

Open Research Online

The Open University's repository of research publications and other research outputs

Fathers' expectations and experiences of childbirth: implications for postnatal adjustment

Thesis

How to cite:

Dalton, Louise (2000). Fathers' expectations and experiences of childbirth: implications for postnatal adjustment. PhD thesis The Open University.

For guidance on citations see [FAQs](#).

© 2000 The Author

Version: Version of Record

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk

Oxford Doctoral Course in Clinical Psychology

Fathers' Expectations and Experiences of Childbirth:
Implications for Postnatal Adjustment.

Louise Dalton

July 2000

Dissertation submitted in part fulfilment of the OU/BPS Doctorate in
Clinical Psychology.

Approximately 25 000 words

AWARD DATE: 12 September 2000

Acknowledgements

I would like to thank all the parents who gave their commitment and time to this project. The Oxfordshire community midwives were invaluable both in the planning stages and recruitment of participants. I am particularly grateful to Janet Knowles, Jane Sutton and Margaret Washington, for their practical assistance and encouragement. I would also like to thank the health visitors for their co-operation in obtaining the mothers' depression scores, and the staff in the Admissions Office for diligently printing the delivery log and discharge summaries.

I am particularly grateful to Karen Steinhardt for her continuous words of wisdom, enthusiasm and optimism. My thanks too, to Paul Griffiths and Mark Lenel for their clear and patient statistical advice, and to Myra Cooper for her guidance and comments on drafts.

I would like to acknowledge the support and encouragement of my family, friends and the other trainees. Finally, Rich and Martin deserve a special mention for their unconditional love and understanding.

Table of contents

1.0	Introduction	1
1.1	Historical background of paternal birth attendance	1
1.2	Rationale for paternal birth attendance	2
1.2.1	Immediate implications of paternal attendance for mothers	3
1.2.2	Immediate implications of paternal attendance for fathers	4
1.2.3	Fathers' expectations and their actual experience	5
1.2.2	Summary	6
1.3	Paternal stress and mood during pregnancy	7
1.3.1	Couvade Syndrome	8
1.3.2	Quantitative assessment of paternal mood during pregnancy	9
1.3.3	Qualitative paternal reports during pregnancy	10
1.3.4	Summary	10
1.4	Paternal adjustment in the post-partum	11
1.4.1	Paternal stress post partum	11
1.4.2	Paternal mood post-partum	12
1.4.3	Summary	13
1.4.4	Implications of paternal mood	13
1.4.5	Summary	14
1.5	Implications of birth attendance on paternal-infant interaction	15
1.5.1	Implications of paternal birth experience for the infant	16
1.5.2	Implications of paternal birth experience for the paternal-infant relationship	16
1.5.3	Summary	18
1.6	Model of stress and coping	18
1.6.1	Transactional model of stress and coping	18
1.6.2	Empirical research	22
1.6.3	Summary	23
1.7	Factors influencing stress and coping	24
1.7.1	Social support	24
1.7.2	Depression	26
1.7.3	Social class	26
1.7.4	Life events	27
1.7.5	Experience of labour and delivery	27
1.7.6	Discrepancy between expectations and experience	29
1.7.7	Summary	29
2.0	Rationale	30
2.1	Aims of the study	32
2.2	Hypotheses	33
3.0	Method	35
3.1	Participants	35
3.2	Design	35
3.3	Measures	36
3.3.1	Biographical Information	36
3.3.2	Childbirth Schema Scale (CSS)	36
3.3.3	Hospital Anxiety and Depression Scale (HADS)	37
3.3.4	Edinburgh Post-natal Depression Scale (EPDS)	37
3.3.5	Short Form Social Support Questionnaire (SSQ6)	38
3.3.6	Ways of Coping Questionnaire (WCQ)	39
3.3.7	Social-Problem-Solving Inventory-Revised Short Form (SPSI-R)	40

	3.3.8	Parenting Stress Index (PSI)	40
3.4		Procedures	41
	3.4.1	Recruitment & Ante-natal Period	41
	3.4.2	Post-natal Period	42
	3.4.3	Objective delivery information	42
	3.4.4	Maternal Mood	43
	3.5	Summary of data collection protocol	43
4.0		Results	44
	4.1	Demographic data	44
	4.1.1	Response rates	44
	4.1.2	Sample characteristics	45
	4.2	Analysis	45
	4.2.1	Overview of the data analysis	45
	4.2.2	Paternal mood antepartum	47
	4.2.3	Paternal experiences of childbirth & objective obstetric information	50
	4.2.4	Coping and problem solving strategies	58
	4.2.5	Maternal and paternal depression post partum	62
	4.2.6	Post natal adjustment	62
	4.3	Additional findings	65
	4.3.1	Social support	65
	4.3.2	Obstetric factors and maternal mood	66
	4.3.3	Obstetric factors and parenting stress	66
5.0		Discussion	68
	5.1	Main findings	68
	5.2	Interpretation of findings	69
	5.3	Paternal mood antepartum	69
	5.3.1	Paternal mood and antenatal factors	71
	5.3.2	Paternal mood and expectations about labour and delivery	72
	5.3.3	Implications of control for antenatal preparation	73
	5.4	Paternal mood postpartum	74
	5.4.1	Anxiety postpartum	74
	5.4.2	Depression postpartum	75
	5.4.3	Depression and parenting stress	77
	5.4.4	Experiences of childbirth and parenting stress	77
	5.4.5	Obstetric complications and parenting stress	79
	5.4.6	Clinical and research implications of parenting stress	80
	5.5	Paternal expectations and experiences of childbirth	81
	5.5.1	Limitations of the Childbirth Schema Scale	82
	5.5.2	Discrepancy between fathers' expectations and experiences of childbirth	83
	5.5.3	Reported experiences and objective obstetric information	83
	5.5.4	Implications for future research	84
	5.6	Coping, paternal mood and expectations and experience of childbirth	85
	5.6.1	The Ways of Coping Questionnaire	85
	5.6.2	Coping and problem solving strategies associated with paternal mood	86
	5.6.3	Coping and problem solving strategies associated with paternal expectations of childbirth	87
	5.6.4	Clinical and research implications	88

5.6.5	Coping and problem solving strategies associated with experiences of childbirth	89
5.6.6	Implications for future research	90
5.7	Conclusions, clinical implications and directions for future research	92
	References	94
	Appendices	101

List of Tables

Table 1	Summary of research protocol	43
Table 2	Mean paternal and maternal ages (and standard deviation), marital status & social class of participants	45
Table 3	Mean scores and percentage reaching clinically significant levels of depression and anxiety on Hospital Anxiety & Depression Scale for expectant fathers and medical outpatients	48
Table 4	Frequencies and percentages of delivery mode, type of analgesia and birth complications.	51
Table 5	Repeated Univariate ANOVA analysis of paternal experiences of childbirth and mode of delivery for the labours experienced by fathers participating in the study.	53
Table 6	Comparison of mean paternal mood (and standard deviations) ante- and post partum.	54
Table 7	Discrepancies between paternal expectations and experiences of childbirth: related samples t tests	56
Table 8	Pearson's Product Moment and Spearman's Rank Order correlation matrix: Coping and social problem solving strategies, expectations and experiences of childbirth.	59

Table 9	Spearman's Rank Order and Pearson Product Moment correlation matrix: depression and anxiety ante- and postpartum.	61
Table 10	Spearman Rank Order and Pearson Product Moment correlation matrix: Parenting stress, postpartum mood and experiences of childbirth	63
Table 11	Univariate ANOVA of obstetric complications and overall parenting stress, parent and child domains.	67

Appendices

- 1 Measures used in the study**
 - Biographical information
 - Childbirth Schema Scale
 - Childbirth Schema Scale subscales and factor loadings
 - Hospital Anxiety & Depression Scale
 - Edinburgh post natal depression scale
 - Social Support Questionnaire (short form)
 - Ways of Coping Questionnaire
 - Social Problem Solving Inventory - Revised (short form)
 - Parenting Stress Inventory
- 2 Ethical approval and confirmation of indemnity**
- 3 Information sheets for participants and consent form**

Abstract

Objectives: This study aimed to explore the experiences of a group of first time fathers during the transition to parenthood, and identify factors which predict paternal adjustment postpartum. The transactional model of stress and coping (Lazarus & Folkman, 1984) was used as a framework to investigate the relationships between mood, coping strategies, social support, expectations and experiences of childbirth antepartum and six weeks after the birth.

Design: This was a prospective, postal questionnaire study.

Methods: Thirty five prospective fathers and their partners were recruited through parent education classes; data are reported for 26 of these. Fathers completed questionnaires during the third trimester of pregnancy, immediately following the birth and six weeks postpartum. Mothers' postnatal depression scores were obtained directly from health visitors. Adaptation to parenthood was considered in terms of reported paternal anxiety, depression and parenting stress.

Results: The study found evidence of clinically significant levels of anxiety antepartum, which decreased following the birth. Fathers reported their experience of childbirth to be more positive than they had expected, and this was largely independent of obstetric variables. Preliminary evidence suggests problem-focused coping strategies were associated with more negative experiences of childbirth. Adaptation to parenthood was best predicted by antenatal mood.

Conclusions: The implications of maladaptive and adaptive coping strategies for antenatal interventions are discussed and directions for future research outlined. Longer term follow up is required to explore the observed association between parenting stress, obstetric variables and experiences of childbirth.

1.0 Introduction

This review will initially outline the contextual background of paternal birth attendance, and discuss how themes emerging from this literature may be reflected in research regarding paternal mood during the transition to parenthood, with attendant implications for the infant and paternal-infant relationships. The transactional model of stress and coping will be presented as a theoretical framework to conceptualise adaptation to parenthood, and factors which may impact on the model will be outlined. This section will conclude with the rationale, aims and hypotheses of the present study.

1.1 Historical background of paternal birth attendance

Childbirth has historically been regarded as ‘women’s work’ and in many cultures this remains the case. Prior to the 1960’s, men were excluded from the delivery suite; objections to paternal presence included the increased risk of infection, belief that it would adversely affect the couple’s future sexual relationship and that fathers would create a nuisance by interfering or fainting (see Bedford & Johnson, 1988). However, in the late 1970’s pressure from the natural childbirth movement, and research evidence to counteract many of the claims used to inhibit paternal attendance, resulted in fathers being allowed access to attend the birth (Bartels, 1999). Coincident with a shift in the cultural definitions of masculinity and a recognition of the emotional importance of fatherhood (Obrzut, 1974), the last thirty years has witnessed an explosion of paternal birth attendance; a UK survey indicated 98% of expectant fathers intended to be present during labour and delivery (MacMillan, 1994).

1.2 Rationale for paternal birth attendance

Research in this country suggests that the majority of men want to attend the birth of their child and do not feel pressurised into doing so (MacMillan, 1994). Many expectant fathers now believe attending the birth to be integral to their role as a father, and highlight the opportunity to demonstrate a joint commitment to parenthood, to support their partner and provide protection and familiarity (Mckee, 1980; Palkovitz, 1987). Both expectant mothers and fathers hold strong beliefs about the importance of paternal birth attendance for the establishment of a father-infant bond (Palkovitz, 1987). Fathers unable to attend the birth have been reported to experience guilt for up to five months post-delivery; this has been attributed to popular misconceptions about the importance and irreversibility of parent-infant bonding (Palkovitz, 1982; 1985a). This guilt may also reflect a tacit societal pressure to be present at the birth (e.g. Lavender, 1997; Seel, 1994). May reports 'some men find it difficult to handle health care providers' subtle messages that men who were unwilling to coach their wives through labour were considered second-rate.' (May, 1982). This may be fuelled by research indicating the benefits of paternal presence for both mother and father.

1.2.1 Immediate implications of paternal attendance for mothers

Historically, much of the literature in this area has focused on the women's perspective. Some research suggests that women rate the support provided by their partners very highly (Enkin, Kierse & Renfrew, 1995), and partner support contributes to a mother's perception of a satisfactory birth experience (e.g. Block & Block, 1975; Pridham, Lytton, Chang & Rutledge, 1991;). Other reported benefits include the positive impact of such a shared experience on the couple's relationship (Bertsch, 1990; May 1982). Furthermore, a retrospective study of first-time fathers indicates women attended by their partners consistently reported less pain, required less medication, and had shorter labours (Berry, 1988). Conversely, emerging work suggests that partners not attending the birth may be a risk factor for the development of maternal post-traumatic stress type symptoms (Czarnocka & Slade, 2000). Fathers also describe positive feelings about being present at the birth, (e.g. Nichols, 1993; Chandler & Field 1997), and highlight a sense of being confirmed as the father of the baby (Hearn, 1984).

By contrast, re-emerging themes within the literature suggest that paternal birth attendance may have some negative sequelae for both mother and father. From the maternal perspective, Odent and others have argued that men may interfere or distract their partner, thus slowing down labour (e.g. DiMatteo, 1993; Odent, 1984). Odent has also suggested that men may find it difficult to cope with their partner's instinctual behaviour during labour, and proposed that this may account for a rise in the number of caesareans performed in recent years (Williams, 2000). A labouring woman may feel

she has to support a queasy or reluctant partner, in addition to the demands of labour (Draper, 1997), or be made to feel a failure if she wants pain relief (Hall, 1993).

1.2.2 Immediate implications of paternal attendance for fathers

A study of fathers' retrospective feelings about attending the birth of their children revealed that over 40% of responses concerned negative aspects of the experience (Nichols 1993). Further work in this area indicates a number of recurring themes which may contribute to stressful and anxiety provoking experiences of labour and delivery. Fathers consistently highlight the anguish at seeing their partner in pain, and report feeling limited by their lack of knowledge and inability to reduce the pain (Chandler & Field, 1997; Vehvilainen-Julkunen & Liukkonen, 1998; Nichols, 1993; Nolan, 1994). The salience of their partner's pain is reflected by work indicating that fathers rate the intensity of labour pains higher than equivalent ratings by their partner (Makkonen *et al.* 1981 cited in Vehvilainen-Julkunen & Liukkonen, 1998). Fathers experience considerable anxiety during labour and delivery; a study of both first and second time fathers revealed that over 60% of fathers felt very concerned about how their partner would cope, and that 3% feared their partner might die (Vehvilainen-Julkunen & Liukkonen, 1998). Men also worried about the welfare of the baby (50%), although other work indicates that for many fathers a clear hierarchy exists, with the health of their partner being paramount (McKee, 1980). Research consistently reveals that many fathers feel excluded by medical staff, and angry at the lack of consultation before intervention (Chandler & Field, 1997). Men report trying to control and hide these feelings of anxiety and anger from their partner (Berry, 1988; Chandler & Field, 1997). Men may also experience specific difficulties witnessing intimate physical examinations

of their partner (Seel, 1994) and violatory feelings similar to those experienced after rape have been well documented (see Jackson, 1997). These experiences may have a detrimental effect on the couple's sexual relationship (Seel, 1994).

1.2.3 Fathers' expectations and their actual experience

Reflecting on their experience of labour and delivery, fathers may express dissatisfaction at their own performance, which differed from a prenatal belief that they would be able to comfort and support their partner (Chandler & Field, 1997). Berry (1988) reported that first-time fathers viewed labour and birth as a stressful event, and were concerned about their ability to be labour coaches. Berry and Chapman (Berry, 1988; Chapman 1992) have argued that, in these circumstances, expectations of men as coaches may be unrealistic.

From the many behaviours which men may display during labour and delivery, Chapman (1992) identified three distinct roles which men may adopt: coach, teammate and witness. Men adopting the role of coach led or directed their partner through the birth, and actively assisted with breathing or relaxation techniques. Team-mates viewed themselves as one member of the team, and assisted their partner by responding to requests for physical or emotional support as appropriate. These fathers were less preoccupied with the need to be in control. Men adopting the role of witness formed the largest group, and viewed themselves as companions to provide emotional and moral support. Their presence was to observe the process and witness the arrival of their child. These fathers believed there was little physical assistance they could offer, and looked to other people to be in charge of the experience. Chapman (1992) and

Bartels (1999) have suggested that the range of different labour roles are not fully discussed with fathers when preparing for the birth, and emphasise the importance of identifying a role congruent with the father's personality, expectations and the couple's relationship. This implies that difficulties may arise from disparity between father's expectations and their actual experience of labour and delivery. However, a prospective study to empirically investigate fathers' expectations and experiences has not been conducted.

1.2.2 Summary

The research reviewed indicates high levels of paternal birth attendance, which many fathers consider integral to their role. Whilst some studies indicate that paternal birth attendance offers benefits to both mother and father; emerging research suggests labour and delivery may be a particularly stressful and distressing experience for fathers.

This raises important questions regarding fathers expectations of childbirth, and the extent of their prior anticipation or awareness of possible negative aspects of birth attendance antepartum. The next section evaluates evidence pertaining to paternal mood during pregnancy, and the extent to which this may be influenced by fathers' expectations about the approaching birth.

1.3 Paternal stress and mood during pregnancy

Fathers' experiences of pregnancy and the transition to parenthood has frequently been described as a period of significant stress, and is identified as a major life event in most life event scales (e.g. Diemer, 1997; Gerzi & Berman, 1981; Terry, 1991). Pregnancy necessitates a shift in men's roles, the stress of which may be heightened by a relative lack of role definition, negotiation or preparation for change (McBride, 1989; Diemer, 1997). From a psychodynamic perspective, their partner's pregnancy may re-arouse men's pre-Oedipal experiences, sibling rivalry and infantile fantasises, resulting in feelings of ambivalence, fear, guilt, envy, rivalry and jealousy (Duvall, 1971 cited in Obrzut, 1974; Gerzi & Berman, 1981). The stress of these changes may be exacerbated by additional factors including the termination of maternal employment (McBride, 1989), sexual frustration (Starn, 1993) and a lack of congruence between partners in their expectations about support and assistance throughout pregnancy (Mercer, 1990).

Empirical evidence of the stress associated with the transition and adjustment to parenthood is limited but drawn from a variety of sources, including the Couvade literature, direct assessment of paternal mood and qualitative paternal report. The aetiology of physical and psychological symptomatology experienced by men during pregnancy is difficult to isolate due to the large number of concurrent potentially contributory factors associated with this period. These might include fathers' expectations about the approaching birth; however, no research has investigated whether paternal expectations are related to the observed symptoms experienced antepartum.

1.3.1 Couvade Syndrome

The proposed changes to men's roles during pregnancy are closely linked to modern Couvade syndrome, used to describe physical and psychological symptoms experienced by men during pregnancy. Research has associated 39 distinct symptoms with Couvade syndrome, most frequently gastrointestinal disturbances which mimic common maternal symptoms during pregnancy (Brown, 1983; Clinton, 1987; Strickland, 1986). The estimated incidence of the syndrome and the consistency of symptoms experienced varies widely, ranging from 11% to more than 50% (see Clinton, 1987). The literature proposes a variety of explanations for the syndrome, many of which reflect an acknowledgement of the changes in men's roles during pregnancy, identification with the pregnant partner and anxiety precipitated by concern over the pregnancy (see Strickland, 1986 for a review). Empirical support for specific symptomatic aetiology remains equivocal; anxiety has been shown to be a significant predictor of Couvade symptoms (Strickland, 1986), although this was not supported by a second study (Longobucco & Freston, 1989).

In summary, the Couvade literature provides empirical evidence that for some prospective fathers the period prior to labour and delivery may be associated with anxiety, manifest in a range of physical symptoms. The underlying process(es) resulting in these symptoms has yet to be isolated.

1.3.2 Quantitative assessment of paternal mood during pregnancy

A relative paucity of studies have investigated paternal mood directly during pregnancy. Empirical evidence regarding paternal anxiety during pregnancy is provided by a comparison study of first time prospective fathers and a matched control group of men. The expectant fathers had significantly higher ratings of total anxiety, and of covert and overt (symptomatic) anxiety relative to the control group (Gerzi & Berman, 1981). Consistent with the proposed psychodynamic themes characterising this transition, the prospective fathers scored significantly higher on three variables of the Blacky Picture Test; Oedipal intensity, sibling rivalry and guilt feelings.

There is limited evidence regarding the impact of the proposed stresses associated with the transition to parenthood on levels of depression in prospective fathers. This remains an under-researched area, and the few available methodologically sound studies provide inconsistent results. A longitudinal study in America assessed the incidence of depression in couples during pregnancy and after birth. During pregnancy, 14% of prospective fathers reached clinical 'caseness' for depression; both male and female partners were depressed in an additional 4.7% of couples (Raskin, Richman & Gaines, 1990). This contrasts with a second, Portuguese study, indicating depression in 4.8% of a group of prospective fathers during pregnancy (Areias, Kumar, Barros & Figueiredo, 1996). These disparate findings may reflect cultural differences, or dynamic changes in paternal mood during the different trimesters of pregnancy, the first study sampled mood at the 34th week of pregnancy, in contrast to earlier assessment at 24 weeks in the second study. The low frequency of incidence in the second study prohibited further investigation of factors associated with paternal depression, and both

studies failed to address associated non-affective symptoms, such as concurrent anxiety, somatization or substance use. This remains an important area for investigation.

1.3.3 Qualitative paternal reports during pregnancy

Qualitative reports of prospective fathers' experiences suggest that pregnancy is often characterised by ambivalent feelings. On the positive side, men's thoughts often reflect themes of joy, self fulfilment, greater stability and maturity (Gerzi & Berman, 1981). However, fear around the health of the developing baby and safety of their partner during the birth are also recurrent themes, although these are often tacit concerns which fathers prefer to contain. Ambivalence may be expressed through anger at their partner, and doubts as to the timing of having a baby. Other feelings include fears about sexual contact with their partner and a sense of 'not being needed anymore' (Gerzi & Berman, 1981; McKee, 1980).

1.3.4 Summary

In summary, there is some evidence to suggest that prospective fathers experience symptoms of psychological disturbance, especially anxiety, during pregnancy, and report feelings of ambivalence concerning the transition to parenthood. The aetiology of symptoms experienced by fathers is difficult to elucidate due to the number and range of concurrent changes associated with this transition. The research in this area has so far failed to consider the possibility of an association between expectations of labour attendance and paternal antenatal mood.

1.4 Paternal adjustment postpartum

Theoretical perspectives and empirical evidence suggests pregnancy and birth attendance may be associated with stress for fathers. The actual arrival of a new baby necessitates further adjustment and change for both mother and father; negotiation of these tasks might also be predicted to have implications for paternal mood postpartum.

1.4.1 Paternal stress postpartum

Evidence suggestive of the stress experienced by fathers in the first few months of their new role is drawn from a range of sources. A Norwegian study found that 2% of first admissions with paranoid psychoses in men occurred in association with childbirth (Rettersol 1986 cited in Marks & Lovestone 1995). The incidence of infant homicide may also provide some insight into early parenthood; a child is four times more likely to be murdered (almost always by a parent) in the first year of life than at other times, and this risk is increased four times in the first three months of life. Research suggests that fathers are as likely as mothers to kill the new infant (see Marks & Lovestone 1995).

1.4.2 Paternal mood postpartum

Limited empirical research is available regarding paternal mood postpartum; the few available studies are restricted to depressive symptomatology and fail to consider wider indicators of psychological disturbance. Three studies measuring paternal postnatal depression between six and twelve weeks postpartum estimate the prevalence of depression to range from 4.8% - 16% of fathers. Work by Ballard and colleagues (Ballard, Davis, Cullen, Mohan & Dean, 1994) indicated 9% of new fathers reached the criteria for depressive 'caseness' at six weeks, rising to 29% over the first twelve months of fatherhood. However, comparison with a control group of fathers with older, pre-school children found no significant difference between the two groups at either time point, with 5% of the control fathers reaching 'caseness' for depression. There is evidence to suggest first-time fathers experience significantly higher levels of depression than more experienced fathers; this may reflect greater transitions in identity and lifestyle with the birth of a first baby, or that the changes involved in fatherhood may have failed to meet men's expectations (Ferketich & Mercer 1995).

Interestingly, Ballard and colleagues (Ballard *et al.* 1994) found a greater likelihood of depression in fathers if their spouses were depressed during pregnancy or in the first three months postnatally. This is consistent with a second study, in which the presence of depression in the partner, and a prior personal history of depression were the main contributors to the risk for postnatal depression in men (Areias *et al.*, 1996). Further work suggests that maternal depression may be associated with concurrent widespread 'anxiety and melancholy' in 40% of male partners (Lovestone & Kumar, 1993). By contrast, Raskin (Raskin *et al.* 1990) found a complementary pattern, whereby when

one member of a couple was dysphoric, the other was unlikely to be similarly affected. Ballard and Raskin both note an association between paternal depression and unemployment / manual or working class occupation. However, investigation of the risk factors associated with dysphoric mood has not been linked to the literature which indicates that birth attendance may be a stressful and distressing experience for fathers.

1.4.3 Summary

In summary, there is some empirical evidence to suggest that fathers may experience depressive symptoms postpartum. In extreme circumstances, the stress experienced by some fathers may be manifest in the elevated risk of infant homicide during this period. Research has failed to consider other symptomatic manifestations of psychological distress, and despite evidence that childbirth may be a stressful paternal experience, this has yet to be considered in the context of postpartum mood disturbance.

1.4.4 Implications of paternal mood

Parental mood postpartum has important implications not only for the individuals concerned, but also in terms of their relationship with their infant. Parents influence the socio-emotional development of their child through their role as the major source of stimulation for the child and a model of socially approved behaviour. Secondly, the security of the attachment relationship between both parents and their child is a crucial predictor of (amongst others), the infant's later ability to form socially competent relationships with peers and to approach challenging situations with persistence and enthusiasm. Although the maternal-infant relationship is the best predictor of later

sociability, fathers may indirectly contribute to the security of this relationship through the influence of their relationship with the child's mother (Lamb, 1982).

Extensive longitudinal research (see Murray & Cooper, 1997) has indicated the disruptive impact of maternal postnatal depression on infant social, communicative and cognitive development, with these effects persisting into childhood. Equivalent research with depressed fathers has yet to be conducted, although paternal depression has been demonstrated to be a strong predictor of father-infant attachment at eight months postpartum (Ferketich & Mercer, 1995). There is evidence to suggest non-depressed fathers may buffer the effects of maternal depression on infant interactive behaviour (Hossain, Field, Gonzalez, & Malphurs, 1994), but this must be considered in the context of the epidemiology of paternal depression, indicating co-morbidity between partners, and maternal depression as a risk factor for paternal depression (Areias *et al.*, 1996; Ballard *et al.*, 1994). Paternal depression may also impact on maternal mood through a likely reduction in the emotional and practical support that the father can provide during a depressive episode.

1.4.5 Summary

In summary, paternal depression may have implications beyond the immediate impact on the father, both directly on his relationship with the infant and, indirectly, on the maternal-infant relationship, through the influence on the parental relationship.

1.5 Implications of birth attendance on paternal-infant interaction

In line with increasing paternal birth attendance, research has focused on father involvement in infancy and variables which might influence the father's role in

caregiving, child rearing, affective and behavioural involvement (Palkovitz, 1985a). It is important to note that much of this research has been conducted without concurrent consideration of paternal mood postpartum.

Contemporary research on paternal involvement in delivery and extra contact has been strongly influenced by the concept of mother-infant bonding, arising from work apparently demonstrating the importance of early and extended contact with the infant during a critical period after birth, for the establishment of a mother -infant bond (e.g. Klaus & Kennell, 1974). This was mirrored by studies with fathers, emphasising the importance of early contact for the developing father-infant relationship (e.g. Greenberg & Morris, 1974). Many of these studies were subject to methodological flaws, and a review of fourteen studies concerning paternal birth attendance and early and extended contact with the infant provides no evidence for the long term impact of these variables (Palkovitz, 1985). However, the review suggests that paternal birth attendance may enhance the marital relationship and promote feelings of inclusion in the evolving family. Palkovitz proposes that the indirect effects of these outcomes may exert a more powerful impact on the father-infant relationship than the direct effects of early interaction with the baby.

The available research evidence does not support a direct link between fathers' birth attendance and father-infant bonding. However, three studies suggest that fathers' *qualitative* experience of childbirth may have a subsequent impact on the infant, and father-infant relationship.

1.5.1 Implications of paternal birth experience for the infant

Research from Scandinavia indicates a relationship between infants with colic and the paternal birth experience. Lehtonen (1994 cited in Wikander & Theorell, 1997) found that the infant was more likely to have colic if the father was disappointed with the birth, felt he should not have been present, thought his participation was of no value or assessed his partner's delivery to have been very painful. A second study found a significant correlation between the fathers' qualitative description of his experience of delivery, and the objective amount of crying in the infant. Diary observations revealed that for fathers with negative experiences of delivery, the infant cried more in the first weeks after birth, than if the experience had been a good one (Wikander & Theorell 1995 cited in Wikander & Theorell, 1997). However, this study failed to control for the possible confounding effects of complexity of labour and delivery.

1.5.2 Implications of paternal birth experience for the paternal-infant relationship

The quality of the paternal birth experience may also have implications for the father-infant attachment relationship. A longitudinal study of fathers from the last weeks of pregnancy to six months postpartum found the emotional quality of the paternal birth experience to be the most significant predictor of later paternal attachment (Peterson, Mehl & Leiderman, 1979). A more positive birth experience was associated with greater levels of father attachment, including ratings of father-infant interaction, involvement in caretaking, confidence in caring for the baby and reported emotional closeness.

The study also indicated a positive relationship between longer labours and greater paternal attachment (Peterson *et al.*, 1979). Obstetric complications have also been associated with greater paternal involvement with their infant one year later (Grossman & Grossman, 1980 cited in Lamb, 1982). These results may be considered counter-intuitive, as it might be predicted that longer labours would be associated with more obstetric complications and maternal pain and distress, factors which have been shown to contribute to negative paternal experiences (e.g Wikander & Theorell, 1997). However, obstetric complications may provide a greater opportunity for paternal involvement postpartum, or result in paternal 'compensation behaviour', (as manifest in more infant-involvement by fathers whose partners were less satisfied with the birth (Westreich, Spector-Dunsky, Klein, Papagergiou, Kramer, & Gelfand, 1991). This is difficult to reconcile with Peterson and colleagues first finding, and reports by Wikander and colleagues indicating the adverse association of negative paternal birth experiences with infant colic and crying. Further investigation is required to understand the processes underlying such observations, and in particular the link between paternal experience of labour and delivery, and objective obstetric information.

1.5.3 Summary

In summary, these studies provide preliminary evidence for the impact of the qualitative paternal birth experience on infant crying and paternal-infant attachment. A particular weakness of the research in this area is the failure to consider paternal birth experience, mood, and paternal-infant interaction concurrently, as it is logical to assume an interactional relationship between paternal mood and paternal-infant interaction.

1.6 Stress and coping

1.6.1 Transactional model of stress and coping

The research evidence reviewed thus far indicates a large number of changes and potentially difficult hurdles which must be negotiated during pregnancy, labour and delivery and early parenthood. Lazarus & Folkman (1984) present a transactional model of stress and coping which provides a theoretical framework to understand individual responses to the transition to parenthood. The model outlines three processes:

- **Primary appraisal - categorisation of the event with respect to its significance for individual well-being,**
- **Secondary appraisal - evaluation of the potential resources available for change,**
- **Coping - initiating a response.**

These three stages do not necessarily proceed sequentially, and remain in a dynamic cycle of appraisal and reappraisal, or transaction between the individual and the environment. Events are experienced as stressful when the demands of a situation are appraised as exceeding the resources that an individual has available.

Primary cognitive appraisals result in the categorisation of an event as irrelevant, benign-positive or stressful. Stressful appraisals include appraisals of harm/loss, threat and challenge. Threat refers to anticipated or potential harm/loss events, whereas challenge appraisals focus on the potential for growth and adaptation. Theoretically these appraisal are distinct, but in reality, complex and simultaneous appraisals are common (Lazarus & Folkman, 1984). Challenge is often mingled with threat, as the

possibility for mastery or gain associated with challenge also contains the possibility for harm or loss. Without this threat, a challenge appraisal would not be stressful. (Folkman, Chesney, McKusick, Ironson & Johnson, 1991). In the context of new parenthood, the arrival of a baby might be appraised as a challenge, with the opportunity for personal growth in a new role as a father; a simultaneous appraisal of the situation might include reference to the loss of previous freedom.

Secondary appraisals concern resources and options for changing the situation under scrutiny. This includes a judgement regarding available coping options, the likelihood that a given coping option will accomplish its aim (outcome expectancy), and the likelihood of successfully employing such a strategy (efficacy expectancy). Furthermore, this must include an evaluation of the implications of using such a strategy in the context of other internal or external demands and constraints.

Appraisals are influenced by individual psychological, sociological, health and contextual variables, including commitments, beliefs, values, goals, cultural background, gender and socio-political conditions. This wide range of modulating influences explains the wide variation in individual response to any given situation.

Primary and secondary cognitive appraisals form the basis for coping - the cognitive and behavioural responses employed to manage specific situations (Lazarus & Folkman, 1984). Coping efforts may be broadly categorised as problem focused and emotion focused. Problem focused forms of coping are directed at managing or altering the problem causing distress, and are generally employed when situations are appraised as amenable to change. Emotion focused strategies are used when appraisal

indicates that nothing can be done to modify the situation directly, and aim to modify the meaning of the situation, without directly altering the situation itself. The distinction between problem-and emotion-focused coping strategies may be too simplistic, and the Ways of Coping Questionnaire, derived from the transactional model delineates eight subtypes of coping responses (Folkman & Lazarus, 1988). *Confrontive coping* describes aggressive efforts to alter the situation, *distancing* refers to cognitive efforts to detach from the situation, and *escape-avoidance* describes wishful thinking or behavioural efforts to escape or avoid the problem. *Seeking social support* pertains to attempts to seek informational, tangible or emotional support. *Planful problem solving* describes analytical and deliberate problem-focused efforts to alter the situation. *Accepting responsibility* acknowledges one's role in the problem, with the concomitant theme of attempting to resolve the situation. *Self-control* refers to the regulation of feelings and actions, and *positive reappraisal* describes efforts to create positive meaning by focusing on personal growth. Empirical evidence suggests problem and emotion focused strategies are often used concurrently (e.g. Folkman & Lazarus, 1980), and may be mutually facilitative, or impede the coping process (Lazarus & Folkman, 1984).

The employment of available coping resources may be restricted by internalised cultural values and beliefs regarding certain types of actions or individual vulnerabilities. For example, professional help might be declined due to a belief that this would imply the individual were needy or hopeless. The level of perceived threat may also influence the coping response; research suggests that greater threat is associated with more regressive (emotion focused) forms of coping, and a more limited range of problem focused approaches. However, it is important to recognise that some

situations offer very limited opportunities to address the difficulty directly, and an absence of problem focused coping may be a function of the situation. Indeed, adaptive coping includes an awareness of when to stop attempting to achieve an unattainable goal (Janoff-Bulman & Brickman, 1982, cited in Lazarus & Folkman, 1984).

The contextual model outlined emphasises the relationship between an individual and the environment in a specific context, and coping effectiveness is therefore defined contextually, centering on the fit between reality and appraisal, and the fit between appraisal and coping. (Lazarus & Folkman, 1984). Adaptive coping has been defined as a good match between stressor and choice of coping strategy, maladaptive coping as a poor correspondence between stressor and selected coping strategy.

1.6.2 Empirical research

The transactional model of stress and coping has been applied to coping with many chronic illnesses and physical trauma. From the available relevant parenting literature, only one longitudinal study has adopted this model, but provides initial support for its utility in understanding adaptation to new parenthood. Terry (1991) found evidence of the negative effect of high levels of strain and emotion-focused coping on adaptation to parenthood. Conversely, the use of problem-focused strategies was found to facilitate adaptation. The study also provides support for the effect of coping resources, both individual, and external (family support), on adaptational outcome measures.

Further evidence of the impact of different coping strategies and resources on measures of adaptation may be derived from coping research in analogous areas. It remains difficult to establish satisfactory parallels with the paternal experience of

pregnancy, labour & delivery and new parenthood, which involves a unique blend of predictability and unpredictability, threat, challenge and positive appraisals. Men's experience of coping with their partner's treatment for breast cancer may raise many issues similar to those during pregnancy, for example coping with their partner's physical and emotional swings, concern about their possible death, changes to roles in the relationship and strains on the family finances (e.g. Ptacek, Ptacek & Dodge, 1994). However, it is acknowledged that despite these similarities, the arrival of a baby is often a warmly anticipated and joyous event, a clearly qualitative difference to treatment and surgery for a life threatening illness. Other potential analogous areas of research might include parents coping with acute or chronic illness in a child, although this too remains an under-researched area and is subject to the same limitations raised above.

Research with men coping with their partner's breast cancer indicates a consistent positive correlation between their mental health and coping strategies of seeking social support or problem focused coping. Conversely, adverse mental health is associated with self blame, wishful thinking and avoidance (e.g. Ptacek *et al.* 1994). These findings reflect more extensive work in the field of chronic illness; a strong association between positive mood and reduced psychological distress has been found with the use of positive reappraisal, seeking social support and planful problem solving coping strategies following spinal chord injury. Conversely, escape/avoidance coping strategies have been associated with higher levels of depression and anxiety (see King & Kennedy, 1999).

1.6.3 Summary

In summary, a transactional model of stress and coping indicates the importance of a good match between stressor and choice of coping strategy. To the extent that work from chronic health conditions might be considered analogous, the coping literature indicates certain coping strategies are associated with more positive outcomes, including planful problem solving and seeking social support.

1.7 Factors influencing stress and coping

Despite the lack of research within an empirically validated theoretical framework, the childbirth and parenting literature indicates a number of factors which may impact directly or indirectly on coping, and which may influence postnatal adjustment (i.e. coping outcome).

1.7.1 Social support

In the context of new parenthood, social support may be available from a range of sources, including spouse or partner, wider family networks, friends and work colleagues. The availability of spousal support has been consistently cited as a factor facilitating adaptation to new parenthood (e.g. Wandersman, Wandersman & Khan, 1980). This may reflect the emotional support provided within a marital relationship, but also the ready availability of such support (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983).

The importance of support from one's partner is reflected by research indicating that the presence of maternal depression (and therefore assumed reduced emotional

support) predicts paternal depression in the postpartum (Areias *et al.*, 1996). Similarly, the oncology literature suggests a positive correlation between marital partners' symptoms of anxiety and depression (e.g. Ely, Compas, Epping & Worsham 1998). This observed relationship may be a product of reduced emotional support, but may also arise through the additional stress of coping with an anxious/depressed partner, or the vicarious transmission of symptoms.

Contact with relatives is frequently increased following the birth of a child (e.g. McCannell, 1988), and although not all parents may welcome this contact, research suggests the adaptation of new parents is facilitated by access to assistance from relatives (e.g. O'Hara *et al.* 1983). New parents may feel more comfortable in seeking support from within their immediate family, due to concerns that others might interpret their need for support as evidence of poor parenting. Furthermore, new parents may favour familial support as they feel unable to fulfil the norms of reciprocity associated with support from other sources (Gottlieb & Pancer 1988).

The implications of reduced or inadequate social support are manifest in the association with maternal depression in the postpartum (e.g. Paykel *et al.* 1980), although two major studies failed to find a significant relationship (Hopkins *et al.* 1987; O'Hara, 1994). This previous research is predominantly focused on new mothers, and the links between social support and paternal adjustment have not been investigated to date. Seeking social support may be categorised as a form of coping in its own right, but within this may facilitate both emotion-focused coping (e.g. emotional ventilation) or provide a forum for discussion of planful problem solving strategies.

1.7.2 Depression

Maternal depression and its practical sequelae might legitimately be expected to be an additional domain requiring paternal coping resources. As discussed, maternal depression has been shown to be a risk factor for paternal depression (Areias *et al.*, 1996; Ballard *et al.*, 1994).

O'Hara Rehm & Campbell, (1982) suggests that antenatal depression accounts for a large percentage of the variance in postpartum depression for new mothers. Research has yet to clarify if a similar relationship exists for fathers, although Areias *et al.* found a previous lifetime history of depression was associated with a paternal depressive episode in the postpartum, and the incidence of depression remained stable ante- to postpartum.

1.7.3 Social class

Social class has been demonstrated to be an important predictor of paternal health and well being in both the ante- and postnatal periods (Areias, 1996; Strickland 1986). Social class is also a vulnerability factor for depression across the lifespan.

It is difficult to elucidate which aspects of social class may contribute to adaptational outcome, for example, financial resources may broaden the range of coping options available by facilitating access to legal, medical and professional assistance. Alternatively, the implications of social class may include a number of other

vulnerability factors which also require coping resources, e.g. poorer housing, access to poorer health care.

1.7.4 Life events

The transactional model of stress and coping suggests that a large number of events concurrently experienced as stressful will have a negative impact on the coping resources (secondary appraisal) available to deal with any one situation. This is reflected in the strong association of maternal postnatal depression and life events experienced since the start of pregnancy (O'Hara, *et al.*, 1982; O'Hara, 1994; Paykel *et al.*, 1980). However, life events were not a significant contributing factor in a single study of paternal postpartum depression (Areias *et al.*, 1996).

1.7.5 Experience of labour and delivery

Within a coping framework, antenatal and obstetric factors are likely to play a crucial role in fathers' primary appraisal of the situation, both in terms of anticipatory coping prior to the birth, and during the actual labour and delivery. This will have implications for secondary appraisal and the coping strategies employed.

Gynaecological and obstetric factors have been inconsistently related to maternal postpartum depression. Some studies have found an association between obstetric complications and lower maternal mood (e.g. Campbell & Cohn, 1991). Conversely, other research has indicated less mood disturbance following more stressful or complex deliveries (e.g. Blumberg, 1980; Paykel *et al.* 1980), a relationship which may be mediated through increased social support following birth complications (O'Hara *et al.* 1982).

The few available studies in this area with fathers have focused on their subjective experience of delivery, rather than including objective obstetric information. However, as outlined in section 1.5.2, research suggests longer labours are associated with greater paternal attachment and caretaking behaviour (Grossman & Grossman 1980 cited in Lamb, 1982; Peterson *et al.* 1979; Westreich *et al.* 1991). This may be consistent with the observed link between increased delivery stress and higher maternal mood. To date, research has failed to examine possible relationships between fathers' *subjective* experience of delivery and *objective* delivery complexity, and this has not been studied in relation to paternal mood postpartum.

Previous miscarriages or terminations might also be hypothesised to influence primary appraisals regarding the pregnancy and birth, which may be viewed as the 'day of reckoning' regarding possible foetal abnormality (McKee, 1980). From the literature available, this has not been linked to paternal health in the ante- or postpartum. There is no evidence that previous abortion or miscarriage is a risk factor for maternal depression postpartum (e.g. Paykel *et al.*, 1980).

1.7.6 Discrepancy between expectations and experience

Research in the field of preparation for surgery indicates the benefits of providing patients with information prior to medical procedures. The effectiveness of such interventions may reflect more accurate expectations of prepared patients, which minimises subsequent disparity between expectations and experience (Johnson, 1975). Alternatively, they may help patients to mentally rehearse coping in advance (Meichenbaum, 1975). Previous work has failed to consider the extent to which paternal expectations may differ from the actual experience of labour and delivery, and subsequent implications for paternal mood and adjustment postpartum.

1.7.7 Summary

In summary, there is evidence to suggest that a range of factors including social support, maternal depression, social class and obstetric variables may contribute to paternal adjustment postpartum. One potential mechanism for this influence may be through their impact on the appraisal process and consequent selection and employment of coping strategies.

2.0 Rationale

The last thirty years has seen a huge increase in paternal birth attendance; the majority of fathers intend to be present at the birth of their child, and indeed consider attendance integral to their role as a father. Paternal birth attendance and the transition to fatherhood remains a greatly under-researched area, and has tended to focus on its potential impact for mothers. The available research indicates birth attendance may be a very emotionally rewarding experience for fathers, and their presence is rated highly by their partners, in addition to conferring benefits which include shorter labours and less medication. However, paternal reports indicate labour and delivery may be a distressing and anxiety-provoking experience; fathers describe feeling powerless to alleviate their partner's pain, and feel excluded by health professionals (Chandler & Field, 1997).

Research has failed to clearly address the extent to which fathers may anticipate the potential stress associated with birth attendance during the preceding pregnancy. Exploration of these issues is complicated by the large number of concurrent changes associated with pregnancy and the transition to parenthood; limited research suggests paternal anxiety and physical symptomatology may be elevated during pregnancy, although these studies have not related these symptoms to paternal expectations about the approaching birth.

An understanding of paternal adjustment to parenthood and the possible role of antenatal and birth variables is compromised by a paucity of comprehensive studies in this area. In addition to a potentially distressing experience per se, studies also suggest

that a difficult paternal experience of childbirth may have far reaching implications for infant temperament and the parent-infant relationship (Peterson *et al.*, 1979). Epidemiological data suggest many men experience negative physical and psychological symptoms in the postnatal period (e.g. Ballard *et al.* 1994; Raskin *et al.*, 1990). The underlying aetiology for these symptoms remains unclear; research has failed to consider the interaction between paternal mood and father-infant relationships, and the extent to which these outcomes may be partially mediated by, or operate independently of paternal birth experience.

There is initial support for the utility of the transactional model of stress and coping as a theoretical framework to conceptualise the transition to parenthood. The chronic illness literature provides evidence for the association of particular coping strategies with more positive or negative coping outcomes, but this has not been thoroughly investigated regarding adaptation to parenthood.

In summary, research suggests that fathers may find labour and delivery a stressful experience, with elevated levels of psychological symptoms in the ante and postnatal periods. However, research to date has failed to quantitatively examine the relative contribution of factors which may play a role in the aetiology of this pattern of symptoms.

2.1 Aims of the study

- **Explore the relationships between mood, coping strategies, social support, expectations and experiences of childbirth in a group of first time fathers during their transition to parenthood.**

Previous research has failed to consider how men's expectations and experiences of childbirth may change over time, and any consequent implications for paternal mood. To date, research in this area has not addressed the potential role of paternal social support or coping strategies in relation to mood or birth experience. The study aimed to explore these issues, and develop a quantitative picture of factors which influence fathers' anticipation and experience of childbirth.

- **Explore factors which predict paternal adjustment to parenthood early postpartum.**

A number of studies have considered paternal mood and indices of adjustment to parenthood. However, their value is limited by a tendency to consider variables in isolation. This study used three outcome variables; anxiety, depression and parenting stress (as assessed by the Parenting Stress Index), and aimed to explore the contribution of antenatal, subjective and objective birth variables to paternal adjustment.

2.2 Hypotheses

- 1) Expectant fathers will experience high levels of anxiety and depression in the antenatal period.
- 2) Paternal mood antepartum will be influenced by previous miscarriages, maternal and foetal health.
- 3) Expectant fathers' mood will be related to their expectations about the approaching birth.
- 4) Fathers' subjective experiences of labour and delivery will correlate with objective obstetric information.
- 5) Fathers' subjective experiences of labour and delivery, and the discrepancy between their expectations and experience, will correlate with levels of anxiety and depression postpartum
- 6) There will be an association between coping and problem solving strategies and fathers' subjective expectations and experiences of childbirth, and mood ante- and postpartum.
- 7) There will be an association between paternal and maternal depression postpartum

8) Factors which predict paternal adjustment postpartum will include:

paternal coping strategies

social support

maternal depression

demographic variables

paternal subjective report of labour and delivery

discrepancy between paternal expectations & experience of labour & delivery

objective obstetric information

3.0 Method

3.1 Participants

Participants were recruited at antenatal classes organised by the Oxfordshire Midwives. Classes were for first-time parents and took place at local hospitals and community health centres. The classes were run by a number of midwives, health visitors and physiotherapists, and ranged in size from three to approximately fifteen couples. The courses ran for four weeks, and were attended by parents who had reached approximately thirty weeks gestation. The content of the course was generally negotiated in the first session, and midwives reported a primary emphasis on labour and delivery, although particular areas of interest raised by group participants could also be included.

A small number of fathers attending the antenatal classes had children from previous relationships, and these men were excluded from the study.

3.2 Design

The study was designed as a prospective questionnaire survey of fathers planning to attend the birth of their first child. The design was two staged:

- i) a within group survey of paternal mood and childbirth schema in the ante- and postnatal periods
- ii) a regression analysis of factors which predict adjustment to fatherhood at six weeks postpartum

3.3 Measures

Copies of the measures used are contained in Appendix 1.

3.3.1 Biographical Information

This was devised by the researcher to assess biographical details and included age, marital and socio-economic status.

3.3.2 Childbirth Schema Scale (CSS)

The Childbirth Schema Scale (CSS) (Peirce, 1994) is a semantic differential instrument, which consists of sixteen word pairs generated by antepartal and postpartal women to describe their expectations or experience of childbirth. Respondents are asked to indicate on a Likert scale the point which most closely represents their view of childbirth. A validation study (with women) (Peirce, 1994) has provided initial evidence for the validity of the instrument, as factor analysis extracted four factors (*emotions of outcome, sensations of work, time and preparation for control*) which reflect themes from the literature. The literature review (section 1.2.1) suggests these factors are also relevant to the paternal birth experience.

The internal consistency for the total measure was assessed as .73, which can be considered sufficient for new instrumentation (Nunnally, 1978). The internal consistency of three subscales also reach this criterion (alpha coefficient range .7 - .84); the alpha coefficient for *preparation for control* failed to reach this level (.65). Construct validity was assessed by examining the difference in verbal and mental review activity between women whose pre and post birth schemas were similar, with

those who were different. This provided some evidence for construct validity (Peirce, 1994). No evidence is available regarding the reliability or validity of this instrument with men. However, the lack of a suitable alternative meant that it was used here to assess men's expectations and experiences of childbirth.

3.3.3 Hospital Anxiety and Depression Scale (HADS)

The HADS (Zigmond & Snaith, 1983) is a 14 item self report measure, designed for use with non psychiatric populations. The questionnaire consists of two, seven-item subscales, yielding a separate score for anxiety and depression. Respondents are requested to base their responses on how they have been feeling over the previous week, and rate the strength of their agreement with each statement on a four point scale. The cut off for clinically significant levels of depression and anxiety can be taken as either eight or ten; the former was used in this study. The scale has been validated against interview ratings, and has good internal consistency (Zigmond & Snaith, 1983).

3.3.4 Edinburgh Postnatal Depression Scale (EPDS)

The Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden & Sagovsky, 1987) was developed as a community screening measure for the detection of postnatal depression in women. Studies (e.g. Cox *et al.*, 1987; Harris, Huckle & Thomas, 1989) indicate the measure has satisfactory sensitivity and specificity, and is sensitive to changes in the severity of depression over time. The available literature does not report reliability or validity data for this measure with men, although it has been consistently used in the few available studies investigating levels of postnatal depression in new fathers (e.g. Areias *et al.*, 1996; Ballard *et al.*, 1994). The EPDS has two versions,

with ten and thirteen items respectively. The former was chosen for inclusion in this study as this version is routinely used by the Oxfordshire health visitors for maternal postnatal depression screening.

3.3.5 Short Form Social Support Questionnaire (SSQ6)

The Short Form Social Support Questionnaire (SSQ6) (Sarason, Shearin & Sarason, 1987a) is a 6 item self-report measure of social support. For each item, respondents are asked to list all the individuals who provide the particular type of support described, and provide a rating of their satisfaction with this support. The measure thus provides an assessment of the number of supports (SSQ6-N) and satisfaction with the support (SSQ6-S). The SSQ6 is reported to show satisfactory psychometric properties (Sarason *et al.*, 1987a); correlation between the SSQ6-N and SSQ6-S scores is reported to be modest, suggesting the two components should be treated independently. No normative data are available for this measure, so it is not possible to identify whether responses reflect high or low levels of social support. However, the scores provide a relative measure appropriate for the longitudinal design of this study. The SSQ6 was also selected for its brevity, necessitated by the breadth of measures for inclusion.

The questionnaire was amended for this study to include an additional item (presented in a format consistent with the other six items), designed to assess fathers' specific perceptions of the expected and received support during the transition to fatherhood. For the purposes of this study, the number of times men nominated their partner for each question was used as a very basic measure of perceived partner support.

3.3.6 Ways of Coping Questionnaire (WCQ)

The Ways of Coping Questionnaire (WCQ) (Folkman & Lazarus, 1988) is designed to identify the thoughts and actions used by an individual to cope with a specific stressful encounter. The measure includes a broad range of cognitive and behavioural coping strategies, to which the respondent is required to indicate the frequency with which each was employed during a recent stressful event. The instrument has eight Coping scales; Confrontive Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving & Positive Reappraisal. Alpha coefficients for the eight scales fall into the lower limits of acceptability (range .61 - .71), but are higher than those reported for other measures of coping processes. The items on the WCQ have face validity; the construct validity of the measure is supported by research findings consistent with the theoretical predictions of a cognitive-phenomenological framework of stress and coping (Folkman & Lazarus, 1988).

3.3.7 Social-Problem-Solving Inventory - Revised Short Form (SPSI-R)

This self-report measure is specifically linked to a model of social problem solving (Nezu & D'Zurilla, 1989), which proposes that problem-solving outcomes are largely determined by two general processes; Problem Orientation and Problem-Solving Proper. Problem orientation is reflected by two subscales of the measure, Positive Problem orientation (PPO) and Negative Problem Orientation (NPO). The measure includes three problem-solving proper dimensions: Rational problem Solving (RPS), Impulsivity/Carelessness Style (ICS) and Avoidance Style (AS). Normative data from

college students provides strong evidence for the reliability (alpha coefficients range .74-.85) and validity of this measure (D’Zurilla, Nezu & Maydeu-Olivares, 1996).

3.3.8 Parenting Stress Index (PSI)

The Parenting Stress Index (PSI) (Abidin, 1995) is a 120 item self-report measure, designed to identify parent-child systems under stress. The Total Stress Score is a composite of two domain scores pertaining to predominately child and parent related variables respectively. Six subscales contribute to the Child Domain; high scores in this domain may be associated with children who display qualities that make it difficult for parents to fulfil their parenting role. A further seven subscales comprise the Parent Domain; high scores suggest sources of stress and potential dysfunction in the parent-child system may be related to dimensions of the parent’s functioning. The Life Stress Scale provides an index of the amount of stress outside the parent-child relationship currently experienced by the respondent.

Normative data for the PSI is available for fathers of children aged 6 months to 4 years, and for mothers with infants from one month onwards . Reliability coefficients computed from a normative sample of both mothers and fathers indicates a high degree of internal consistency for the two domains and Total Stress Scale (Abidin, 1995). The stability of the PSI is supported by test-retest coefficients of reliability across four different studies, including one with fathers (Zakreski 1983 cited in Abidin, 1995). A number of studies support the construct and predictive validity of the PSI (see Abidin, 1995).

3.4 Procedures

The research protocol was developed with full consultation of the midwives and obstetricians concerned. The study was granted ethical approval by the Local Research Ethics Committee (Appendix 2). The GP and midwife for each participating couple were contacted to explain the study and were given the ongoing opportunity to raise any concerns about their patients' participation in the study. No objections were raised for any of the participants.

3.4.1 Recruitment & Antenatal Period

The researcher attended the first class of 24 Parentcraft courses and gave brief verbal and written information about the study (Appendix 3). Expectant fathers were given an envelope containing consent forms and the first set of questionnaires to complete and return by post if they wished to join the study. Expectant mothers were given a separate information sheet, and asked for consent for their health visitor to pass on details of their EPDS score. Non consent was assumed if the questionnaires were not returned.

3.4.2 Postnatal Period

Immediately postpartum

The hospital delivery log was checked four times a week, and a second questionnaire sent out to fathers immediately after the safe arrival of their child.

Six week follow-up

Fathers were sent a third set of questionnaires six weeks after the baby's arrival to complete and return by post. Six weeks was selected to coincide with routine assessment of maternal mood postpartum.

Participants were also contacted by telephone to promote their continued participation in the study and complete a brief, semi-structured interview. This included an opportunity for qualitative feedback about the pregnancy, birth experience and adjustment to parenthood. Specific information was also requested regarding any previous pregnancies and whether the most recent pregnancy had been planned; these issues were considered too sensitive to address by postal questionnaire.

3.4.3 Objective delivery information

The researcher examined the participating mothers' hospital discharge summaries to gain objective data about the labour, i.e. length of labour, type of delivery, complications and pain relief.

3.4.4 Maternal Mood

Health visitors routinely screen for maternal postnatal depression at six weeks postpartum. The corresponding maternal EPDS score for fathers participating in the study was obtained from the mothers' health visitors.

3.5 Summary of data collection protocol

The data collection protocol is summarised in Table 1.

Table 1: Summary of research protocol

	Recruitment via Parentcraft classes
Antenatal	Demographic data Childbirth Schema Score Hospital Anxiety and Depression Scale Short Form Social Support Questionnaire Ways of Coping Checklist Social Problem Solving Inventory (short form- revised)
Labour & delivery	Maternal discharge summary - obstetric information
Immediately post-delivery	Childbirth Schema Score
6 weeks post delivery	Childbirth Schema Score Hospital Anxiety and Depression Scale Edinburgh Postnatal Depression Score (maternal & paternal) Short Form Social Support Questionnaire Parenting Stress Index

4.0 Results

4.1 Demographic data

4.1.1 Response rates

One hundred and ninety fathers were given written and verbal information about the study at 24 Parentcraft classes. Thirty five fathers and their partners gave their consent to join the study and completed the antenatal set of questionnaires. This indicates an initial response rate of 18%. Four fathers failed to return subsequent questionnaires, and a further five replies were not returned in time for inclusion in the study. Therefore data are reported for twenty six fathers. Non parametric Mann Whitney U tests indicated that the men who dropped out did not differ from fathers who completed the study on antenatal measures of anxiety and depression, or obstetric details.

Fathers were asked to complete the Childbirth Schema Scale in the first few days following the birth of their child, to provide an immediate measure of the experience. However, the time taken to complete and return this questionnaire was extremely variable, in some cases more than two weeks following delivery. These responses were not felt to accurately reflect a 'first reaction' and data arising from this questionnaire was excluded from the analyses.

4.1.2 Sample characteristics

The mean ages, marital status and social class of the participants are shown in Table 2.

Table 2: Mean paternal & maternal ages (and standard deviation), marital status & social class of participants.

		Mean age
Mean age	Fathers	33 years 8 months (4.6)
	Mothers	31 years 5 months (3.9)
		Mean number (percentage of sample)
Marital status	Married	24 (92%)
	Cohabiting	2 (8%)
Social class	I - professional	9 (35%)
	II - managerial / technical	15 (58%)
	III - skilled occupations	2 (8%)

The classification by social class was based on occupational data supplied by the participants, and classified according to the Standard Occupational Classification (Office of Population Censuses & Surveys, 1990). All of the participants classified their ethnic origin as white.

4.2 Analysis

4.2.1 Overview of the data analysis

The Kolomogorov-Smirnov one-sample goodness of fit test was used assess the extent to which data deviated from the normal distribution, and therefore the appropriateness of parametric or non parametric tests. The depression and social problem solving data were not normally distributed, and non parametric tests were used with these data.

The first aim of the study, to explore the relationships between mood, coping strategies, social support, expectations and experiences of childbirth, was investigated

empirically through Pearson's Product Moment and Spearman's Rank Order correlations. The number of correlations conducted increases the risk of chance significant findings, and in such circumstances it may be appropriate to increase the threshold at which significance is reported to the .01 level. However, due to the exploratory nature of the study, results significant at the .05 level are reported, but these must be interpreted with caution.

Anxiety, depression and paternal views of childbirth were measured ante and postnatally; ante and postpartum scores were compared with Related Samples t- tests (anxiety, expectations and experiences of childbirth) and the Wilcoxon Matched Pairs test (depression).

Differences in the paternal mood of fathers who had experienced previous miscarriage, maternal and foetal health difficulties were investigated through Univariate Analyses of Variance. This was selected in preference to t tests, to allow exploration of the potential interaction between different antenatal variables.

The second aim of the study was to explore to explore the contribution of antenatal, subjective and objective birth variables to paternal adjustment. The study considered five obstetric variables. Categorical data were available for obstetric complications, mode of delivery and analgesia; the influence of these variables on paternal mood, birth experience and parenting stress were considered through Univariate analysis of variance. This permitted exploration of the interaction between the obstetric variables. Parametric and non parametric correlations were used to investigate the relationship between the quantity of blood lost and the duration of labour, with indices of paternal

birth experience and adjustment. Further correlations were used to explore the relationship between parenting stress, paternal mood and childbirth experience. Finally, a series of stepwise multiple regressions were run to investigate which variables were the best predictors of adjustment to parenthood. Variables entered into the regression do not need to be normally distributed, but the analysis is subject to a number of assumptions. These include the normal distribution of the residuals, no correlation between the residuals and explanatory variable, and constant variance of the residual deviations for all values of the explanatory variable. The assumptions of the analysis were tested post hoc with the Kolomogorov-Smirnov one-sample goodness of fit test, and scatter plots of the residuals against the explanatory variables and predicted values respectively.

4.2.2 Paternal mood antepartum

Hypothesis 1: Expectant fathers will experience high levels of anxiety and depression antepartum.

Mean scores for paternal depression and anxiety antepartum are shown in Table 3. None of the fathers in the study reached criterion for clinical levels of depression; the anxiety scores for four fathers (15 % of the sample) fell into the borderline range for clinical levels of anxiety. Norms for the general population are not available, but the percentage of medical outpatients reaching clinically significant levels of anxiety and depression (Zigmond & Snaith, 1983) are indicated in the table.

Table 3: Mean scores and percentage reaching clinically significant levels of depression and anxiety on Hospital Anxiety & Depression Scale for expectant fathers and medical outpatients.

		Percentage of sample in borderline & clinical range	
	Mean score on HADS (standard deviation)	Expectant fathers	Medical outpatients
Depression	1.9 (1.8)	0	31
Anxiety	4.7 (2.7)	15	54

The low observed values precluded chi-squared comparison of the clinical and non clinical distribution of anxiety and depression for prospective fathers and hospital outpatients. Levels of depression and anxiety in this study are clearly lower than in hospital outpatients, although it would be interesting to compare this with men in the general population.

There was a significant positive correlation between paternal levels of antenatal anxiety and depression (Spearman's rho .74; $p < .001$).

In summary, there is some support for hypothesis one, although levels of clinically significant distress in prospective fathers are not high compared to medical outpatients.

Hypothesis 2: Paternal mood antepartum will be different in those who have experienced previous miscarriages, maternal and foetal health difficulties.

Maternal and foetal health were classified according to paternal self-report at the six week follow-up phone call. Maternal health during pregnancy was categorised as

'generally well', or 'complications' which included morning sickness and high blood pressure. Foetal health refers to bleeds or other complications with the baby during pregnancy. Three fathers had experienced one or more previous miscarriage; as a result of the small sample size, analysis was restricted to the presence/absence of miscarriage in the past.

Univariate analyses of variance indicated no significant relationship between antenatal factors and paternal depression or anxiety antepartum (as assessed by the HADS). These results do not support Hypothesis 2.

Hypothesis 3: Expectant fathers' mood will be related to their expectations about the approaching birth.

A series of Spearman's Rank Order (depression) and Pearson's Product Moment (anxiety) correlations were conducted to determine the relationship between antenatal mood and fathers' expectations about childbirth.

There was no significant correlation between antenatal depression and either the Childbirth Schema Score (CSS) total score, or any of the four CSS factors.

CSS total score was unrelated to antenatal anxiety. However, the *sensations* subscale was significantly correlated with anxiety (Pearson correlation coefficient $-.39$; $p=.05$), indicating higher levels of anxiety in fathers who anticipated the birth to be less pleasurable, and more painful and anxiety-provoking.

4.2.3 Paternal experiences of childbirth and objective obstetric information

Hypothesis 4: Fathers' subjective experiences of labour and delivery will be related to objective obstetric information.

Obstetric information regarding five areas of the labour and delivery was collected from midwifery records: duration of labour, blood loss, mode of delivery, analgesia and complications. It was assumed that more painful, longer labours with higher blood loss, recorded complications and those ending in an intervention delivery were obstetrically 'more difficult'; thus in terms of the hypothesis, these would be associated with more negative (lower) paternal ratings.

Duration

Paternal report of the labour duration at time 2 (6 week follow up) was unrelated to midwives' recording of the actual labour duration (Spearman's rho $-.33$, NS).

Blood loss

Blood loss was included as it is likely to be a very visual and salient experience for fathers. However, at six weeks post-delivery, there was no significant relationship between blood loss and fathers' subjective description of the labour and delivery (Spearman's rho $-.36$, NS).

Mode of delivery, analgesia and birth complications

The frequency of different modes of delivery, analgesia and birth complications are shown in table 4.

Table 4: Frequencies and percentages of delivery mode, type of analgesia and birth complications.

			N	%
Mode of delivery	non intervention	spontaneous cephalic	14	53.8
	surgical intervention	ventouse	6	23.1
		forceps	1	3.8
		unplanned caesarean	3	11.5
		planned caesarean	2	7.7
Analgesia	none		2	7.7
	inhaled only		8	30.8
	epidural only		8	30.8
	inhaled & epidural		8	30.8
Complications	no complications		6	23.1
	complications		20	76.9

Due to small group sizes the mode of delivery categories were amalgamated to form a non-intervention and surgical intervention group for further analysis. Planned caesarean births were excluded from this part of the analysis, as they were considered to be a qualitatively different type of birth experience.

The partners of participating fathers used a number of different forms of analgesia, including aromatherapy, inhaled gas and epidural. Many women used more than one form of pain relief; due to the small sample size analgesia was considered as a binary

variable, classified on the basis of whether an epidural was administered during the labour.

Births were divided into two groups according to any complications listed by midwives. These included delays during stages of labour, and transfer to consultant care during labour, which is associated with the presence of additional medical personnel and equipment.

Univariate analyses of variance indicated no significant relationship between analgesia or birth complications and fathers' reported experience of childbirth. Univariate analyses of variance for the four factors of the paternal birth experience indicated a significant relationship between *sensations* and *emotions* with the mode of delivery (see Table 5).

Table 5: Repeated Univariate ANOVA analysis of paternal experiences of childbirth and mode of delivery for the labours experienced by fathers participating in the study.

	Mode of delivery	Mean Score	Degrees of freedom	F - value
CSS - emotions	non intervention	17.4	1	15.2***
	intervention	22.0	1	
CSS - sensations	non intervention	12.1	1	7.6**
	intervention	6.8	1	
CSS - time	non intervention	9.2	1	0.2 ^{N.S.}
	intervention	6.7	1	
CSS - preparation	non intervention	10.1	1	0.2 ^{N.S.}
	intervention	10.8	1	

*p < .05; **p < .01; ***p < .001

CSS: Childbirth Schema Scale (Pierce, 1994).

The results indicate that paternal reports of spontaneous deliveries were significantly more positive regarding the *sensations* (ease, pleasure, pain and anxiety experienced) of labour than those of intervention deliveries. However, the experiences of intervention deliveries were rated more positively than spontaneous deliveries regarding the *emotions of outcome* (relief, satisfaction, excitement, beautiful, not scary).

The significantly more positive (higher) reports of *sensations of work* for spontaneous deliveries provides some support for the hypothesis. However, contrary to the hypothesis, *emotions of outcome* were described more positively in connection with intervention deliveries. Furthermore, fathers' subjective reports of the length of labour and delivery were unrelated to actual labour duration, and blood loss was not correlated with paternal descriptions of the birth. In summary, the data provides only limited support for the hypothesis.

Hypothesis 5: Fathers' subjective experiences of labour and delivery, and the discrepancy between their expectations and experience, will correlate with levels of anxiety and depression postpartum.

Postpartum mood

Changes in paternal mood across the time-frame of the study are outlined in Table 6.

Table 6: Comparison of mean paternal mood (and standard deviations) ante- and postpartum, as assessed with the Hospital Anxiety & Depression Scale.

		Mean score	Tests of significant difference
Depression	antepartum	1.9 (1.8)	Wilcoxon Signed Ranks Test: $Z=-1.12$ ^{N.S.}
	postpartum	2.3 (2.0)	
Anxiety	antepartum	4.7 (2.8)	Paired samples t test $t = 3.6$ $p<.001$ d.f.=25
	postpartum	3.4 (2.5)	

No fathers reached clinically significant levels of depression as assessed by the HADS throughout the study, although two reached the cut off for depression on the EPDS. The Wilcoxon matched pairs test indicates a small, non significant trend towards greater levels of depression postpartum.

Two fathers experienced clinically significant levels of anxiety postpartum; a matched samples t test indicates a significant reduction in levels of anxiety following the birth.

Experience of labour and delivery and postpartum mood

Spearman's Rank Order correlations indicate fathers' experiences of childbirth (CSS total score) were significantly inversely associated with depression postpartum (Spearman's rho $-.54$; $p = .004$). Thus higher levels of depression were associated with more negative ratings of the birth experience, although it is not possible to clarify the causal direction of this relationship. This result must be interpreted with caution, due to the low levels and relative stability of depressive symptomatology across the time-frame of the study.

Univariate ANOVA indicated no significant impact of obstetric variables on depression postpartum.

There was a significant inverse correlation between anxiety postpartum and paternal ratings of the birth experience (Pearson correlation coefficient = $-.53$; $p = .006$), i.e. lower ratings of the overall birth experience were associated with higher reported levels of anxiety. Higher anxiety postpartum was also significantly related to longer perceptions of labour length. There were no significant relationships between the other three subscales of the CSS and anxiety postpartum, which was also unrelated to obstetric factors.

Discrepancy between paternal birth expectations and experience

Discrepancies between paternal expectations and their actual experiences of childbirth were investigated by matched pairs t tests, as outlined in Table 7.

Table 7: Discrepancies between paternal expectations and experiences of childbirth: Paired Samples Test

Childbirth Schema Scale		Mean Score	Degrees of freedom	t
<i>Emotions of outcome</i>	antenatal	19.6	25	-1.36 ^{NS}
	postnatal	20.2	25	
<i>Sensations</i>	antenatal	6.2	25	-8.97 ^{***}
	postnatal	10.5	225	
<i>Time</i>	antenatal	5.9	25	-3.64 ^{***}
	postnatal	8.7	25	
<i>Preparation</i>	antenatal	9.4	25	-1.81 ^{NS}
	postnatal	10.4	25	
Total Score	antenatal	59.7	25	-4.83 ^{***}
	postnatal	69.1	25	

*p<.05; **p<.01; ***p<.001

The results indicate that overall fathers reported their experiences of childbirth to be more positive than their antenatal expectations. There was a significant discrepancy between fathers' expectations and experience regarding the *sensations of work*, indicating fathers found labour to be easier, more pleasurable, less painful and anxiety provoking than had been anticipated. Labours were reported to be significantly shorter than had been anticipated, and fathers felt more prepared and in control than they had expected. However, there was no difference between *emotions of outcome* pre and post delivery.

The results of this study indicate a discrepancy between paternal expectations and the actual experience of labour and delivery. The preparation for surgery literature indicates more negative outcomes following surgery if expectations were more positive than the reality of the procedure. However, the fathers in this study rated the actual birth experience more positively than their expectations.

Pearson (anxiety) and Spearman (depression) correlations indicated changes in mood (ante- to postnatal periods) to be unrelated to the discrepancy between fathers' expectations and actual experiences on both global and subscale ratings of the CSS.

In summary, there is some support for the hypothesis that fathers' experiences of labour and delivery are related to mood postpartum. However, these results must be interpreted with caution, and do not imply the direction of causality. Overall, fathers' experiences of childbirth were rated significantly higher than their expectations, although there was no difference between their expectations and experience regarding the *emotions of outcome* and *preparation* for the birth. Discrepancy between expectations and experiences was unrelated to changes in mood ante- to postpartum, which does not support hypothesis 5. Overall, there is some support for the hypothesis.

4.2.4 Coping and problem solving strategies

Hypothesis 6: there will be an association between coping and problem solving strategies and fathers' expectations and experiences of childbirth, and mood ante- and postpartum.

A correlation matrix of the different coping and social problem solving strategies, and expectations and experiences of childbirth is presented in Table 8.

Rational and planful problem solving are inversely correlated with overall expectations regarding the impending childbirth experience; these strategies are associated with lower expectations about attending labour and delivery. Planful problem solving was also associated with more negative experiences of childbirth. A distancing coping strategy was significantly positively correlated with postnatal ratings of the sensations of work, indicating fathers who included detachment in their coping repertoire rated the labour as easier, more pleasurable, and less painful and anxiety provoking. Men with a confrontive coping strategy and a tendency to accept responsibility for difficulties reported more negative experiences of childbirth.

More positive birth experiences were associated with a positive, constructive approach to solving problems, conversely, a negative, pessimistic attitude to problem solving was inversely correlated with birth experiences.

Table 8: Pearson's Product Moment and Spearman's Rank Order correlation matrix: Coping and social problem solving strategies, expectations and experiences of childbirth.

Ways of Coping Checklist	Childbirth Schema Scale									
	Expectations of labour and delivery					Experiences of labour and delivery				
Coping strategy	Emotions	Sensations	Time	Preparation	Total score	Emotions	Sensations	Time	Preparation	Total Score
Confrontive coping	.22	.03	.07	-.24	.10	.15	-.11	-.08	-.56**	-.24
Distancing	.12	.43*	.09	.06	.29	.03	.54**	.15	.17	.43*
Self-control	-.15	-.11	.09	-.24	-.18	.07	-.16	-.08	-.47	-.29
Seeking social support	.21	.07	-.20	.06	.12	.22	.11	-.03	.03	.14
Accepting responsibility	-.02	-.20	.06	-.27	-.17	-.01	-.27	-.29	-.44*	-.45*
Escape-avoidance	-.13	.33	.42*	-.22	.09	-.27	.21	.01	-.37	-.14
Planful problem solving	-.35	-.33	-.16	-.33	-.46*	-.02	-.40	-.14	-.26	-.40*
Positive reappraisal	.21	-.15	.13	.08	.08	.29	-.09	-.24	-.26	-.12
Social Problem Solving Inventory (SPSI)										
SPSI total score	.00	-.10	-.30	.10	-.03	.29	-.14	.05	.21	.13
Positive problem orientation	.12	.32	-.12	.13	.34	.22	.23	.21	.14	.37
Negative problem orientation	-.12	-.07	-.09	-.38	-.28	-.50**	-.13	-.09	-.38	-.46*
Rational problem solving	.03	-.03	-.32	-.13	-.10	.17	-.08	-.07	.23	.09
Impulsivity-carelessness	.39	.38	.34	.15	.45*	.11	.28	-.11	-.13	.16
Avoidance style	-.14	.28	.28	-.10	.14	-.22	.46*	.22	-.08	.20

* correlation significant at the 0.05 level (2 tailed)

** correlation significant at the 0.01 level (2 tailed)

The association between paternal mood, coping and problem solving styles is outlined in Table 9. More positive mood states ante- and postpartum were associated with seeking social support strategies and a positive, rational approach to solving problems. Confrontive coping, escape avoidance and accepting responsibility were positively correlated with depression and anxiety, indicating these are likely to be maladaptive strategies for coping with pregnancy, childbirth and parenthood.

In summary, there is preliminary evidence to support the hypothesis regarding an association between particular coping strategies and paternal mood ante- and postpartum. However, due to the number of correlations performed, results significant at the .05 level must be treated with caution. Maladaptive strategies include accepting responsibility, confrontive or avoidant coping, and a negative approach to problem solving. Seeking social support is associated with more positive mood states. There are few consistent relationships between different coping strategies and paternal expectations and experiences of childbirth. However, positive reports of the birth are associated with detached coping strategies, and more negative experiences with a strategy of accepting responsibility, confrontive coping and planful problem solving.

Table 9: Spearman's Rank Order and Pearson correlation matrix: depression and anxiety ante- and postpartum.

Ways of Coping Checklist	Hospital Anxiety & Depression Scale			
	Depression (Spearman's rho)		Anxiety (Pearson correlation coefficient)	
Coping strategy	antenatal	postnatal	antenatal	postnatal
Confrontive coping	.57**	.56**	.55**	.35
Distancing	.17	-.11	-.08	-.06
Self-control	.50*	.40*	.23	.17
Seeking social support	-.41*	-.14	-.20	-.17
Accepting responsibility	.79**	.56**	.52**	.43*
Escape-avoidance	.63**	.43*	.41*	.50*
Planful problem solving	.23	.37	-.03	-.03
Positive reappraisal	.30	.07	.30	.26
Social Problem Solving Inventory (SPSI)				
SPSI total score	-.59**	-.39	-.50*	-.46*
Positive problem orientation	-.59**	-.44*	-.61**	-.45*
Negative problem orientation	.60**	.49*	.63**	.60**
Rational problem solving	-.39*	-.32	-.35	-.21
Impulsivity-carelessness	.48*	.08	.18	.25
Avoidance style	.10	.11	.03	.02

* correlation significant at the 0.05 level (2 tailed)

** correlation significant at the 0.01 level (2 tailed)

4.2.5 Maternal and paternal depression postpartum

Hypothesis 7: There will be an association between paternal and maternal depression postpartum

The EPDS scores of three mothers and two fathers indicated clinically significant levels of depression six weeks postpartum. Paternal depression was not significantly correlated with maternal depression (Pearson correlation coefficient $-.02$, $p = .93$), and a scatter plot of the partners' scores indicated no obvious pattern of association. This study provides no evidence to support hypothesis five.

4.2.6 Postnatal adjustment

Hypothesis 8: Factors which predict paternal adjustment postpartum will include: paternal coping strategies, social support, maternal depression, demographic variables, objective obstetric information, paternal subjective report of labour and delivery and discrepancy between paternal expectations & experience of labour & delivery.

The study considered three measures of paternal adjustment: depression and anxiety postpartum, and parenting stress, as measured by the HADS and Parenting Stress Index.

Initial correlation matrices were used to explore the relationship between parenting stress, paternal mood and childbirth experience (Table 10). The parent domain of the PSI includes a depression subscale; this was additionally excluded from a re-scored parent domain to ensure the positive correlation with depression and childbirth experience was not a function of this overlap.

Table10: Spearman Rank Order and Pearson correlation: Parenting stress, postpartum mood and experiences of childbirth

Parenting Stress Index	Hospital Anxiety & Depression Scale		Childbirth Schema Scale
	Depression	Anxiety	Experience of childbirth (total score)
Total score	.62**	.33 ^{NS}	-.45*
Parent domain	.65**	.41*	-.45*
Parent domain-R ^a	.59**	.38*	-.41*
Child domain	.57**	.17 ^{NS}	-.39*

^a Parent domain-R denotes recalculated parent domain without depression subscale

* correlation significant at the 0.05 level (2 tailed)

** correlation significant at the 0.01 level (2 tailed)

The results indicate that anxiety is related to stress within the parent domain. There is a significant relationship between depression and parenting stress, which holds when the depression subscale is removed. The data suggest more negative birth experiences are associated with higher parenting stress, and this relationship is not confounded by the positive correlation of both variables with depression.

A series of stepwise multiple regressions were undertaken to determine the variables predicting parenting stress, postnatal depression and anxiety (as assessed by the HADS). Coping and problem solving strategies, social support, expectations and experiences of childbirth, mood, antenatal, obstetric and demographic variables were entered into the regression analysis. The validity of each regression was investigated by a series of tests to check the analyses fulfilled the assumptions of parametric tests. These included Kolomogorov-Smirnov one sample goodness of fit tests to check the residuals were normally distributed, scatter plots of residuals against predicted values

to ensure equal variance, and scatter plots to ensure residual deviations were not correlated with the explanatory variable. These indicated the assumptions were fulfilled for each of the three analyses. However, due to the relatively small number of participants, the results of the regression analyses must be interpreted with caution.

Predictors of postnatal depression

A stepwise multiple regression was performed with parenting stress (total score) as the dependent variable. The best model contained a single variable, depression antepartum, which accounted for 37% of the variance ($F=10.13$, R square = .37, $p=.005$).

Predictors of postnatal anxiety

The best model contained four variables, which were entered in the following order; Antenatal anxiety accounted for 40% of the variance ($F = 11.36$, R square = .40, $p=.004$),

Paternal age accounted for a further 13% of the variance ($F = 11.20$, R square = .58, $p=.001$),

Expectations about the *sensations* of childbirth accounted for 10% of the variance ($F = 10.76$, R square = .68, $p=.001$),

The paternal experience of the duration of childbirth contributed a further 10% ($F = 12.90$, R square = .78, $p<.001$).

Postnatal anxiety was therefore most strongly predicted by anxiety antepartum. Paternal age accounted for a further 13% of the variance, although there is no significant correlation between paternal age and anxiety postpartum (Spearman's $\rho =$

.32, NS). Different aspects of paternal expectations and experiences of childbirth contributed to 20% of the observed variance in anxiety postpartum.

Predictors of postnatal parenting stress

The best model contained a single variable; depression postpartum accounted for 43% of the variance ($F = 12.94$, $R \text{ square} = .43$, $p = .00$).

In summary, depression antepartum was the best predictor of both depression postpartum and parenting stress related to functioning as a parent. Anxiety antepartum was predicted by four variables; anxiety antepartum, paternal age, expectations regarding the sensations of childbirth, and reported experience of labour duration. The models highlight the importance of mood antepartum in predicting postnatal adjustment to parenthood.

4.3 Additional findings

4.3.1 Social support

Paternal ratings of the number of social supports, partner support, and their overall satisfaction with social support, did not differ across the time frame of the study. The number of supports was unrelated to anxiety or depression at any point, but satisfaction with social support rated before and after the birth, was significantly associated with depression postpartum (antenatal satisfaction Spearman's $\rho = -.42$, $p = .04$; postnatal satisfaction Spearman's $\rho = -.53$, $p = .006$). Interpretation of this result must be cautious due to the low level of reported depression throughout the study, and no conclusions may be drawn regarding the possible direction of causality.

Both quantity and satisfaction with social support was unrelated to parenting stress (Pearson correlation coefficients = $-.08$, NS; $=.05$, NS for number and satisfaction respectively).

4.3.2 Obstetric factors and maternal mood

Maternal mood postpartum was unrelated to antenatal and obstetric factors. This does not support previous studies indicating that maternal mood may be elevated postpartum following more complex deliveries (e.g. Paykel *et al* 1980), or indeed work suggesting obstetric complications may be associated with lower maternal mood postpartum (e.g. Campbell & Cohn, 1991).

4.3.3 Obstetric factors and parenting stress

The study did not find any evidence of a relationship between labour duration and paternal attachment behaviour, or overall parenting stress score. However, Univariate ANOVA indicated a significant relationship between complications and parenting stress, both overall and for the child and parent domains (see Table 11). Furthermore, analgesia was significantly associated with stress in the parent domain (Table 11).

Table 11: Univariate ANOVA of obstetric complications and overall parenting stress, parent and child domains.

Parenting Stress Index	Obstetric complications	Mean Score	Degrees of freedom	F - value
Total parenting stress	No complications	278.9	1	17.1***
	Complications	221.5	1	
Parent domain	No complications	154.9	1	25.6***
	Complications	117.3	1	
	No epidural	144.7	1	5.4*
	Epidural	127.5	1	
Child domain	No complications	124.0	1	6.4*
	Complications	104.2	1	

*p < .05; **p < .01; ***p < .001

Fathers who had experienced labours with obstetric complications reported lower levels of parenting stress six weeks postpartum, compared to fathers who had attended uncomplicated births. In addition, fathers whose partner had an epidural (often associated with more difficult labours or intervention deliveries) reported significantly less stress in the parent domain. These findings provide some support for the influence of obstetric variables on parenting stress.

5.0 Discussion

5.1 Main findings

The study explored the relationships between mood, coping strategies, social support, expectations and experiences of childbirth, in a group of first time fathers during the transition to parenthood. Previous work in this area had considered one or more of these variables, but failed to provide a comprehensive picture of the relationship between these factors over this time period.

Consistent with hypothesis one, the study found evidence of clinically significant levels of anxiety antepartum, which declined following labour and delivery. However, levels of depression remained low and relatively stable throughout the study. Contrary to hypothesis two, paternal mood was unrelated to antenatal factors, but there was some evidence to suggest a relationship between paternal mood, expectations and experience of childbirth (hypotheses three and five). Overall, fathers' rated their experiences of childbirth more positively than their prior expectations, but there was no support for an association between subjective experiences of childbirth and objective obstetric information (hypothesis four). The results provided initial evidence to support hypothesis six, indicating a relationship between specific coping and problem solving strategies and paternal mood, expectations and experiences of childbirth. The results of this study did not support hypothesis seven, which predicted an association between paternal and maternal depression postpartum. Adjustment to parenthood (hypothesis eight) was best predicted by antenatal mood, although there was some evidence of the

influence of paternal experiences of childbirth and obstetric variables on parenting stress.

5.2 Interpretation of findings

For reasons of clarity and the prospective nature of this study, discussion of the results and their interpretation will be structured according to three main conceptual areas, rather than sequentially by each hypothesis. The discussion will initially evaluate data pertaining to paternal mood ante- and postpartum, before considering fathers' expectations and experience of childbirth. This will be followed by a discussion of how these factors may be related to coping and problem solving strategies. The theoretical, clinical and research implications arising from the study will be highlighted throughout the discussion and summarised in the concluding section.

5.3 Paternal mood antepartum

The paternal experience of pregnancy and transition to parenthood has been well documented as a period of change and significant stress. Previous research has outlined a range of potentially contributory factors, which relate to simultaneous themes of change on a practical, emotional and psychological level. These pervasive changes must be addressed both individually and within the couple relationship (see section 1.3). In the context of research indicating that the paternal experience of childbirth may be difficult and distressing for fathers, and other preliminary studies indicating prospective fathers' concerns about the approaching birth, this study attempted to investigate paternal mood antepartum, and relationships with expectations of childbirth.

The study provided some empirical evidence of the stress associated with pregnancy; 15% of prospective fathers experienced clinically significant levels of anxiety antepartum, although none reached the clinical cut off for depression. Paternal mood was assessed by the HADS, which was selected as it does not include items pertaining to changes in sleeping pattern or sexual activity which might be influenced by pregnancy and the arrival of a new baby. Unfortunately, comparison data from a normative sample is not available for this measure, although the incidence of anxiety and depression in prospective fathers was considerably lower than that of general medical outpatients. However, in the context of over 2 600 babies born to first-time parents at the John Radcliffe Hospital every year, an incidence of 15% represents nearly 400 fathers with clinically significant anxiety.

In contrast to anxiety, prospective fathers reported very low levels of depression. This may reflect a sampling bias; the population approached to take part in the study had already chosen to attend Parent education classes, and participation in the study required additional, active, opting-in. These two self-selecting procedures were likely to exclude men who were experiencing significant levels of depression antepartum. Furthermore, low social class is consistently cited as a risk factor for depression; fathers participating in this study were predominantly from social classes I and II.

5.3.1 Paternal mood and antenatal factors

The transactional model of stress and coping would predict that antenatal factors such as whether the pregnancy was planned, a history of miscarriage, and maternal and foetal health problems, may impact on paternal appraisals of threat during the pregnancy. Clinical observation also suggests the influence of miscarriage, or threatened miscarriage (e.g. Piontelli, 1997), and this was supported here by qualitative reports of antenatal anxiety given by fathers during the six week follow-up telephone contact.

Previous studies have failed to consider the potential impact of antenatal factors on paternal mood, and comparative data for mothers are also unavailable. Contrary to predictions, paternal mood was unrelated to antenatal variables. However, the theoretical and clinical observations outlined suggest antenatal variables may be an interesting area for future research, and the results of the present study may have been constrained by a number of methodological issues. Fear of repeated miscarriage or issues concerning the health of the foetus may be more salient earlier in the pregnancy, and would be best assessed by repeated and earlier sampling of paternal mood. Larger sample sizes would also increase the opportunity to explore relationships within different groups, for example the *number* of previous miscarriages experienced. Future studies might also consider more specific and quantitative measures of maternal and foetal health, such as obstetric and medical risk.

5.3.2 Paternal mood and expectations about labour and delivery

In the context of previous qualitative research indicating prospective fathers' concerns about birth attendance, this study attempted to examine the relationship between paternal mood antepartum and expectations about the approaching labour and delivery. If paternal anxiety antepartum does reflect anxiety about the approaching birth (rather than other changes associated with the transition to parenthood), more negative expectations about labour and delivery would be expected to be associated with higher levels of anxiety. This was partially supported by the results of this study.

Higher levels of anxiety were associated with more negative expectations regarding the *sensations* of childbirth. This is congruent with the literature indicating that their partner's pain is a particularly salient feature of fathers' expectations and birth experience (e.g. Chandler & Field, 1997; Szeverenyi, Poka, Hetey & Torok, 1998). Prospective fathers' anticipatory concerns about the pain of childbirth may be further reinforced by the prominence of discussion regarding pain, and pain management, both pharmacological and behavioural, at parent education classes. The latter often involves teaching fathers different ways in which they might support their partner, including massage techniques, encouraging breathing and the use of aromatherapy oils. Parent education often involves an explicit association of pain relief with fathers' roles during labour. This may reflect midwives' perceptions of paternal anxiety about the pain, and their consequent efforts to reassure fathers that they may be of practical assistance. Alternatively, discussion may focus on pain management as this is one area of the labour where both parents have the opportunity to exert some degree of choice or control.

5.3.3 Implications of control for antenatal preparation

Beliefs about control are of particular relevance to the transactional model of stress. Evidence of the salience of pain for fathers, and the potential link between analgesia and control during labour, suggest that paternal beliefs about control may be an exciting and important area for future research. Beliefs about personal control may be broadly categorised as general or situational (Folkman & Lazarus, 1984); these effectively map onto the concepts of locus of control and self efficacy. General beliefs are most likely to affect control in ambiguous situations; health-related models usually include three main components, which describe the extent to which an individual believes important outcomes can be controlled by their own actions, those of other people, or by chance. Situational control beliefs are thought to dominate appraisal processes when ambiguity is reduced, and may relate to both expectations regarding control of the environment, and one's own response to it. Most research assumes that having control reduces stress, for example, empirical evidence suggests that interventions designed to enhance self efficacy prior to medical procedures, reduce distress prior to and during, the procedure (e.g. Gattuso, Litt & Fitzgerald, 1992). There is similar support for traditional preparation for surgery, which aims to enhance informational control (e.g. Suls & Wan, 1989). Furthermore, lack of control has been cited as one of the most distressing aspects of the paternal birth experience (Wikander & Theorell, 1997).

However, these studies do not automatically imply that equivalent interventions to enhance paternal self efficacy, or promote informational control regarding labour

attendance (or specifically analgesia) would be beneficial. In some circumstances, control may also heighten threat, for example when having control is contrary to an individual's preferred style, or conflicts with other commitments or goals (see Folkman & Lazarus, 1984; Miller & Mangan, 1983). Therefore, given the salience of maternal pain for fathers, and the opportunities to modify perceived control associated with pain relief, a detailed and thorough exploration of fathers' control beliefs would be important in elucidating optimum levels of paternal control during labour. This information could then be used to inform antenatal parent education programmes about appropriate levels of control for fathers.

5.4 Paternal mood postpartum

5.4.1 Anxiety postpartum

Consistent with the proposal that elevated paternal anxiety antepartum may be in part related to anxiety regarding the approaching birth, there was a significant decrease in anxiety from the ante to postnatal period. Lower levels of anxiety postpartum may simply be a function of having negotiated the birth, irrespective of the qualitative paternal experience. However, the reduction in anxiety corresponds to a significant increase in paternal ratings of their experiences of childbirth, relative to antenatal expectations. In addition, the results indicate higher levels of anxiety postpartum are associated with more negative paternal experiences of childbirth, and the perceived duration of labour is a predictive factor in anxiety postpartum. Although changes in anxiety were not significantly related to the concurrent change in paternal expectations and experiences, taken overall, the results provide preliminary support for the impact of expectations and experiences of childbirth on paternal anxiety.

Simultaneous changes in many other domains may also have contributed to paternal anxiety; the number of fathers likely to be affected by clinically significant levels of anxiety highlights the importance of future research in this area. A comparison of first, second and third time fathers during the transition to parenthood might help to control for some of the multiple changes which occur during this period, and therefore isolate particular aspects of the transition which may contribute to paternal anxiety. Alternatively, comparing mood in fathers intending and not intending to attend the birth would provide an opportunity to explore birth-attendance-specific anxiety. However, the current incidence of paternal birth attendance (98%) suggests it would be difficult to obtain sufficient participants in the latter group.

5.4.2 Depression postpartum

Previous research with fathers during the transition to parenthood has indicated relatively low, stable levels of depression (Areias *et al.*, 1996). In the present study there was a small, but non significant trend towards elevated levels of paternal depression postpartum. Depressive symptomatology antepartum was the best predictor of levels of depression six weeks after the birth. This is consistent with maternal research which indicates that antenatal depression accounts for a large proportion of the variance in postpartum depression for new mothers (O'Hara *et al.*, 1982). The EPDS scores of two fathers (7.6 %) were indicative of clinically significant depression. This was not reflected on the HADS; the discrepancy may have arisen from two items on the EPDS which pertain to feelings of anxiety. The prevalence of clinically significant depression in this study (assessed by the EPDS) falls within the range

indicated by equivalent studies, with estimates ranging from 4.8% - 16% of fathers (see section 1.4.2).

Social support has been consistently identified in the aetiology of depression and adaptation to parenthood (e.g. Paykel *et al.*, 1980). In this study, depression postpartum was associated with lower satisfaction with social support, ante- and postnatally. Furthermore, it is interesting to note that depression was related to *satisfaction*, rather than the *number* of supports, and this is consistent with previous work indicating the former to be a more useful or predictive measure (NFER-Nelson, 1997).

Other researchers have highlighted the specific importance of spousal support in paternal depression. Consistent with these findings, higher levels of depression in the study were associated with lower spousal support (as assessed by the PSI spouse subscale). Spousal support may also mediate the relationship between maternal and paternal depression. Previous work has suggested that maternal depression is a risk factor for paternal depression (Areias *et al.*, 1996; Ballard *et al.*, 1994), which may reflect the decreased availability of spousal support during an episode of depression. However, this study found no evidence of a consistent relationship between maternal and paternal depression. The apparent lack of concordance between maternal and paternal depression postpartum suggests that health visitors should not make any assumptions regarding men's health on the basis of their partner's well-being. The importance of identifying paternal depression is indicated not only by the direct implications for the father, but by the association of depression and increased parenting stress.

5.4.3 Depression and parenting stress

Paternal depression has been shown to be a strong predictor of father-infant attachment at eight months postpartum (Ferketich & Mercer, 1995). In the present study, fathers who reported higher levels of depression postpartum also perceived their child to be more difficult, and parenting to be more stressful, than fathers with lower symptomatology postpartum. Reflecting the stability of depressive symptoms throughout the study, depression antepartum was the sole predictor of parenting stress at six weeks. The statistical analyses do not indicate the direction of causality between these two variables, but the relative stability of depression suggests that fathers who are low in mood report subsequent parenting to be more stressful, rather than that high levels of parenting stress result in postnatal depression. The sequelae of depression and parenting stress raise the importance of future work in this area.

5.4.4 Experiences of childbirth and parenting stress

Depression may also mediate the observed relationship between more negative reported experiences of childbirth and higher parenting stress. Previous studies have provided preliminary evidence for the impact of the qualitative paternal birth experience on infant crying (Wikander & Theorell, 1995) and the parent-infant relationship (Peterson *et al.*, 1979). The current study provides some additional evidence that more negative birth experiences may be associated with increased child-related stress, both globally, and specifically within the ‘demandingness’ subscale. The latter includes items relating to the duration of crying, and demands made by the child, e.g. “when my child cries it usually lasts.....” and “there are some things my child does

that really bother me a lot". At six weeks old, positive responses to the latter are likely to reflect crying and whinging, as the behavioural repertoire is otherwise limited. However, there was no significant relationship between birth experience and the 'mood' subscale, which mostly directly relates to the frequency of crying and infant unhappiness e.g. "my child seems to cry or fuss more often than most children" (Abidin, 1995). To the extent to which infant crying is reflected by global child-related stress and the 'demandingness' subscale, the current study provides only limited support for the findings of Wikander & Theorell (1995).

Peterson *et al.*, (1979) found that the emotional quality of the birth experience was the most significant predictor of paternal attachment at six months. The current study found no significant relationship between birth experience and paternal attachment as assessed by the attachment subscale of the PSI parent domain. This may reflect the difference in infant age at follow-up, as six weeks is very early in the development of an attachment relationship between father and infant. The early father-infant relationship may also be influenced by other variables not considered in the present study. For example, anecdotal evidence suggests fathers initially feel less involved with their infants while their partner breast feeds; this may be an issue at six weeks, but is more likely to have dissipated by the six month follow-up of the Peterson study.

5.4.5 Obstetric complications and parenting stress

The study provides only very limited support for the implications of *subjective* paternal experience of childbirth for later infant crying and the father-infant relationship. However, stronger evidence indicates a significant effect of obstetric complications on later parenting stress, and this relationship does not appear to be mediated by depression. Fathers who experienced a delivery involving obstetric complications reported significantly lower levels of stress in both the child and parent domains. Furthermore, labours involving an epidural were associated with lower stress within the parent domain. Other studies have suggested that longer labours and obstetric complications may be associated with paternal 'compensation behaviour', or greater paternal involvement with the infant (e.g. Peterson *et al.*, 1979; Westreich *et al.*, 1991). However, parenting stress is qualitatively different to paternal involvement in caretaking activities, and the PSI could not be considered to measure compensation behaviour.

Research regarding the association of maternal postpartum depression and delivery stress may offer some suggestions for understanding the above results. O'Hara *et al.*, (1982) found more difficult deliveries were associated with lower postpartum depression, and proposed that greater social support from these women's partners mediated the relationship. Transposing these findings to the observed relationship between delivery complications and lower *paternal* parenting stress in the current study suggests two related hypotheses. Firstly, more complex deliveries may have facilitated greater social support within the *couple* relationship, or alternatively increased general 'outside' social support for the mother (or, indeed the couple). These

two hypotheses assume social support has a subsequent positive impact on the parenting stress experienced by fathers. However, the current study found no evidence of variation in social support with delivery complexity, or an association between social support and parenting stress. Given that obstetric complications appear to have a positive impact, i.e. reduce, levels of parenting stress, further investigation of the mechanism and associated variables underlying this relationship would be a valuable area for future research. This might include more detailed exploration of the different types of reported complications, and more sensitive measures of social support, particularly within the couple relationship.

5.4.6 Clinical and research implications of parenting stress

This study indicates the possible influence of paternal mood, subjective experiences of childbirth and obstetric complications on early parenting stress. High levels of parenting stress may be indicative of early disruption to father-infant relationships, although longer term follow-up is necessary, particularly as the PSI has only been standardised with mothers, and not for fathers of six week old infants. A longer follow-up period would also provide the opportunity to investigate how these identified variables might influence parent-infant relationships over time, in the context of infant development and changes to the paternal role. The importance of identifying factors which may influence these early relationships is indicated by the highly significant effect of the quality of parent-child attachment on later psychosocial adjustment (e.g. Howe, Brandon, Hinings & Schofield, 1999). Children with an insecure pattern of attachment have been found to be at risk for developing psychological difficulties across the lifespan (e.g. Sroufe, 1996).

5.5 Paternal expectations and experiences of childbirth

5.5.1 Limitations of the Childbirth Schema Scale

The paucity of research pertaining to paternal expectations and experiences of childbirth is reflected in the lack of suitable empirical instruments with which to assess these variables. The Childbirth Schema Scale has not been previously used with fathers, so it was not possible to ascertain the extent to which the responses of participants in the study were comparable with those of other fathers, in particular, those not attending parent education classes. A further limitation of the instrument is the absence of information regarding paternal appraisal of their expectations or experience. For example, two fathers may both expect labour to be 'very painful', but have very different cognitive appraisals regarding their capacity to cope with the anticipated pain of their partner. It could be argued that the appraisal component might provide a more accurate reflection of fathers' (emotional) expectations and experiences. On a related theme, the CSS does not measure fathers' secondary appraisals, i.e. their expectations and experience of their roles in labour, and ways in which they might support their partner. Again, these are important components of paternal expectations and experiences which were beyond the scope of the present study.

5.5.2 Discrepancy between fathers' expectations and experiences of childbirth

From the literature available, no previous studies have compared fathers' prior expectations with their actual experiences of childbirth. In this study, fathers described their experiences of childbirth as significantly more positive than they had anticipated, both overall and on the *sensations of work* and *time* CSS subscales. Fathers experienced labour as significantly shorter, easier, less painful and anxiety-provoking than anticipated.

Fathers' antenatal attitudes and fears regarding the length and pain associated with birth may reflect parent education classes, which by necessity must address and prepare fathers for potential complications, which in reality, are experienced by a relative minority. Secondly, prospective fathers are likely to be hyper-vigilant to sources of birth-related information, such as articles in the media, which often focus on minority experiences which make them novel and newsworthy, e.g. babies delivered in extreme circumstances, or medical negligence cases.

It is interesting to consider the positive discrepancy between fathers' expectations and experiences in the context of previous research suggesting labour and delivery may be a distressing and anxiety-provoking experience for fathers (e.g. Chandler & Field, 1997; Nichols, 1993). The lack of an appraisal dimension to the CSS, and normative data for fathers restricts evaluation of these results, in particular objective comparison of the stress associated with childbirth, relative to other events. Future work should aim to address these limitations, which is likely to include development of a new

measure tailored to the paternal experience of labour and delivery. Furthermore, due to the paucity of research, more qualitative research methods would be an important adjunct to quantitative investigations.

5.5.3 Reported experiences and objective obstetric information

Previous research has not considered the extent to which subjective reports of childbirth reflect actual obstetric information. This study found little evidence of consistency between obstetric records and subjective paternal reports, although paternal experiences were significantly related to the mode of delivery. Spontaneous deliveries were rated as less painful and anxiety-provoking than those requiring surgical intervention, although counter-intuitively, intervention deliveries were rated more positively on the *emotions of outcome* subscale. The six items on this scale (in their positive form) are 'rewarding', 'satisfying', 'relieving', 'exciting', 'beautiful' and 'not scary'. Although intervention deliveries (which necessitate the involvement of the medical team and considerable additional equipment) may have increased paternal fear, 'scary-not scary' has the lowest factor weighting on this subscale. High ratings of fear may also have been outweighed by intense feelings of 'relief' and 'reward' following a difficult delivery. This may have been further augmented by the time lapse between birth and the assessment of paternal experiences; at six weeks more negative aspects of the birth may have been overshadowed by general positive feelings about the safe arrival of the baby (i.e. items pertaining to reward, satisfaction, relief, excitement and beauty).

5.5.4 Implications for future research

The importance of understanding how subjective paternal experiences may relate to obstetric information is highlighted by the observed association of these two variables with parenting stress. Future work in this area should consider a specific instrument designed for use with fathers, in addition to earlier assessment of the paternal experience of childbirth. Although in reality very difficult to obtain, a more immediate measure might provide a purer assessment of labour and delivery, which is less likely to have been influenced by general thoughts and emotion about the baby's arrival. The accuracy of comparisons between obstetric details and paternal experiences would also be enhanced by a more sophisticated indicator of the complexity of labour and delivery. This might include additional variables such as foetal monitoring, or marked deviations from the normal speed of delivery. In addition, a standard obstetric checklist would enhance the comparability of obstetric data collected from individual midwives.

On a clinical level, the discrepancy between subjective experiences of delivery and obstetric information highlights the importance of exploring individual father's perceptions of the birth. The danger of assuming fathers' experiences of the birth will match those of the attending midwife is manifest not only in the direct implications for the father, but the differential association of these two variables with subsequent parenting stress.

5.6 Coping, paternal mood and expectations and experience of childbirth

5.6.1 The Ways of Coping Questionnaire

The Ways of Coping Questionnaire (WCQ) provides a process-orientated approach to coping, which is directed towards the thoughts and actions an individual has used to cope with a specific stressful encounter. Coping is characterised by a dynamic process of appraisal and reappraisal; changes in the person-environment relationship (either independent from, or contingent on coping effort) result in reappraisal of the situation and what can be done. In turn, this may prompt a change in coping direction or effort.

Coping was measured only once, antenatally, in this study, so it was not possible to investigate the consistency with which particular coping strategies were used over different coping episodes. Consequently fathers' responses on the WCQ antepartum do not necessarily reflect the coping strategies they employed when anticipating or actually experiencing labour and delivery. Fathers' experiences of childbirth were significantly different from their expectations, implying a process of reappraisal during the birth. The single measure of coping strategies does not permit identification of those fathers who may have been able to flexibly change their coping strategies on the basis of re-appraisals, and others who may have experienced greater difficulty in responding to the unanticipated situation. However, as fathers experienced labour more positively than they had anticipated, this may be less relevant to the present study.

5.6.2 Coping and problem solving strategies associated with paternal mood

The chronic illness and coping literature has consistently identified particular adaptive and maladaptive coping strategies associated with anxiety, depression and adaptational outcomes (e.g. Folkman, Lazarus, Gruen, & DeLongis, 1986; King & Kennedy, 1999).

The results of this study were broadly consistent with previous coping research, and indicated that higher psychological distress antepartum was associated with confrontive coping, accepting responsibility and escape-avoidance strategies.

The Social Problem Solving Inventory (SPSI) distinguishes between problem solving strategies and overall problem orientation, which may be negative or positive.

Individuals with a negative problem orientation have a general tendency to appraise problems as a threat, and have low self efficacy regarding their ability to solve such problems (D'Zurilla, Nezu & Maydeu-Olivares, 1996). With this cognitive set, these individuals are more likely to appraise the demands of a situation as exceeding their available coping resources, with resulting stress. Consistent with the model of stress and coping, fathers with a negative problem orientation experienced lower mood throughout the study, and reported more negative experiences of childbirth.

5.6.3 Coping and problem solving strategies associated with paternal expectations of childbirth

Rational (SPSI) and planful (WCQ) problem solving coping strategies were both associated with lower expectations of birth. These results suggest that a careful and systematic problem solving approach towards the birth generates a low, but perhaps realistic, assessment, i.e. that the birth will be painful, difficult and scary at times. The association of planful problem solving with more negative paternal experiences supports the accuracy of fathers' prior expectations. Although the CSS does not include an appraisal component, rational and planful problem solving approaches are not associated with increased mood disturbance antepartum. This suggests that although their expectations and experience may be more negative, fathers with this coping strategy do not necessarily appraise the birth as potentially exceeding their available coping resources.

Conversely, fathers with a more careless and impulsive approach to problems had higher expectations about the approaching birth. This suggests fathers with a less systematic approach to thinking about the approaching birth are not so preoccupied with considering potential difficulties, which had been identified by men using a planful problem solving approach (manifest in more negative expectations). However, impulsive problem solving strategies were associated with higher levels of depression antepartum, indicating some possible disadvantages of this strategy. It might be predicted that fathers with an impulsive/careless approach to problems would subsequently experience labour and delivery more negatively, when they found themselves unprepared for some of the more difficult aspects. However, the present

study found no evidence of an association between impulsivity and subjective birth experience. This suggests fathers with an impulsive approach to problems were able to employ an effective strategy to cope with the demands of labour.

Escape-avoidance strategies were unrelated to expectations or experience of childbirth, but were significantly associated with greater mood disturbance ante- and postpartum. This suggests that although fathers successfully avoided thinking about labour and delivery, their lack of planning or identification of potential strategies was manifest in increased mood disturbance. One conclusion might be that a degree of anticipatory planning about the approaching birth, and identifying some kind of strategy, is beneficial in terms of mood.

5.6.4 Clinical and research implications

The results of the study are constrained by the extent to which fathers' responses on the WCQ reflect the strategies actually employed during the antenatal period, childbirth and postpartum. Future work in this area could address this limitation through the use of a trait coping measure, or repeated sampling with specific instructions to participants to consider their responses in the context of the approaching birth, or actual experience of labour and delivery. Due to the paucity of research in this area, future studies should include more qualitative investigation of paternal anticipated and actual, ways of coping during labour and delivery.

The preparation for surgery literature emphasises the importance of consistency between the level of preparatory information and the individual's coping style (e.g.

Miller & Mangan, 1983). This suggests extra preparatory information would not necessarily be of benefit to fathers with an escape-avoidance coping strategy. However, research suggests pre-surgery patients may benefit from a basic intervention designed to teach and promote the use of cognitive challenges for anxiety-provoking thoughts (Ridgeway & Matthews, 1982). The positive effect of this intervention on levels of anxiety and pre and post surgical measures, were greater than for information alone, and independent of individual personality and coping style. There is also increasing evidence to support the use of coping effectiveness training for patients with chronic medical conditions (e.g. King & Kennedy, 1999). Future research is clearly required to investigate the applicability of these interventions for prospective fathers.

5.6.5 Coping and problem solving strategies associated with experiences of childbirth

The transactional model of stress and coping emphasises the importance of a match between coping strategies and the specific situation; problem-focused coping strategies are adaptive when the situation is amenable to change (e.g. accepting responsibility, planful problem solving, confrontive coping, positive reappraisal), whereas emotion-focused strategies (e.g. distancing, escape-avoidance) are more suitable when the situation cannot be altered.

More negative paternal experiences of labour and delivery were significantly associated with the use of two problem-focused strategies, 'planful problem solving' and 'accepting responsibility' (as assessed antenatally with the WCQ). Accepting responsibility involves acknowledging one's own role in the problem, with the

concomitant theme of trying to put things right (Folkman & Lazarus, 1988). Therefore feeling some level of responsibility for one's partner's labour pains is likely to be a stressful experience, particularly within the constraints of what might actually be done to alleviate the pain.

Conversely, an emotion-focused coping strategy and avoidant problem solving approach were associated with more positive (i.e. less painful) ratings of *sensations* postpartum. Distancing involves cognitive effort to detach oneself from the situation, and minimise its significance. Thus, to the extent to which fathers' responses to the WCQ and SPSI reflect the general coping strategies and those that were employed during labour and delivery, this study provides preliminary evidence that emotion focused strategies may be associated with more positive experiences of labour, and problem focused coping strategies may be associated with more negative experiences. These results suggest there may be little opportunity for fathers to actively change the situation, constraining the use of problem focused strategies.

5.6.6 Implications for future research

The limitations for active change afforded by labour and delivery, and importance of maintaining congruence between paternal behaviour, coping style and the couple relationship, indicate many important directions for future research and antenatal intervention. The results of the current study are confined to paternal experience, although labour and delivery is essentially an experience shared by both mother and father. Therefore it would be important to extend this work to include simultaneous investigation of the maternal perspective. This might include maternal ratings of helpful

and unhelpful paternal behaviour; although the present study suggests problem-focused approaches were associated with more negative paternal experiences, mothers may appraise this behaviour very positively.

In summary, consideration of potential antenatal interventions to enhance the paternal experience of childbirth requires appreciation of situational factors which may limit the opportunity for problem-focused coping strategies, congruence with individual ways of coping, and maternal perspectives regarding their partners' behaviour.

5.7 Conclusions, clinical implications and directions for future research

The present study found evidence of clinically significant anxiety antepartum in around 15% of first time fathers. Although the transition to parenthood is associated with changes in many spheres, there was preliminary evidence to suggest elevated anxiety was associated with fears regarding the approaching birth. Further research, perhaps with 'experienced' fathers is required to isolate factors which might contribute to this antenatal anxiety. The number of fathers experiencing clinically significant anxiety suggests prospective fathers may benefit from some basic anxiety management techniques, perhaps as a component of parent education. However, for most fathers anxiety reduced to non clinical levels after the birth, indicating more intensive intervention is unnecessary.

Levels of paternal depression remained very low throughout the study, although there was a non significant trend towards increased depression postpartum, with 7.6% reaching the clinical cut off. Antenatal depression was the sole predictor of parenting stress at six weeks. The association between high levels of parenting stress and early disruption to parent-infant relationships indicates the importance of early identification and treatment of depression. This study found no consistent relationship between maternal and paternal depression, which emphasises the need for pro-active identification of paternal depression, rather than assumptions based on maternal health during routine mother-infant appointments.

The association of parenting stress with disruption to early parent-infant relationships highlights the importance of future research in clarifying the mechanisms underlying the link with obstetric complications and subjective paternal experience of childbirth. More detailed exploration of these issues might help to identify protective or risk factors for parenting stress, with attendant implications for service change and development.

This study provided initial evidence to support the association of specific coping and problem solving strategies with expectations and experiences of childbirth. Further research is required to understand the impact of paternal behaviour on the maternal experience of childbirth, and how antenatal interventions might maximise adaptive paternal coping strategies within the constraints of labour and delivery. Paternal antenatal preparation would also benefit from further research to explore control beliefs during labour, therefore optimising the level of paternal control.

Overall, the study provides initial evidence of the association of paternal expectations about labour and delivery with elevated levels of antenatal anxiety. Fathers experienced the birth more positively than they had anticipated, and levels of anxiety declined postpartum. Reported depressive symptomatology remained low throughout the study, and antenatal mood was the best predictor of adjustment to parenthood. The study raises important areas for further research, including the relationship between parenting stress, obstetric variables and experiences of childbirth. Antenatal preparation for fathers would also benefit from future research to explore issues of control and the opportunity for active change during labour.

References

- Abidin, R.R. (1995). Parenting Stress Index (3rd edition) professional manual. Odessa, Florida: Psychological Assessment Resources, Inc.
- Areias, M.E.G., Kumar, R., Barros, H., & Figueiredo, E. (1996). Correlates of postnatal depression in mothers and fathers. British Journal of Psychiatry, 169, 36-41.
- Ballard, C.G., Davis, R., Cullen, P.C., Mohan, R.N., & Dean, C. (1994). Prevalence of postnatal psychiatric morbidity in mothers and fathers. British Journal of Psychiatry, 164, 782-788.
- Bartels, R. (1999). Experiences of childbirth from the father's perspective. British Journal of Midwifery, 7, 11, 681-683.
- Bedford, V.A., & Johnson, N. (1988). The role of the father. Midwifery, 4, 4, 190-195
- Berry, L. (1988). Realistic expectations of the labour coach. Journal of Obstetric Gynaecological & Neonatal nursing, 17 (5): 354-355.
- Bertsch, T., Nagashima-Whalen, L., Dykeman, S., Kennell, J., & McGrath, S. (1990). Labor support by first time fathers: direct observations. Journal of psychosomatic obstetrics and Gynaecology, 11, 251-260.
- Block, C., & Block, R. (1975). The effect of the husband and the obstetrician on pain perceptions and control in childbirth. Birth and the Family Journal, 2, 48-64.
- Blumberg, N.J. (1980). Effects of neonatal risk, maternal attitude and cognitive style on early postpartum adjustment. Journal of Abnormal Psychology, 89, 139-150.
- Brown, M.A. (1983). Social support and symptomatology: a study of first time expectant parents. Dissertation Abstracts International, 44, 1118.
- Campbell, S.B. & Cohn, J.F. (1991). Prevalence and correlates of post partum depression in first-time mothers. Journal of Abnormal Psychology, 100, 594-599.
- Chandler, S., & Field, P.A. (1997). Becoming father. Journal of Nurse-Midwifery, 42, 1, 17-24
- Chapman, L.L. (1992). Expectant fathers' roles during labour. JOGNN, 21, 2, 114-120
- Clinton, J.F. (1987). Physical and emotional responses of expectant fathers throughout pregnancy and the early postpartum period. International Journal of Nursing Studies, 24,1, 59-68.
- Cox, J.L., Holden, J.M., & 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.A., Greenberg, M.T., Ragozin, A.S., Robinson, N.M & Basham, R.B. (1983). Effects of stress and social support on mothers of premature and full-term infants. Child Development, 54, 209-217.

Czarnocka, J., & Slade, P. (2000). Prevalence and predictors of post-traumatic stress symptoms following childbirth. British Journal of Clinical Psychology, 39, 35-51.

Diemer, G.A. (1997). Expectant fathers: influence of perinatal education on stress, coping & spousal relations. Research in Nursing & Health, 20, 281-293.

DiMatteo, M.R., Kahn, K.L., & Berry, S.H. (1993). Narratives of birth and the postpartum: analysis of the focus group responses of new mothers. Birth, 20, 4, 204-210.

Draper, J. (1997). Whose welfare in the labour room? A discussion of the increasing trend of fathers' birth attendance. Midwifery, 13, 132-138.

D'Zurilla, T.J., Nezu, A.M., & Maydeu-Olivares, A. (1996). Social problem solving inventory-revised short form manual. Toronto: Multi-Health Systems, Inc.

Ely, S., Compas, B.E., Epping, J.E., & Worsham, N. (1998). Stress responses and psychological adjustment in patients with cancer and their spouses. Journal of Psychosocial Oncology, 16, 2, 59-77

Enkin, M., Keirse, MJNC, Renfrew, M. (1995). A guide to effective care in pregnancy and childbirth. 2nd edition. Oxford University Press: Oxford

Ferketich, S.I., & Mercer, R.T (1995). Paternal-infant attachment of experienced and inexperienced fathers during infancy. Nursing Research, 44, 1, 31-37.

Folkman, S., & Lazarus, R.S. (1988). Ways of coping questionnaire manual. California: Mind Garden

Folkman, S., Chesney, A., McKusick, L., Ironson, G., Johnson, D., Coates, T. (1991). Translating coping theory into an intervention. In Eckenrode J. (Ed.). The social context of coping. New York: Plenum Press

Folkman, S., & Lazarus, R.S. (1980). An analysis of coping in a middle aged community sample. Journal of Health and Social Behaviour, 21, 219-239.

Folkman, S., & Lazarus, R.S., Gruen, & DeLongis, A.(1980). Appraisal, coping, health status and psychological symptoms. Journal of Personality and Social Psychology, 50, 571-579.

Gattuso, S.M., Litt, M.D., & Fitzgerald, T.E. (1992). Coping with gastrointestinal endoscopy: self efficacy enhancement and coping style. Journal of Consulting and Clinical Psychology, 60, 1, 133-139

Gerzi, S., & Berman, E. (1981). Emotional reactions of expectant fathers to their wives' first pregnancy. British Journal of Medical Psychology, 54, 259-265.

Gottlieb, B.H. & Pancer, S.M. (1988). Social networks and the transition to parenthood. In W.A.Goldberg & G.Y.Michaels (Eds). The transition to parenthood: current theory and research. Cambridge: Cambridge University Press

Greenberg, M., & Morris, N. (1974). Engrossment: the new-born's impact on the father. American Journal of Orthopsychiatry, 44, 520-531.

Hall, J. (1993). Attendance not compulsory. Nursing Times, 89, 46, 69-70.

Harris, B., Huckle, P., Thomas. (1989). The use of rating scales to identify post natal depression. British Journal of Psychiatry, 154, 813-817.

Hearn, J. (1984). Childbirth, men and the problem of fatherhood. Radical Community Medicine, 17, 9-19.

Hopkins, J., Campbell, S.B., & Marcus, M. (1987). The role of infant-related stressors in post partum depression. Journal of Abnormal Psychology, 96, 237-241.

Hossain, Z., Field, T., Gonzalez, J., Malphurs, J. (1994). Infants of depressed mother interact better with their non depressed fathers. Infant Mental Health Journal, 15, 4, 348-357.

Howe,D., Brandon, M., Hinings, D., & Schofield, G. (1999). Attachment Theory, Child Maltreatment & Family Support. Basingstoke: Macmillan Press.

Jackson, K.B. (1997). Paternal presence at delivery. British Journal of Midwifery, 5, 11, 682-684.

Johnson, J.E.(1975). Stress reduction through sensation information. In I.G. Sarason & C.D.Spielberger (Eds.). Stress and anxiety, vol.2, New York: Wiley

King, C., & Kennedy, P. (1999). Coping effectiveness training for people with spinal cord injury: preliminary results of a controlled trial. British Journal of Clinical Psychology, 38, 5-14.

Klaus. M., & Kennell, J. (1974). Developmental Medicine and Child Neurology, 16, 172-179.

Lamb, M.E. (1982). Paternal influences on early socio-emotional development. Journal of Child Psychology & Psychiatry, 23, 2, 185-190.

Lavender, T. (1997). Can midwives respond to the needs of fathers? British Journal of Midwifery, 5, 92-96.

Lazarus, R., Folkman, S. (1984). Stress, appraisal and coping. New York: Springer

- Longobucco, D.C., & Freston, M.S. (1989). Relation of somatic symptoms to degree of paternal role preparation of first time expectant fathers. JOGNN, 4, 482-487
- Lovestone, S., & Kumar, R. (1993). Postnatal psychiatric illness: the impact on spouses. British Journal of Psychiatry, 163, 210-216
- MacMillan, M. (1994). Men at birth: Royal College of Midwives' Survey. London: Royal College of Midwives
- Marks, M., & Lovestone, S. (1995). The role of the father in parental postnatal mental health. British Journal of Medical Psychology, 68, 157-168.
- May, K. (1982). Three phases of father involvement in pregnancy. Nursing Research 31, 6, 337-342.
- McBride, B.A. (1989). Stress and fathers' parental competence: implications for family life and parent educators. Family Relations, 38, 385-389.
- McCannell, K. (1988). Social networks and the transition to motherhood. In R. Milardo (Ed) Families and social networks. Newbury Park, CA: Sage
- McKee, L. (1980). Father and childbirth: 'just hold my hand'. Health Visitor, 53, 368-372.
- Meichenbaum, D., Turk, D., & Burnstein, S. (1975). The nature of coping with stress. In I.G. Sarason & C.D. Spielberger (Eds.). Stress and anxiety, vol.2, New York: Wiley
- Mercer, R.T. (1990). Parents at risk. New York; Springer
- Miller, S. & Mangan, C. (1983). Interacting effects of information and coping style in adapting to gynaecologic stress: should the doctor tell all? Journal of Personality and Social Psychology, 45, 1, 223-236
- Murray, L. & Cooper, P.J. (Eds)(1997). Postpartum depression and child development. New York: The Guilford Press
- Nichols, M. (1993). Paternal perspective of the childbirth experience. Maternal Child Nursing Journal, 21,3, 99-108.
- Nezu, A.M., & D' Zurilla, T.J. (1989). Social problem solving and negative affective conditions. In P.C.Kendall & D.Watson (Eds). Anxiety & depression: distinctive & overlapping features (pp. 285-315). New York: Academic Press
- NFER-Nelson (1997). Measures in health psychology: a user's portfolio. Windsor: NFER-Nelson Publishing Company
- Nolan, M. (1994). Caring for men in antenatal classes. Modern Midwife, 4,2, 25-28

- Nunnally, J.C. (1978). Psychometric theory (2nd ed). New York: McGraw-Hill
- Odent, M. (1984). Birth reborn. Souvenir Press: London
- Office of Population Censuses and Surveys. (1990). Standard Occupational Classification (volume 3). London: HMSO
- O'Hara, M.W. (1994). Postpartum depression: causes and consequences. New York: Springer-Verlag
- O'Hara, M.W., Rehm, L.P. & Campbell, S.B. (1982). Predicting depressive symptomatology: cognitive behavioural models and post partum depression. Journal of Abnormal Psychology, 91, 457-461.
- O'Hara, M.W., Rehm, L.P. & Campbell, S.B. (1983). Post-partum depression: a role for social network and life stress variables. Journal of Nervous and Mental Disease, 171, 336-341.
- Ozburt, L.A.J. (1976). Expectant fathers' perception of fathering. American Journal of Nursing, 76, 9, 1440-1442.
- Palkovitz, R. (1982). Fathers' birth attendance, early extended contact and father-infant interaction at five months post partum. Birth: issues in Perinatal Care and Education, 9,3, 173-177.
- Palkovitz, R. (1985a). fathers' birth attendance, early contact and extended contact with their new-borns: a critical review. Child development, 56, 392-406.
- Palkovitz, R. (1987). Father's motives for birth attendance. Maternal Child Nursing Journal, 16, 123-129.
- Paykel, E.S., Emms, E.M., Fletcher, J. & Rassaby, E.S. (1980). Life events and social support in puerperal depression. British Journal of Psychiatry, 136, 339-346.
- Peterson, G.H., Mehl, L.E., & Leiderman, P.H. (1979). The role of some birth-related variables in father attachment. American Journal of Orthopsychiatry, 49, 2, 330-338.
- Pierce, (1994). Cognitive appraisal of stress events: measuring the personal schema of childbirth. Journal of Nursing Measurement, 2, 117-127.
- Piontelli, A. (1997). From fetus to child. London & New York: Tavistock/Routledge.
- Pridham, k., Lytton, D., Chang, A., & Rutledge, D. (1991). Early post-partum transition: progress in maternal identity and role attainment. Research in Nursing and Health, 14, 21-31.
- Ptacek, J.T., Ptacek, J.J., & Dodge, K.L. (1994). Coping with breast cancer from the perspectives of husbands and wives. Journal of Psychosocial Oncology, 12, 3, 47-73.

Raskin, V.D., Richman, J.A., & Gaines, C. (1990). Patterns of depressive symptoms in expectant and new parents. American Journal of Psychiatry, 147, 5, 658-660.

Ridgeway, V. & Mathews, A. (1982). Psychological preparation for surgery: a comparison of methods. British Journal of Clinical Psychology, 21, 271-280.

Sarason, B.R., Shearin, E.N., Pierce, G.R., & Sarason, I.G. (1987a). a brief measure of social support: practical and theoretical implications. Journal of Social and Personal Relationships, 4, 497-510.

Seel, R. (1994). Men at the birth. New Generation 13, 4, 16-17.

Sroufe, L.A. (1996). Emotional development: the organisation of emotional life in the early years. Cambridge: Cambridge University Press

Starn, J. (1993). Strengthening family systems. In F.H. Nichols (Ed.), AWOHONN's clinical issues in perinatal & women's health nursing: Perinatal education (pp. 35-43). Philadelphia: Lippincott.

Strickland, O.L. (1987). The occurrence of symptoms in expectant fathers. Nursing Research, 36, 3, 184-189.

Suls, J., & Wan, C.K.(1989). Effects of sensory and procedural information on coping with stressful medical procedures and pain: a meta-analysis. Journal of Consulting and Clinical Psychology, 57, 3, 372-379.

Szeverenyi, P., Poka, R., Hetey, M., & Torok, Z.(1998). Contents of childbirth-related fear among couples wishing the partner's presence at delivery. Journal of Psychosomatic Obstetrics & Gynaecology, 19, 38-43.

Terry, D.J. (1991). Stress, coping and adaptation to new parenthood. Journal of Social and Personal Relationships, 8, 527-547.

Vehvilainen-Julkunen, K., & Liukkonen, A. (1998). Fathers' experiences of childbirth. Midwifery, 14, 10-17.

Wandersman, L., Wandersman, A., & Khan, S. (1980). Social support in the transition to parenthood. Journal of Community Psychology, 8, 332-342.

Westreich, R., Spector-Dunsky, L., Klein, M., Papagergiou, A., Kramer, M., & Gelfand, M. (1991). The influence of birth setting on the father's behaviour toward his partner and infant. Birth, 18, 198-202.

Wikander, B., & Theorell, T. (1997). Fathers' experience of childbirth and its relation to crying in his infant. Scandinavian Journal of the Caring Sciences, 11, 151-158.

Williams, P.(2000). Fathers should miss birth, says guru. The Independent on Sunday, 16 January 2000.

Zigmond, A., & Snaith, R.(1983). The hospital anxiety and depression scale. Acta Psychiatrica Scandinavica, 67, 361-370.

APPENDIX NOT COPIED
ON INSTRUCTION FROM
UNIVERSITY