

Companionship to modify the clinical birth environment: effects on progress and perceptions of labour, and breastfeeding

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Abstract

Objective—To measure the effects of supportive companionship on labour and various aspects of adaptation to parenthood, and thus by inference the adverse effects of a clinically orientated labour environment on these processes.

Design—Randomized controlled trial.

Setting—A community hospital familiar to most of the participants, with a conventional, clinically-orientated labour ward.

Subjects—Nulliparous women in uncomplicated labour.

Intervention—Supportive companionship from volunteers from the community with no medical nor nursing experience, concentrating on comfort, reassurance and praise.

Main outcome measures—Duration of labour, use of analgesia, perceptions of labour and breastfeeding success.

Results—Companionship had no measurable effect on the progress of labour. Diastolic blood pressure and use of analgesia were modestly but significantly reduced. The support group were more likely to report that they felt that they had coped well during labour (60 vs 24%, $P < 0.00001$). Their mean labour pain scores (26.0 vs 44.2, $P < 0.00001$) and state anxiety scores (28.2 vs 37.8, $P < 0.00001$) were lower than those of the control group. Compared with the control group ($n = 75$), at 6 weeks women in the support group ($n = 74$) were more likely to be breastfeeding exclusively (51 vs 29%, $P < 0.01$); and to be feeding at flexible intervals (81 vs 47%, $P < 0.0001$).

Conclusions—Labour in a clinical environment may undermine women's feelings of competence, perceptions of labour, confidence in adapting to parenthood and initiation of successful breastfeeding. These effects may be reduced by the provision of additional companionship during labour aimed to promote self-esteem.

There is increasing recognition of the impact of social factors on health (Editorial 1988; Schwarzer & Leppin 1989). Modern obstetrics has

tended to isolate labouring women from the community contacts that were a feature of childbirth in preindustrialized societies (Kennell &

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Klaus 1988). In recent years, policies in many hospitals have been revised and companions, usually male partners, have been encouraged to be present during labour. There is little well-controlled evidence that the presence of male partners has a favourable effect on the progress of labour or its outcome (Keirse *et al.* 1989). The observable support given by first-time fathers has been unfavourably compared with that provided by female labour companions or 'doulas' (Bertsch *et al.* 1990).

The provision of medical care for childbearing women has been associated with improvements in the immediate outcome of pregnancy for mothers and their babies. At the same time, problems following childbirth such as failure to breastfeed successfully, failure to cope well as a mother and postnatal depression are widespread. It is important to question the extent to which modern-day obstetric practices contribute to either the positive or the negative features of contemporary childbirth (Oakley 1980).

Klaus *et al.* (1986) have shown that women from a rural background admitted to a large, western style hospital in Guatemala experienced considerably shorter labours and fewer complications when randomly assigned to receive continuous support from a female companion during labour. The extent of the improvements observed may be viewed as a measure of the extent to which those without the companionship were failing to achieve their biological potential and, therefore, as an indication of the adverse effects of the clinical environment on the labour process. Similar results have been reported from a public hospital in Houston serving a low-income population, with high use of technology and rates of intervention (Kennell *et al.* 1988). The potential for physiologically improved labour function may be less in environments in which the sense of isolation and unfamiliarity is less extreme than that described in the Guatemala study, or where medical interventions are less frequent than in the Houston study. On the other hand, there may be less obvious adverse effects of the conventional clinical environment on the process of labour and adaptation to parenthood.

Studies of general social support during pregnancy in industrialized communities have tended to show positive psychosocial benefits but a lack of demonstrable physiological improvements (Oakley 1989). In an affluent, low-risk North American population with high

rates of obstetric intervention, intrapartum professional support was associated with significantly reduced use of analgesia and rate of episiotomy, but not reduced labour length nor rate of caesarean section (Hodnett & Osborn 1989).

We have investigated the hypothesis that during labour women may be uniquely vulnerable to environmental influences; that modern obstetric care may have an adverse effect on the progress of labour and on the development of feelings of competence and confidence; that this may in turn impair adjustment to parenthood and establishment of breastfeeding; and that this process may to some extent be reversed by the provision of positive support and companionship during labour.

Subjects and methods

The study was conducted at Coronation Hospital, a community hospital serving a low-income urban population. Advertisements were placed in the hospital and local churches asking for help from women prepared to act as labour supporters. The work was to be voluntary, though a nominal allowance to help with expenses would be paid (about £3 sterling per day). Twenty women responded and were interviewed by two of the authors (W-L.W. and G.J.H.). They were asked about their reasons for volunteering and their attitudes to childbirth and the need for emotional support during labour. Role-play was used to assess their ability to express empathy. Three were selected to act as labour companions. They were asked simply to stay with those labouring women to whom they were allocated as continuously as possible, and using touch and speech to concentrate on three primary functions: comfort, reassurance and praise.

Nulliparous women in established labour without significant obstetric complications whose cervixes were less than 6 cm dilated and who had no supportive companion with them were asked to participate in the study. The details of the study were explained, in particular that participants would have only a one in two chance of being accompanied during the rest of the labour by a companion. Baseline clinical details of the participants were recorded and a brief questionnaire completed. Blood pressure and pulse were measured using a non-invasive monitor (Dinamap, Critikon, Johnson & Johnson Ltd). Blood samples were collected from the

intravenous line that was routinely employed to ensure adequate hydration in nulliparous women in the labour ward.

Participants were then allocated by means of randomly ordered cards in sealed opaque envelopes to a study and a control group. Those in the study group were introduced to one of the supporters who stayed with her at least for several hours, and in most cases until her baby was born. Participants were enrolled in the mornings only, as the supporters were not expected to stay at the hospital after dark. In all other respects, the care received by both groups was identical. Clinical care was provided by the resident medical and nursing staff. The time nursing staff could spend with women in both groups was limited by the relatively small nursing complement in our busy labour ward.

One hour after enrolment, venous blood was again collected and the blood pressure and pulse measurements repeated. When possible, cord and maternal blood are collected at delivery. Details of the labour and delivery were obtained from the hospital notes.

The next morning, within 24 h of delivery, a structured interview was conducted by a clinical psychologist (W-L.W.). For all but the last few questions, which related to the support received in labour, the interviewer was blind to the allocation of each woman.

Letters were written to the participants reminding them to attend the 6 week postnatal clinic and, if they failed to do so, further letters were sent and telephone calls made. At the postnatal visit, a further interview was conducted. It was not possible to ensure that the interviewer was always blind to the group allocation, as sometimes the participants volunteered information which identified them as belonging to one or other group.

Statistical comparisons of continuous data were by the Mann-Whitney *U* test. Proportions were compared by means of the 95% confidence intervals (CI) of the odds ratios and the χ^2 -test.

The protocol was approved by the committee for research on human subjects of the University of the Witwatersrand.

Results

Of the 190 women approached, 189 agreed to participate in the study and 92 were randomly allocated to the support and 97 to the control group.

The randomization process succeeded in producing groups which were very well matched for all the baseline data recorded, except for a slight imbalance in the racial composition. This discrepancy was considered too small to have materially altered the results (Table 1). Similar proportions were unmarried (support 79%, control 81%), Protestant (64%, 64%), Catholic (16%, 15%), Moslem or Hindu (14%, 13%), previously employed (45%, 44%), scholars (9%, 13%), had household monthly incomes below £200 Sterling (73%, 64%) and had completed more than 10 years of education (63%, 64%). Similar proportions strongly acknowledged that they felt excited (46%, 47%), worried (43%, 38%), sad (15%, 8%), afraid (46%, 43%), in pain (78%, 84%) and anxious (41%, 42%), and appeared to be moderately (46%, 53%) or severely (12%, 12%) distressed.

One woman in the control group left the hospital before completing the 24-h questionnaire, and could not be traced.

The biochemical results and psychosocial follow-up of the mothers and their babies will be considered elsewhere. This report is concerned with the comparisons between the two groups relating to labour and its perception, and breastfeeding.

Labour companionship had no measurable effect on the frequency of uterine contractions 1 h after entry to the study, the rate of cervical dilatation in the first 4 h, the use of oxytocics and amniotomy, or the duration of labour (Table 2). One hour after enrolment the blood pressures in the control group were somewhat lower than in the support group, the difference between diastolic pressures being statistically significant. The fetal heart rate was also slightly but not quite significantly, lower.

The overall number who required analgesia with pethidine and hydroxyzine (Aterax) was not different, but the first dose after enrolment was required earlier in the control group, and there was a trend towards more in the control group needing a subsequent dose.

The rate of operative deliveries was similar in the two groups. Meconium-staining of the amniotic fluid at the time of spontaneous or artificial rupture of the membranes tended to be more common in the support group. All other measures of neonatal well being tended to favour the support group, but none of the differences was statistically significant.

In contrast to the modest measurable effects

Table 1. Baseline information expressed as mean (SE) values or proportions (%)

Variable	<i>n</i>	Support	<i>n</i>	Control
Age (years)	91	20.5 (0.36)	97	20.3 (0.28)
Gestation (weeks)	92	39.4 (0.16)	97	39.6 (0.13)
Labour induced	92	6 (6.5%)	97	4 (4.1%)
Draining amniotic fluid	92	75 (82%)	97	75 (77%)
Occipito-anterior	84	63 (75%)	91	61 (67%)
Blood pressure (mmHg)				
Systolic	92	130.7 (1.66)	92	128.0 (1.55)
Diastolic	92	75.5 (1.24)	97	75.6 (1.08)
Pulse (/min)	91	83.9 (1.34)	97	85.9 (1.57)
Cervix dilated (cm)	92	4.0 (0.13)	96	3.9 (0.11)
Contractions (/10 min)	92	3.4 (0.09)	95	3.5 (0.10)
Fetal heart rate (/min)	92	136 (1.37)	96	135 (1.14)
Low variability	92	9 (9.8%)	96	10 (10%)
Decelerations	92	13 (14%)	96	13 (13%)
Previous analgesia	92	41 (45%)	97	41 (42%)
Oxytocin augmentation	92	8 (8.7%)	97	10 (10%)
Race: Asian	92	12 (13%)	97	13 (13%)
Black	92	7 (7.6%)	97	1 (1.0%)
Coloured	92	73 (79%)	97	83 (86%)

on the physiological progress of labour, the psychological responses and perceptions of the groups were strikingly different (Table 3). The day after delivery the trait anxiety score (Spielberger 1983) and the self-esteem score (Coopersmith 1967), which measure stable personality characteristics and should not be influenced by recent events, were the same in the two groups. The state (current) anxiety score was significantly reduced in the support group. Fewer in the support group described their labour pain as 'severe', and the McGill pain rating index for labour pain (Melzack, 1975) was about half that of the control group. Fewer described their pain at the time of questioning as 'moderate' or 'severe'. Fewer described the labour as 'very difficult' or 'much worse than they had imagined it would be', or felt that they had been 'very tense', while more felt that they had coped well with the labour.

At 6 weeks after delivery, women in the support group were significantly more likely to be breastfeeding their babies exclusively (Table 4). They were about four times less likely to report having experienced feeding problems, three times less likely to have started foods other than breast or bottled milk, and almost twice as likely to be feeding at flexible intervals rather than by schedule.

Comparison of the main reasons given for stopping breastfeeding showed that what distin-

guished the groups was the greater number in the control group who had stopped because of a perception of having inadequate breast milk.

To investigate the possibility that participation in the study without being allocated to receive support may have had an adverse effect on the control group, 30 women who were not enrolled prospectively in the study because they had been admitted in labour over a weekend or in the evening, but whose records showed that they would have met the criteria for enrolment, were approached the day after delivery, and all agreed to complete the 24-h questionnaire. The results in Table 5 show that their responses were very similar to those of the randomized control group, and different to those of the support group.

Discussion

The contribution of modern obstetric care to improved perinatal outcome must be accounted for by the benefits of effective medical interventions in those women with complications of pregnancy. What has been unique in the field of childbirth has been the application of clinically orientated care on a wide scale to healthy individuals. Labour in particular has been defined as a high-risk situation *de facto*, justifying the imposition of the restrictions of clinical care on a routine basis. It is important to question whether

Table 2. Details of labour outcome expressed as mean (SE) values or proportions (%)

Variable	n	Support	n	Control	P	Odds ratio (95% CI)
1 h after entry to study						
Blood pressure (mmHg)						
Systolic	87	129.3 (1.83)	95	132.1 (1.64)	0.19	
Diastolic	87	73.6 (1.15)	95	76.6 (1.16)	0.03	
Pulse	85	82.2 (1.57)	95	80.9 (1.55)	0.88	
Contractions/10 m	87	3.61 (0.10)	93	3.78 (0.12)	0.63	
Irregular	87	6 (6.9%)	93	4 (4.3%)	0.66	1.64 (0.46-5.8)
Fetal heart rate	87	134.5 (1.31)	94	136.8 (1.23)	0.052	
Low variability	87	8 (9.2%)	94	12 (12.8%)	0.28	0.70 (0.28-1.8)
Decelerations	87	17 (19.5%)	94	19 (20.2)	0.94	0.96 (0.46-2.0)
Amniotomy (total)	92	66 (71.7%)	96	69 (71.9%)	0.89	0.99 (0.53-1.9)
Hours after entry	16	2.2 (0.35)	22	2.5 (0.45)	0.92	
Cervix change (cm/h)	90	1.03 (0.09)	93	1.02 (0.10)	0.64	
Analgesia	92	52 (57%)	97	56 (58%)	0.98	0.98 (0.55-1.7)
Next analgesia (h)	52	2.33 (0.26)	56	1.67 (0.27)	0.03	
Analgesia >once	92	6 (6.5%)	97	13 (13.4%)	0.18	0.47 (0.18-1.2)
Oxytocin used	92	16 (17%)	97	17 (18%)	0.88	0.99 (0.47-2.1)
Hours after entry	16	4.43 (0.61)	17	3.92 (0.43)	0.65	
Labour duration (h)	92	9.6 (0.41)	97	10.2 (0.50)	0.63	
Entry-delivery (h)	92	5.18 (0.33)	97	5.24 (0.31)	0.94	
Assisted delivery	92	7 (7.6%)	97	7 (7.2%)	0.86	1.06 (0.36-3.1)
Caesarean section	92	11 (12.0%)	97	14 (14.4%)	0.77	0.81 (0.35-1.9)
Meconium-staining	92	18 (19.6%)	97	10 (10.3%)	0.11	2.07 (0.93-4.6)
Birthweight (g)	92	3093 (45.5)	97	3116 (42.5)	0.66	
1-min Apgar <7	87	12 (13.8%)	91	22 (24.2%)	0.08	0.50 (0.24-1.0)
5-min Apgar <7	89	4 (4.5%)	96	6 (6.2%)	0.42	0.71 (0.20-2.5)
Oxygen required	92	24 (26.1%)	97	27 (27.8%)	0.92	0.92 (0.48-1.7)
Baby intubated	92	0 (0%)	97	1 (1.0%)	0.51	0.14 (0.003-7)
Cord pH	74	7.23 (0.01)	75	7.23 (0.01)	0.80	
Cord base excess	75	9.21 (0.42)	74	9.09 (0.44)	0.61	

such profound manipulations of the childbirth environment might have unsuspected adverse effects on the process of birth and adaptation to parenthood.

Table 3. Questionnaire responses within 24 h of birth expressed as mean (SE) values or proportions (%)

Variable	n	Support	n	Control	P	Odds ratio (95% CI)
Trait anxiety score	92	40.2 (0.94)	96	39.8 (0.90)	0.86	
State anxiety score	92	28.2 (0.85)	96	37.8 (1.10)	0.00001	
Self-esteem score	92	65.3 (1.80)	96	65.9 (2.01)	0.63	
Labour pain severe	92	53 (57.6%)	96	76 (79.2%)	0.002	0.37 (0.2-0.67)
Pain rating index	92	26.0 (1.42)	96	44.2 (1.52)	0.00001	
Pain at time of questioning						
Moderate	92	19 (20.7%)	96	33 (34.4%)	0.05	0.51 (0.3-0.96)
Severe	92	3 (3.3%)	96	23 (24.0%)	0.0001	0.18 (0.08-0.4)
Mothers' perceptions of labour						
Very difficult	92	32 (34.8%)	96	57 (59.4%)	0.002	0.37 (0.2-0.66)
Coped well	92	54 (58.7%)	96	23 (24.0%)	0.00001	4.17 (2.3-7.5)
Felt very tense	92	28 (30.4%)	96	62 (64.6%)	0.00001	0.26 (0.14-0.5)
Much worse than imagined	92	34 (37.0%)	96	62 (64.6%)	0.0003	0.33 (0.2-0.59)

Table 4. Questionnaire responses at 6 weeks postpartum

Variable	Support (n = 74)	Control (n = 75)	P <	Odds ratio (95% CI)
Found becoming a mother easy	33 (44.6%)	8 (10.7%)	0.001	5.42 (2.6-11.1)
Managing well with baby	67 (90.5%)	49 (65.3%)	0.001	4.27 (2.0-9.2)
Breastfeeding only	38 (51.4%)	22 (29.3%)	0.01	2.48 (1.3-4.8)
Not breastfeeding at all	16 (21.6%)	24 (32.0%)	0.21	0.59 (0.3-1.2)
On food other than milk	13 (17.6%)	40 (53.3%)	0.0001	0.21 (0.1-0.4)
Has had feeding problems	12 (16.2%)	47 (62.7%)	0.0001	0.15 (0.08-0.3)
Baby has poor appetite	0 (-)	19 (25.3%)	0.001	0.10 (0.04-0.3)
Flexible feeding intervals	60 (81.1%)	35 (46.7%)	0.0001	4.39 (2.3-8.5)
Main reason for starting bottle-feeding				
Return to work	3 (4.1%)	7 (9.3%)	0.34	0.43 (0.1-1.6)
Believes bottle better	8 (10.8%)	5 (6.7%)	0.54	1.68 (0.5-5.2)
Baby not satisfied or ill	4 (5.4%)	4 (5.3%)	0.73	1.01 (0.24-4.2)
Breast milk insufficient	10 (13.5%)	24 (32.0%)	0.01	0.35 (0.2-0.76)
Breastfeeding problems	10 (13.5%)	11 (14.7%)	0.97	0.91 (0.4-2.3)
Other	1 (1.4%)	2 (2.7%)	0.99	0.51 (0.05-5.0)

Results are expressed as proportions (%).

The dramatic effects on the physiological progress of labour found in the study of Klaus *et al.* (1986) did not occur in this study. This might be because the companionship provided was less effective, medical intervention was less frequent, or because the adverse environmental effects were less intense, creating less scope for improvement. The latter explanation is most likely, as the participants differed from those in the Guatemala study in that they were Western, educated urban working-class women in a familiar community hospital. On the other hand, the

reduction in labour duration and complications in a high-technology environment demonstrated in the study of Kennell *et al.* (1988) may in part have been related to the lower rate of medical interventions, particularly epidural analgesia, in their support group. Epidural analgesia was not available to our patients.

The direction of blood pressure changes in our study was consistent with reduced anxiety in the supported group, but these changes were small.

Companionship, however, had a striking effect on the way that the participants reported

Table 5. Comparison of randomized groups with retrospectively selected control group. Data expressed as mean (SE) values or proportions (%)

	Randomized groups				Retrospective control group	
	n	Support	n	Control		
1. Baseline data						
Age (years)	91	20.5 (0.36)	97	20.3 (0.28)	30	20.4 (0.47)
Gestation (weeks)	92	39.4 (0.16)	97	39.6 (0.13)	30	39.5 (0.18)
Unmarried	92	73 (79%)	96	78 (81%)	30	25 (83%)
Race: Asian	92	12 (13%)	97	13 (13%)	30	3 (10%)
Black	92	7 (7.6%)	97	1 (1.0%)	30	0 (-)
Coloured	92	73 (79%)	97	83 (86%)	30	27 (90%)
Education >10 years	92	58 (63%)	95	61 (64%)	30	21 (70%)
2. Outcome						
Labour duration (h)	92	9.6 (0.41)	97	10.2 (0.50)	30	12.2 (0.97)
Birthweight (g)	92	3093 (45.5)	97	3116 (42.5)	30	3250 (67.6)
Trait anxiety score	92	40.2 (0.94)	96	39.8 (0.90)	29	38.2 (2.1)
State anxiety score	92	28.2 (0.85)	96	37.8 (1.10)	30	36.7 (1.92)
Labour pain severe	92	53 (57.6%)	96	76 (79.2%)	29	23 (79.3%)

experiencing labour. The various measures of labour pain were significantly reduced in the support group, and analgesia was needed significantly later after entry to the study. Supported women reported far more frequently feeling that they themselves had coped well during labour. If feelings of competence initiated during labour, a time of intense emotional impressionability, are of importance to a woman's ongoing sense of competence as a mother and ability to breastfeed successfully, then this finding is of considerable importance.

In recent years, the direct benefits of breastfeeding for the physical health of babies have been increasingly recognized (Inch 1989). The possible contribution of successful breastfeeding to factors such as satisfaction and happiness in motherhood, the development of positive mother-infant relationships and the emotional development of babies are more difficult to measure; but may also be of importance. In communities without access to safe alternative feeding methods, breastfeeding success is literally a matter of life or death. The main cause of the high infant mortality rate in many such communities is gastroenteritis resulting directly from bottle-feeding (Irwig & Ingle 1984). If the provision of modern obstetric care for such communities has contributed to a significant increase in bottle-feeding, then the contribution to infant mortality may in fact outweigh any beneficial effects on perinatal mortality rates.

Breastfeeding success appears to be vulnerable to a number of direct and indirect factors. Review of the available evidence from randomized trials (Inch & Garforth 1989) has shown that breastfeeding success is adversely affected by restricted breastfeeding, giving free formula samples to breastfeeding mothers, combined oestrogen/progesterone contraception, and restricted mother-infant contact after birth (Thomson & Westreich 1989). It is promoted by general social support during pregnancy (Elbourne *et al.* 1989), antenatal breastfeeding education (Inch 1989) and postnatal support for breastfeeding mothers (Inch & Garforth 1989). Randomized trials of procedures not directly linked to breastfeeding but which depart from the conventional restrictions of the clinical environment have also been shown to have positive effects on breastfeeding success. These include ambulation during labour (Broadhurst *et al.* 1979) and early discharge from hospital (Hellman *et al.* 1962). These results indicate that

conventional hospital care may interfere with the development of the confidence needed to breastfeed successfully.

In our study, women in the support group experienced significantly greater breastfeeding success and fewer feeding problems, and were more likely to use a flexible approach to feeding times.

The possibility that factors other than the labour companionship could have accounted for these differences needs to be explored. The labour companions were not aware that breastfeeding was one of the end-points of the study, and it was confirmed in retrospect that they on no occasion discussed breastfeeding nor helped with the first feed after birth. They did not visit the participants in the postnatal wards. Occasionally participants would seek them out in the hospital and on one occasion at home, but only to show them how the baby was progressing, and breastfeeding advice was not given at this time either.

Differences in the progress of and interventions in labour might also have affected breastfeeding success. In fact, these were very small, except for slightly less use of analgesia in the support group.

The possibility must be considered that those who had received the labour support replied more positively to the subjective questions out of a desire to please the researchers. A good test of validity of the interview is given by the trait anxiety questionnaire, which is designed to measure long-term anxiety and should not be much affected by recent events. The consistency of these scores indicates that subjective bias between the groups is most unlikely.

To explain the pronounced and persistent effects on feelings, perceptions and behaviour of a relatively short-lived intervention, we need to accept the premise that labour is a time of unique sensitivity to environmental factors, and that events and interactions during labour may have far-reaching and powerful psychological consequences. Given the fact that very few human experiences approach in intensity the levels of stress, anxiety, pain, exertion and emotional tumult which occur during labour, this is not surprising.

We have attempted to analyse the characteristics of the labour support provided in this study. It was not informative except to the extent of simple advice derived from personal experience, as the companions had no medical, nursing

nor traditional midwifery experience, but all had children of their own. The factors we think were of importance are as follows: Firstly, the companions were not part of the hospital medical or nursing hierarchy, and therefore may have been seen as an ally without a vested interest in the hospital establishment. Secondly, they were drawn from the same community and would be able to communicate easily with and share common values with the participants. Thirdly, they were not known personally to the participants and this might have avoided feelings of having to meet expectations or keep up appearances which may occur when women are supported during labour by a friend, family member or known midwife or antenatal educator. Fourthly, the specific elements on which the companions were repeatedly reminded to concentrate were comfort, reassurance and praise. The last was emphasised because of our hypothesis that an important way in which the clinical environment might impair the process of birth and adaptation to parenthood might be by undermining women's sense of achievement and development of confidence as mothers. Fifthly, the emotional support given seemed to be genuine. The companions worked as volunteers (though the small expense allowance might have been a motive) and were selected on the basis of appearing to have a genuine desire to help women in labour. They showed a remarkable ability to maintain a commitment to their vocation, with the exception of one supporter who after some weeks became distracted by personal problems and was withdrawn from her supporting role. She was asked to help with clerical work instead. An illustration of the extent to which the support and praise given was genuine is provided by the response of one of the supporters to the one occasion on which a participant visited her at home and brought her a gift. She said that she felt guilty as she had really done nothing; it was the woman herself and the nursing staff who had done everything. And finally, quite apart from anything the companions did or said, the fact that someone with no other function whatsoever was allocated on a full-time basis to be with the women in labour may have conveyed a message of concern for and value of them as individuals.

How applicable are these results to other hospital situations? The participants were nulliparous and on the whole young, urban working-class women who were politically and socially disadvantaged. Many were single, and

most were from a community with a conventional Christian ethic. It would be expected that the results would be directly applicable at least to urban working-class women giving birth in a hospital setting in most parts of the world. How best to adapt the principles established in this study to more affluent communities, and those with very different cultural mores, will need further assessment. Further research will also be necessary to determine whether similar effects result from support by other categories of companions, particularly if differing from those in this study by being non-voluntary workers, part of the hospital hierarchy or an associate of the women in labour. The role of male partners, in particular, involves complex and variable relationship factors that are difficult to assess.

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