible when patient admitted with an accidental antepartum haemorrhage at 36 weeks—a diastolic blood pressure of 85 mm. of Hg, recorded several days previously, was the only sign of developing pre-eclamptic toxæmia.

#### Baby T—

The foetal heart beat disappeared in early labour two hours after admission, apparently without warning.

The cord was tightly three times round the neck at delivery, and post mortem examination suggested an asphyxial death.

*Baby T—*

A bilateral tension pneumothorax, induced when a resident was resuscitating a depressed baby, was not recognised, and the baby died aged 2½ hours.

*Baby C—*

Following a short and very easy normal delivery with episiotomy, a subcapsular haematoma on the under surface of the liver ruptured on the third day of the puerperium. (Vitamin K had not been given following delivery.)

*Baby W—*

This baby died on the second day, of a viral encephalitis—the consensus of opinion was that this was an antenatal infection.

### *Discussion*

The results reported show clear differences between the treatment and control groups.

It was notable that the factor of uterine inertia was present in the treatment group, but that those women who had long labours remained in good condition, were alert in second stage and were able to co-operate fully.

To have even a few minutes intermittent trilete inhalation in second stage or at delivery, was quite exceptional in the treatment group. Prior knowledge of the sensations of second stage, uninhibited performance of the bearing down effort and careful control by the attendant, removes most of the discomfort of second stage and delivery. Pain at this stage is founded on uninformed, half hearted co-operation with poor pelvic floor relaxation, in combination with the agony of anticipation of the unknown.

It may be considered that the low forceps operation is not inferior to undelayed spontaneous delivery. P. G. de Watteville (1961) by using the number of retinal haemorrhages present in the newborn as an index of possible minor cerebral damage, has given good evidence that this operation is not as innocuous as is generally assumed.

The birth experience undoubtedly has important psychological implications, especially for the woman who is well supported, and sufficiently well prepared to accept, in full consciousness, the arrival of her baby. Goodrich and Thoms (1948) sum up their views as follows: "No one who has seen a natural childbirth can doubt that there is established an immediate and close bond between the mother and her baby. This bond, in the opinion of those psychiatrists who have observed it, should, and does, provide for a mother-child relationship that can have a deep and lasting effect on their mutual adjustment in the distant, as well as the near future."

Earlier experience has convinced the writer that where an adequately prepared husband is present during labour and at delivery, not as a spectator, but included in the group at the head of the bed to share with his wife the experience of the baby's arrival, he plays a more enthusiastic part in the early nurture of the child—the family becomes more closely integrated.

Davis (1960) is convinced that parent education is a most important part of modern pre-natal care. With it mothers will become active participants in

life's greatest adventure and it can be a "labour of love".

Babies born to mothers in the treatment group were shown to be in better physical condition following delivery. The increased periods of apnoea seen in the control group babies may not be of great importance in the majority of cases. It is in the baby already depressed by pre-delivery anoxia, delivery trauma, or immaturity, that the added depressant effects of drugs may be critical (James, 1960).

Although drug antagonists have been introduced, Eckenhoff and co-workers (1955) have doubted the efficacy of antagonists administered with clinical doses of narcotics. This opinion is amplified in a discussion by Eastman (1959).

The chief reason for the successful results obtained with the treatment group was to be found in the individual attention afforded. The patients showed wide variation in physical and emotional characteristics, and in education and intelligence. Certainly, many could have been managed largely by group techniques, but there were a relatively large number who would have remained inaccessible. In any such group, there are those who are timid or inhibited, and quite unable to unburden themselves in public; there are those who are less intelligent or uneducated and need a more simplified presentation; those who feign disinterest or hostility; and not the least difficult, those 'domesticated' apparently confident women who are "not at all worried about the prospect of labour", but who are in fact dismissing the whole prospect from their minds, and refusing to face reality. These latter are the ones who according to Jeffcoate (1955) and Scott and Thompson (1956) are predisposed to inefficient uterine action.

Each type requires a rather different preparation and management, in order to bring out those qualities which will ensure the best performance in labour, and the most wholesome postpartum adjustments. As suggested by Burnett (1956), it is the sound personal relationships built up between the patient and her attendants, which are essential for the application of these techniques.

Hargreaves (1955), discusses in a very lucid manner how great is the potential for effective preventive psychotherapy in the day to day work of the obstetrician. "The obstetrician sees the potential neurotic or psychotic at a period when she is being called on to make a psychological adaptation to pregnancy and the birth of a child—at a time of stress when very simple measures may tip the scales in the right direction. The recognition in the antenatal period of a woman with a markedly immature, dependant and infantile personality is as important a part of the antenatal examination as is the recognition of the contracted pelvis—both call for special antenatal prophylactic measures".

### *Conclusions*

This survey demonstrates that even though conditions may not be ideal, excellent results may be obtained with the type of management outlined. It is quite evident that the great advances which have been achieved in the physical management of the obstetric patient are of first importance. However, physical



care does not cope with the whole patient and it is clear that we must go further, and apply the same detailed attention to the psychological and spiritual management. Undoubtedly extra effort and organisation will be called for, but the importance and ramifications are so great that they cannot be denied.

#### Summary

One hundred and twenty-three unselected primigravid patients were carefully prepared for and supported in labour.

A comparison was made with a control group of 66 patients having routine hospital care.

The treatment group required less drugs, were less time in second stage, had a lower incidence of operative delivery, a smaller postpartum blood loss and were calmer and more co-operative throughout their labours.

The babies of the treatment group were in better physical condition following delivery as assessed by the Apgar scale.

#### Acknowledgments

I wish to thank Professor H. M. Carey, without whose unrelenting diplomacy this survey would not have been possible. His encouragement and criticism have been invaluable. I should also like to thank Mr. A. Macfarlane for permission to use patients under his care and Sister Hare, her Labour Ward Staff and the Clinic Sisters, for their co-operation.

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