Int. J. Prenatal and Perinatal Psychology and Medicine Vol. 12 (2000) No. 1, 97–107

An Intervention to Reduce Distress in Mothers of Very Preterm Babies

Cynthia J. McVey, Catherine A. Niven**, Samuel A. Ibhanesebhor, and Layla AlRoomi*

* Glasgow Caledonian University, Department of Psychology, Glasgow
** Department of Nursing, University of Stirling,
*** Glasgow Royal Maternity Hospital, Glasgow

Keywords: mothers, preterm babies, emotional distress, auditory intervention

Abstract: Mothers of preterm babies have been found to experience an emotional crisis that includes feelings of anxiety, guilt, distress and depression. In addition, mothers have expressed feelings of helplessness as they find themselves without control over their situation and are separated from their babies whose survival needs take precedence. The aim of this study was to select and test an intervention (making a tape recording of mother's voice for the baby) intended to reduce distress in mothers of very preterm babies in the Neonatal Intensive Care Unit (NICU). Despite the small sample size (n = 6) analysis using t tests showed a significant post- versus pre-intervention reduction in anxiety in mothers of preterm babies of 23 to 30 weeks gestation. All of the participants expressed pleasure at having made a tape recording to be played to their babies in their absence. The making of a tape recording for their very preterm babies is therefore recommended as an intervention to reduce distress in mothers.

Resumo: *Uma interverção para Reduzir o Estressede Mães de Bebês Pretermo de Muito Baixo Peso.* As mães de bebês pretermo sofrem uma crise emocional que envolve sentimentos de ansiedade, culpa, estresse e depressão. Além disso, as mães têm se sentem desamparadas em frente a uma situação onde elas não exercem controle e são separadas do seus bebês, já que a sua sobrevivência tem prioridade. O objetivo deste estudo foi selecionar e avaliar uma intervenção (gravação da voz da mãe para o bebê) com a intenção de reduzir o estresse de mães de bebês pretermos na Unidade de Tratamento Intensivo (UTI) Neonatal.

Apesar da pequena amostra (n = 6) os resultados (test t) mostraram uma redução significativa do estresse de mães de pretermos de 23 a 30 semanas de idade gestacional, após a intervenção. Todos os participantes externaram seu prazer em preparar a fita para ser tocada para os seus bebês, na sua ausência. Portanto, este tipo de intervenção para os bebês extremamente pretermo é recomendada, a fim de que possamos reduzir o estresse de suas mães.

*

Correspondence to: Dr. Cynthia McVey, Department of Psychology, Glasgow Caledonian University, Cowcaddens, Glasgow G4 OBA

So for the mother's sake the child was dear,
And dearer was the mother for the child
(Coleridge, Sonnet)

Introduction

The birth of a preterm baby has been described as an acute emotional crisis for the mother, and interviews have revealed that despite having a cognitive awareness of the possibility of preterm delivery, mothers were shocked by preterm labour and were emotionally unready when it occurred (Kaplan and Mason 1960). Furthermore, studies have demonstrated that many parents felt anxious and guilty, and believed that somehow, something they had done during the pregnancy had caused the preterm delivery (Brazelton, 1982; Kennedy 1973; Slade, Redl and Manguten 1977).

It has also been found that once delivered, the uncertainty surrounding the survival and ultimate health of very preterm babies led to intense distress for a majority of parents (Bennett and Slade 1991; Gennaro, Brooten, Roncoli and Kumar 1993). In addition, "mothers feel helpless and useless, separated from the baby" (Kaplan and Mason 1960; p. 542). It is not, therefore, surprising that Bennett and Slade (1991) utilising the General Health Questionnaire, [GHQ], (Goldberg 1972) and the Edinburgh Postnatal Depression Scale, [EPDS], (Cox, Holden and Sagovsky 1987) found high levels of distress and symptoms of depression in mothers of preterm babies of 28 and more weeks gestation. This study also found that the degree of neonatal risk was significantly, positively correlated with emotional distress and depressive symptoms. Mothers of babies who are very sick have been found to be more depressed and more anxious than those whose babies are less sick (Blumberg 1980). However, utilising a Depression Adjective Check List, (Lubin, 1967) and a State-Trait Anxiety Inventory, (Spielberger, Gorush and Lushene 1970), Gennaro (1988) found increased depression *and* anxiety associated with the degree of prematurity not of illness in babies of under 37 weeks gestation.

Johnson (1983) suggested that the less prepared parents were for the environment of NICU the more anxiety they experienced. Parents of babies in NICU have been found to have high anxiety levels with 76% of parents describing emotional problems during the first stages of hospitalisation of their babies, as demonstrated by increasing use of tranquillisers and, on occasion, admission to hospital for hypertension (Harper, Sia, Sokal and Sokal 1976).

High levels of anxiety experienced by the parents of preterm babies may be exacerbated by the appearance of these babies who are underdeveloped, tiny, vulnerable, unattractive and very different from term babies. Parents may be unprepared for the appearance and behaviour of their very preterm baby and be very upset by how their baby looks (Brooks and Hochberg 1960; Dion 1974; Dyson and Fewell 1986; Klein and Stern 1971; Parke and Tinsley 1982; Redshaw, Rivers and Rosenblatt 1985). Mothers have been quoted as saying that visiting NICU is like going to a zoo containing many peculiar creatures; that the baby was like. "a turtle without a shell; a frog; a chicken; looked awful." (Kaplan and Mason 1960, p. 542).

The care of these babies is outwith their mothers' control as it is determined by the survival needs of the baby and the operation and practices of the NICU

which involve separation of the babies from their mothers. Therefore it is hardly surprising that Bennett and Slade (1990) outlined reports of feelings of lack of control in mothers of such babies, and that there are concerns relating to the effects of separation on maternal bonding.

Recent research has established that separation from their babies was experienced by mothers as stressful and was temporarily disruptive of attachment during the time the babies remain in hospital (Niven, Wiszniewski and AlRoomi 1993). A high proportion of the mothers who participated in that study which was carried out in Glasgow Royal Maternity Hospital, the hospital where this study was based, expressed feelings of helplessness – they could not do anything to help their babies – and a sense that the babies were not really theirs, but 'belonged' to the staff. Although these feelings generally dissipated once the babies went home, they caused deep distress to the mothers during the period of the babies' stay in hospital and added considerably to the load of stress which they experienced at that time (Niven, Wiszniewski and AlRoomi 1993).

Therefore evidence indicates that delivery of a preterm baby is distressing. Mothers experienced depression, (Cox, Holden and Sagovsky 1987; Bennett and Slade (1991), anxiety, (Gennaro 1988; Spielberger, Gorush and Lushene 1970; Caputo and Mandell 1970; Klein and Stern 1971; Lynch and Roberts 1977; Parke and Tinsley 1982), and lack of control (Bennett and Slade 1990). However, the aforementioned research was carried out on mothers of babies of more than 28 weeks gestation. The increasing medical expertise and advances in technology have enabled the survival of very preterm babies of as short as 23 weeks gestation. The mothers of these babies may experience heightened anxiety and depression due to the fragility of their babies who are at the forefront of survival (Cooke 1994).

The aim of this research was to select and test the efficacy of an intervention intended to reduce anxiety, depression and hostility in the mothers of very preterm babies of 23 to 31 weeks' gestation. The study was carried out in two parts. Phase 1 was initially carried out in order to test the sensitivity of the selected instruments and to gain information from interviews that might suggest a suitable intervention. Phase 2 consisted of the Intervention study.

Phase 1

Materials and Methods

Participants

The participants were twenty-two mothers of babies between 23 and 31 weeks gestation i.e. very preterm (VPT) in the Neonatal Intensive Care Unit (NICU). The return rate in the (VPT) group was 16 mothers, (72%; age 22–34).

Thirty mothers of healthy term babies (T). The return rate in the (T) group was 16 mothers, 53%; age 19–29).

Procedure

Ethics committee approval was obtained. All participants gave informed consent. Participants were asked to complete a maximum of two Multiple Affect Adjective

Check Lists (ACL), on two days and to be interviewed or, if privacy was impossible, and the mother preferred, she was asked to complete the interview questionnaire in writing.

Selection of Instruments and Intervention

The methodology used in previous studies of depression and anxiety in preterm mothers included the use of questionnaires such as the GHQ and the EPDS. The NICU staff of Glasgow Royal Maternity Hospital was concerned that completion of such questionnaires might be unsuitable for mothers of very preterm babies who are still in NICU because they might find them distressing. However, it was important to gain some structured information regarding emotional state of the mothers of very preterm babies.

The Multiple Affect Adjective Check by Zuckerman and Lubin (1965) was considered to be a potentially suitable instrument since it does not take too long, or too much cognitive or emotional effort to complete. The ACL is a commonly used instrument in research involving the assessment of emotional states. It provides measures of two of the clinically relevant negative affects, which have been, highlighted by previous research, namely anxiety and depression. A measure of hostility is also included in the ACL. Since the mothers of very preterm babies may be grieving for the loss of the perfect, healthy baby which they expected to deliver, they may experience anger and hostility which is understood to be a part of bereavement (Parks 1972). Therefore, this measure of hostility was considered to be useful. An additional adjective, 'helpless', was added to the ACL, to tap the dimension of lack of control, which previous studies have suggested may be a feature of the participants' experience. (Kaplan and Mason 1960; Niven, Wiszniewski and AlRoomi 1993).

Previous research studies have utilised lengthy interviews once the preterm babies have been discharged from hospital. These have revealed retrospective in-depth information regarding the concerns of these mothers (Crnie, Greenberg, Ragozin, Robinson and Basham 1983). Again, staff concerns and ethical considerations precluded their use in this study. As the babies were still in NICU, participants could not be subjected to lengthy formal interviews, which might make them confront complex, and perhaps upsetting, thoughts and feelings. Very simple, set interviews were therefore devised which involved asking 5 'open' questions. They were framed in much the same way as questions which friends might ask.

1. How are you?
2. How is your baby?
3. Is there anything in particular you would like to do with or for your baby?
4. Is there anything you would like to say about how you feel about your baby?
5. Have you any other comments?

Results

The results of the t test on anxiety scores revealed a significant difference between preterm and term mothers' anxiety ($t = 5.64$, $p = 0.0001$); depression ($t = 3.66$; $p = 0.0005$) and hostility ($t = 2.27$; $p = 0.01$).

Seventy-five percent of the mothers of the very preterm babies selected the adjective 'helpless' from the Multiple Affect Adjective Check Lists ACL. None of the mothers of the term babies selected "helpless".

Interview Data

Very Preterm (VPT) Babies: Mothers' Interviews

Sixteen mothers of preterm (VPT) babies were interviewed; nine (53%) said that they were anxious and worried, four (23%) expressed strong feelings of helplessness.

Interestingly, two of the mothers (12%) said that they had been afraid to look at their babies when they were born as they thought they might "have bits missing". It was apparent that these mothers thought that babies developed a part at a time.

Staff were praised by eight (47%) of the mothers; they talked about how good, caring and how they explained everything. All of the mothers were very unhappy about having to go home without their babies.

All of the mothers expressed anxiety and distress about having to leave their babies behind in hospital.

Term Mothers' Interviews

Thirteen of the term (T) mothers were interviewed; twelve (92%) said that they were fine. Similarly the staff were praised, with six (46%) mothers commenting on their help and kindness.

Discussion

The results of the t tests indicate a significant difference in anxiety, depression and hostility between term mothers and mothers of very preterm babies in the Neonatal Intensive Care Unit (NICU). These results support similar findings in mothers of 'older' preterm babies.

While it is acknowledged that the term mothers do not provide a perfect control group, the (T) group mothers did provide a useful comparison group for the mothers of very preterm babies. The methodology was statistically sensitive enough to demonstrate measurable differences between the preterm and term mothers without exacerbating their distress. High levels of anxiety in the very preterm babies' mothers along with their expressed concerns and upset indicates that some intervention might be appropriate. The information gathered in the interviews was used to identify specific concerns of the very preterm (VPT) mothers with a view to selecting a suitable intervention.

Selection of Intervention

It was evident from Phase 1 that distress was caused to the mothers of very preterm babies by having to leave their babies behind in hospital and that the mothers felt that they could do nothing for their babies. This supports Kaplan and Mason's (1960) findings that mothers felt helpless, useless and separated from the baby. After due consideration the possibility of these mothers making a tape recording

of their voices for their babies to leave in the NICU in their absence was assessed, particularly with reference to the potential effects on the babies.

Katz (1971) played tape recordings of mothers' voices for 12 hours per day to a group of preterm babies. The experimental group showed increased auditory and visual function at 36 weeks GA compared to the control group. Segall (1972) using a tape of mothers' voices for 30 minutes per day, reported that the preterm exposed to the tape, showed more adaptive responses than that those who were not so exposed. Furthermore, a study by de Roiste and Bushnell (1991) found that preterm infants in special care (a less intensive form of care than NICU) sucked on pacifiers to hear their mothers' tape-recorded voices. This finding implies that the sound of the mother's voice was experienced as reinforcing and thus may be comforting. However, weight gain was found to be less rapid when a group of babies of 34 weeks GA were exposed to mother's voice compared to when they were stimulated by a lullaby (Chapman 1978).

Research has shown that exposure to mother's voice is not likely to be harmful and may be beneficial to preterm babies (Katz 1972; Segall 1972). Mothers who have to leave their babies in hospital may benefit (may feel less helpless and distressed) from making a tape recording of their voices to be played to their babies. In addition, the tape recording could be used as an intervention to reduce post-procedural and spontaneous distress in the babies.

Intervention Study

Introduction

This study was undertaken to test the efficacy of mothers making a tape of their voices for their very preterm babies in reduction of the mothers' anxiety, depression, hostility and general distress.

Materials and Methods

Design

The design of this study was a within participants, repeated measures with two conditions, before and after making the tape. Paired t tests were carried out on the mean scores on anxiety, depression and hostility of the Multiple Affect Adjective Check Lists (ACL) and qualitative analysis was carried out on the interviews in both conditions.

It is acknowledged that a control group would have been useful. However, it was considered unethical not to give *all* mothers the opportunity to make a tape for their babies.

Participants

Ten mothers (age 24–35), of very preterm infants in intensive care whose babies were expected to be receiving oxygen support for at least one week. For ethical reasons, mothers of babies who were no longer in need of oxygen, or whose babies had a gestation age of over 31 weeks who expressed interest in making tapes were

asked to make a tape and the tape was played to their babies. However, their data were not collected.

Although all 10 mothers made the tape-recording, only seven were interviewed and six completed the ACL. The completion rate was 60%.

Recruitment

Ethics committee approval was obtained. All participants gave informed consent. Mothers were asked if they wished to make a tape recording for their babies. It was emphasised that the tape would be absolutely confidential and that *no one* would listen to the tape other than to set the sound level at the beginning of each intervention. It was made clear that although the tape would be played to the baby when he/she was alert, quiet and stable, it might also be used as a post-procedural intervention and/or on observation of spontaneous signs of behavioural distress in the baby e.g. crying or thrashing about.

It was very important that the mothers were not misled into believing that they were making a tape for their babies to listen to, when it was only going to be used twice, in Non-Intervention and Intervention conditions. Therefore, I was present in the NICU for some periods at different times of the day ranging from 6.30 a.m. to 11.30 p.m. in order to play the tape. The time taken thus restricted the number of participants who could be used in the study.

Instruments and Procedure

As described in Phase 1, with the addition of the following.

Set Interview

The following additional question was added to the set interview: "How do you feel about having made a tape for your baby?"

Recording

The tape recorder used to record the mother's voice was the Saisho Voice Activated Microcassette recorder, variable control voice activator, sensitivity control, two speed, MC 600. Mothers were asked, if possible, to talk for five minutes with each tape recording timed, to assess the duration of the individual recordings. It was suggested that they might wish to record while talking to the baby in NICU. If not, they were given a tape recorder to take home and were told that they might want to read a story to their baby but not to sing or read nursery rhymes as this might have introduced the additional and potentially confounding factor of rhythm.

The opportunity was given for mothers to record a tape in privacy, in a sound studio at Glasgow Caledonian University. However, it became apparent that as this would entail separation of very anxious mothers from their babies it was inappropriate. A director's microphone was supplied with the tape recorder. However, mothers did not wish to use this, preferring to talk directly into the machine. Therefore the recording was not of the best quality. Some mothers felt more comfortable recording while they were visiting and actually talking to the baby rather than making the tape in the ward or in quiet, on their own. In these cases, a

great deal of background noise was included in these recordings e.g. the clicking of the apnoea monitor could be heard distinctly on the tape. Nevertheless, the mothers' voices were clearly audible to an adult listener. As preterm babies have auditory ability (Lecanuet, Granier-Deferre, Jacquet, Capponi and Ledru 1993; Shahidullah and Hepper 1993) it was expected that they would be able to hear the recording.

The volume of the recording was set, prior to each playing to the preterm infant, at a level which was audible to me but not loud when the recorder was held close to the ear and audibility was checked by the mother or a member of staff when possible. The recording of mothers' voice was played to their babies from start to finish and removed from the incubator, rewound and replayed, if necessary.

Collection of Maternal Data

Method was as above with the addition of the following.

Mothers completed the Multiple Affect Adjective Check Lists (ACL) and Interviews before and after making the tape. The time gap varied between two and five days. After the tape was made, the semi-structured interview included the additional question. "How do you feel about the use of your tape to 'settle' your baby?"

Mean scores for the mothers were calculated from the 2 pre-tape ACL and from the 2 post-tape ACL and paired t tests computed.

Results

Using Zuckerman's Adjective Check list a one tailed t test showed a significant difference in mothers' Anxiety pre and post-tape. There was no significant difference in Depression or Hostility pre and post-tape as it is shown in Table 1.

Table 1. Mean Anxiety, Depression and hostility scores for mothers of very preterm baby's pre and post tape

	Anxiety Mean/sd	Depression Mean/sd	Hostility Mean/sd
pre-tape	15 ± 1.05	20.167 ± 4.84	11.083 ± 1.828
post-tape	12.17 ± 4.05	18.083 ± 4.85	10 ± 3.209
t value	1.97*	1.34	1.23

* significant different between pre-tape and post tape using one-tailed t test at < 0.05

Discussion

It appears that even with this very small sample size there is a positive effect to be gained from asking mothers to make a tape recording of their voices for their babies. There was a significant difference in anxiety scores before versus after making the tape. It may be that the anxiety expressed at leaving the babies is reduced by the knowledge that the mothers have left "something of themselves'"

in the NICU, which might benefit their babies. However, time is a confounding factor. The mothers were given up to one week to complete the tape and most returned a completed recording within four days. Nevertheless, the positive finding may reflect the survival of these mothers' babies for another few days during which there may be increased stability of the baby. Furthermore, mothers may be adjusting to the stress (Selye 1957) and recovering from the physical and psychological trauma of preterm delivery. It would, therefore, have been useful to have had a control group to check maternal change over time without making the tape.

The interviews before and after making the tape were analysed. Before making the tape three (42%) of the mothers were tired and two (29%) were sore. One said that she was "Recovering, I'm made of strong stuff". Seven (100%) of the mothers were worried/tense/upset. Five (71%) of the mothers described their babies' conditions as stable and one as critical. Two (29%) of the babies were described as small. Seven (100%) of the mothers of the preterm babies expressed the desire to touch, hug and hold their babies.

After making the tape two of the mothers were still very worried about their babies. Two said that they were not as upset, whereas, one mother said that she was "not as good as yesterday" (before she made the tape). However, the reason for this was unrelated to the baby and the making of the tape recording. One mother was more hopeful and one said she was very well. One mother also said she was tired. Two of the mothers asked if some sort of counselling was available. One of the mothers who had been transferred from another town for appropriate NICU support, wanted me to 'counsel' her husband as well as herself as she was concerned about how he was coping with separation from his wife and their baby.

Two (29%) of the babies were described by their mothers as being very well, three (43%) were improving, one (14.5%) was the same and one remained critical. Four (57%) of the mothers again expressed the wish to hug their babies and two wanted to feed them, one wanted to take her baby home.

In summary, before making the tape all of the mothers were worried and upset. Afterwards, only two were still very worried and only one mother said that she felt worse but explained that this was for reasons unrelated to her feelings about her baby.

The Making of the Tape

Seven (100%) of the mothers felt very happy at having made the tape. They expressed sentiments like, "I felt useful having left the baby something from me and that he can hear my voice and know I and his family love him." One of the mothers said that she treated the tape like a conversation she and her baby had together. A second mother told me to listen to the tape if I wished - the contents were also like a conversation, with lots of encouragement to the baby to be strong and to get well. One mother did not know what to say and so read a story onto the tape. Three (43%) reported that they had felt apprehensive about making the tape but once they 'got going' there was no problem.

These interviews revealed encouraging support for this intervention with mothers feeling that they were leaving something for their babies in their absence.

Conclusion

All of the mothers were upset prior to making the tape for their babies. After making the tape two were still very worried, one felt worse (because of a situation unrelated to the baby or tape making), two were not as bad, one was more hopeful and one was very well; four expressed reduced anxiety. As with the changes in the Multiple Affect Adjective Check Lists (ACL) the interview analysis revealed positive changes in the mothers' levels of distress. These results may reflect mothers' adjustment to the stress and anxiety they are experiencing. They meet other mothers who have similar problems in the NICU and are also able to see the display of photographs of babies who have been in the NICU and are now well, and read the letters from mothers of these babies. The improvement in mothers may also be related to an improvement in the condition of their babies and/or to the babies continued survival without an increase in problems.

Five of the babies prior to making the tape were described as being stable, two as awfully small and one as critical. After making the tape two babies were described as very well, three were improving, one was the same and one was still critical. It could therefore, be said that there was an improvement in the condition of five of the babies although these descriptions were subjective and so might reflect the mere outlook of the mothers. However, given this, and the aforementioned confounding factors, it is impossible to say that the improvement in the mothers' feelings is solely associated with the making of the tape. Perhaps the making of a tape recording to comfort their babies relieved the mother's anxiety.

While there may be many factors involved in the changes in emotional distress experienced by the mothers, it is undeniable from the evidence of the interviews that these mothers liked making the tapes. It made them feel useful, and that they were leaving something of themselves for their babies when they could not be with them.

References

Bennett DE, Slade P (1990) Reactions of mothers of premature babies. Midwife, Health Visitor and Community Nurse 26: 323–326

Bennett DE, Slade P (1991) Infants born at risk: Consequences for maternal post-partum adjustment. British Journal of Medical Psychology 64: 159–172

Blumberg N (1980) Effects of neonatal risk, maternal attitude and cognitive style on early post-partum adjustment. Journal of Abnormal Psychology 89: 139–150

Brazelton TB (1982) Behavioural assessment of the premature infant: Uses in intervention. In: Klaus MH, Robertson MO (eds) Birth Interaction and Attachment. Johnson and Johnson, Skillman, NJ

Brooks V, Hochberg J (1960) A psychological study of "suteness". Perceptual and Motor Skills 11: 205

Caputo SV, Mandell W (1970) Consequences of low birthweight. Developmental Psychology 3: 363–383

Cooke RWI (1994) Factors affecting survival and outcome at 3 years in extremely premature infants. Archives of Disease in Childhood 71: F28–F31

Cox J, Holden J, Sagovsky R (1987) Detection of postnatal depression: Development of the 10 item Edinburgh Postnatal Depression Scale. British Journal of Psychiatry 150: 782–786

Crnic K, Greenberg M, Ragozin A, Robinson N, Bashum R (1983) Effects of stress and social support on mothers and premature and full-term infants. Child Development 54: 209–217

Dion KK (1974) Children's physical attractiveness and sex as determinants of adult punitiveness. Developmental Psychology 10: 772–778

Dyson L, Fewell R (1986) Stress and adaptation in parents of young handicapped and non-handicapped children: A comparative study. Journal of the Division for Early Childhood 10: 25–35

Gennaro S (1988) Postpartal Anxiety and Depression in Mothers of Term and Premature Infants. Nursing Research 37(2): 82–85

Gennaro S, Brooten D, Roncoli M, Kumar S (1993) Stress and Health outcomes amonvg mothers of low-birth-weight infants. Western Journal of Nursing Research 15(1): 97–113

Goldberg DP (1972) The detection of psychiatric illness by questionnaire: A technique for identification and assessment of non-psychotic psychiatric illness. Maudsley Monographs, No. 21. Oxford University Press, London

Harper R, Sia C, Sokal S, Sokal M (1976) Observations on uurestricted parental contact with babies in the neonatal intensive care unit. Journal of Paediatrics 90: 441–445

Johnson SH (1983) Parents of the premature infant. In: Sasserayth VJ (ed.) Minimizing high risk parenting. Johnson and Johnson, Skillman, NJ

Kaplan F, Mason E (1960) Maternal reactions to premature birth viewed as an acute emotional disorder. Journal of Orthopsychiatry 30: 539–547

Kennedy JH (1973) The high risk maternal infant acquaintance process. Nursing Clinics of North America 8: 549–556

Klein M, Stern L (1971) Low birthweight and the battered child syndrome. American Journal of the Diseases of Childhood 122: 15–18

Lubin B (1967) Depression Adjective Check list. Educational and Industrial Testing Service, San Diego, CA

Lynch MA, Roberts J (1977) Predicting child abuse: Signs of bonding failure in the hospital. British Medical Journal 60: 624–626

Niven CA, Wiszniewski C, AlRoomi L (1993) Attachment in mothers of pre-term babies. Journal of Reproductive and Infant Psychology 11: 175–185

Parke RD, Tinsley B (1982) The early development of the at-risk infant. In: Bricker DD (ed.) Intervention with At-Risk and Handicapped Infants. University Park Press, Baltimore

Parks CM (1972) Bereavement. Tavestock, London

Redshaw ME, Rivers RPA, Rosenblatt DB (1985) Born too Early. Oxford University Press

Slade CI, Redl OJ, Manguten HH (1977) Working with parents of high risk newborns. Journal of Obstetric and Gynecologic Nursing 6: 21–26

Spielberger C, Gorsuch R, Lushene R (1970) Manual for the State-Trait anxiety Inventory. Consulting Psychologists Press, Palo Alto, CA

Zuckerman M, Lubin B (1965) Manual for the Multiple Affect Adjective Check List. Educational and Industrial Testing Service, San Diego