

**Stress, Psychological Distress and Social Support during Pregnancy:
A comparison of first-time expectant parents.**

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By

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Abstract

Stress, Psychological Distress and Social Support during Pregnancy: A comparison of first-time expectant parents.

This research thesis was based upon an exploratory study that investigated the relationships between stress, psychological distress and social support in a sample of pregnant women and their partners. The study was particularly interested in the exploration of gender differences in reported stress and distress, and the provision of new information about fathers' experiences during pregnancy. Specific hypotheses were proposed which predicted gender differences in reported levels of stress, psychological distress and linear relationships between stress, psychological distress, and social support.

Thirty-eight female and twenty-nine male participants expecting their first baby took part in the study during the third trimester of pregnancy. The sample was recruited from Parentcraft Groups held at the Leicester General Hospital. Participants completed a booklet of self-report measures on one occasion. Independent T Tests were undertaken to identify any gender differences. Relationships between variables were examined using bivariate correlations. The relative power of variables as predictors of psychological distress was examined using regression analysis.

Significant gender differences were found with females reporting higher levels of stress, psychological distress and depression than males. Significant positive relationships were found between stress and psychological distress. No significant relationships were found between social support and stress or social support and psychological distress. Significant negative relationships were found between satisfaction with partner relationships and psychological distress. No significant gender differences in social support were identified. Stress and satisfaction with the partner relationship were the strongest predictors of psychological distress, whilst stress and the quality of social support were the strongest predictors of depression.

Clinical implications were proposed in light of the findings. Sample, measurement and design limitations of the study were identified. Directions for future research were presented.

For the majority of expectant parents, pregnancy was a time of good psychological adjustment. However, for a minority of expectant mothers and fathers, clinically significant levels of stress, psychological distress and depression were present during pregnancy. It is important that future service provision considers the needs of expectant mothers and fathers during pregnancy in addition to the postpartum period.

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Table of Contents	Page
<u>Abstract</u>	i
Acknowledgements	ii
Table of Contents	iii
List of Tables	vii
List of Figures	viii
List of Appendices	ix
1. <u>Introduction</u>	1-37
1.1 Overview of the Current Study	1
1.2 Stress Research	2-4
1.2.1 Stimulus Model of Stress	2
1.2.1 Response Model of Stress	2-3
1.2.3 Stimulus-Response Model of Stress	3
1.2.4 Transactional Model of Stress	3-4
1.3 The Impact of Stress upon Psychological Well-being: Life Event Studies	4-6
1.4 Social Support Research	6-10
1.4.1 Buffering Model of Social Support	7-8
1.4.2 Direct Effects Model of Social Support	9
1.4.3 Dimensions of Social Support	9-10
1.5 Gender Differences in Psychological Distress	10-11
1.6 Gender Differences in Stress and Social Support	11-12
1.7 The Transition to Parenthood	12-29
1.7.1 The Transition to Motherhood	14-20
1.7.2 Postpartum Research	14-15

Table of Contents	Page
1.7.3 Antepartum Research	15-17
1.7.4 Motherhood Research examining Stress and Social Support	17
1.7.5 Stress, Social Support and Birth Outcomes	17-18
1.7.6 Stress, Social Support and Psychological Outcomes	18-20
1.8 Inclusion of Fathers	20-27
1.8.1 Co-morbidity of Depression in Mothers and Fathers	21
1.8.2 Postpartum Research including Fathers	21-23
1.8.3 Pregnancy Research including Fathers	23-25
1.8.4 Stress and Social Support Research including Fathers	25-27
1.8.5 Importance of Partner Relationships	27-29
1.9 Overview, Conclusions and Unresolved Questions	29-31
1.10 Current Study	32-37
1.10.1 Evolution of the Research	34-35
1.10.2 Research Questions and Hypotheses	36-37
Research Questions	36
Specific Hypotheses	37
2. <u>Method</u>	38-58
2.1 Design	38
2.2 Participants	38-43
2.3 Measures	43-55
2.3.1 Semi-structured questions	45-46
2.3.2 Perceived Stress Scale	46-47
2.3.3 General Health Questionnaire	47-49

Table of Contents	Page
2.3.4 Edinburgh Postnatal Depression Scale	49-51
2.3.5 Family Support Scale	51-53
2.3.6 Relationship Assessment Scale	53-55
2.4 Procedure	55-58
2.4.1 Ethical Approval	55
2.4.2 Recruitment from Parentcraft Groups	55-57
2.4.3 Pilot Study	57-58
3. <u>Results</u>	59-80
3.1 Method of analysis	59-60
3.2 Descriptive and Explorative Analysis	60-61
3.3 Research Hypotheses	61-80
3.3.1 Hypothesis One	61-64
3.3.2 Hypothesis Two	64-68
3.3.3 Hypothesis Three	69-70
3.3.4 Hypothesis Four	70-75
3.3.5 Hypothesis Five	76-80
4. <u>Discussion</u>	81-106
4.1 Overview	81
4.2 Research Hypotheses	82-92
4.2.1 Hypothesis One	82-83
4.2.2 Hypothesis Two	85-87
4.2.3 Hypothesis Three	87-88
4.2.4 Hypothesis Four	88-91

Table of Contents	Page
4.2.5 Hypothesis Five	91-92
4.3 Summary of Findings in Relation to Previous Literature	92-93
4.4 Clinical Implications	93-97
4.5 Limitations of the Study	97-102
4.5.1 Sample	97-99
4.5.2 Measures	99-101
4.5.3 Method of investigation	101-102
4.6 Directions for Future Research	102-105
4.7 Conclusions	106
References	107-120
Appendices	121-137

List of Tables	Page
Table 1: Demographic Characteristics of the Sample	42
Table 2: Summary of Measures	45
Table 3: Mean Scores and Standard Deviations for each Measure	61
Table 4: Descriptive Summary of Male and Female Participant Scores on the Perceived Stress Scale.	62
Table 5: Number of stressful experiences reported by participants	63
Table 6: Descriptive Summary of Male and Female Participant Scores on the General Health Questionnaire	65
Table 7: Descriptive Summary of Male and Female Participant Scores on the Edinburgh Postnatal Depression Scale	66
Table 8: Correlation Matrix of Paired Couples Scores on the GHQ and EPDS	68
Table 9: Correlation Matrix of stress, psychological distress and depression measures treating the sample as one group.	69
Table 10: Correlation Matrix of stress, psychological distress and depression measures treating the men and women as independent groups.	70
Table 11: Mean Scores and Standard Deviations on the Family Support Scale	71
Table 12: Correlation Matrix of social support, stress, psychological distress and depression	73
Table 13: Correlation Matrix of partner satisfaction, psychological distress and depression	74
Table 14: Gender differences on Family Support Subscales	75
Table 15: Predictor Variables for the criterion variable: GHQ-12. Multiple Regression analysis using the Enter Method	77
Table 16: Predictor Variables for the criterion variable: EPDS. Multiple Regression analysis using the Enter Method	78
Table 17: Predictor Variables for the criterion variable: GHQ-12. Multiple Regression analysis using the Stepwise Method	78
Table 18: Predictor Variables for the criterion variable: EPDS. Multiple Regression analysis using the Stepwise Method	79
Table 19: Gender differences in explained variance of criterion variables EPDS and GHQ-12 using stepwise multiple regression.	80
Table 20: Summary of Hypotheses and Corresponding Results	84

List of Figures	Page
Figure 1: Recruitment Process Flow Chart	41
Figure 2: Frequency of scores on the PSS for Male and Female Participants	62
Figure 3: Frequency of scores on the GHQ-12 for Male and Female Participants	65
Figure 4: Frequency of scores on the EPDS for Male and Female Participants	67
Figure 5: Means for FSS Sources of Support Subscales for Male and Female Participants	72

List of Appendices	Page
Appendix 1: Semi-structured Questions	121
Appendix 2: Perceived Stress Scale	122
Appendix 3: General Health Questionnaire	123
Appendix 4: Edinburgh Postnatal Depression Scale	124-125
Appendix 5: Family Support Scale	126-127
Appendix 6: Relationship Assessment Scale	128
Appendix 7: Ethical Approval Letter	129
Appendix 8: Letter of invitation, Information Leaflet and Consent Form	130-133
Appendix 9: Letter to Consultant Obstetricians	134
Appendix 10: Screening Questionnaire	135
Appendix 11: GP Letter	136
Appendix 12: Reminder letter	137

1. **INTRODUCTION**

1.1 Overview of the Current Study

The current study investigated the relationships between stress, psychological distress, depression and social support in a sample of pregnant women and their partners. The study was exploratory in nature with a particular focus upon exploring differences in the range of reported stress and distress by men and women who were expecting their first baby. A specific aim of the study was to provide new information about fathers' experiences as much of the existing literature has focused primarily upon mothers' experiences. The study represented an attempt to clarify whether stress and distress were experienced during late pregnancy. It was hoped that the findings of the current study would provide important information for the future provision of services.

This introductory chapter reviews research literature concerning mothers' transition to parenthood, focusing upon psychological reactions and postnatal illness and the influence of stress and social support during the transition. The review will then focus upon research relating to the transition to parenthood that has included fathers' experiences. Finally, the chapter will present research evidence regarding the importance of the partner relationship in parenthood research.

The first section will address the models of stress and social support that have been developed and gender differences that have been identified in the stress, psychological distress and social support literature. The chapter will end by presenting research questions and hypotheses for the current study based upon the preceding literature review.

The strategy for obtaining relevant literature on these topics consisted of accessing various search engines provided by the University of Leicester library facilities in order to locate relevant literature. Literature search engines that were utilised included the following: PsychInfo; PsychArticles; BIDS (Bath Information and Data Services); ISI Web of Science (Social Sciences Citation Index) and Ovid. Electronic Journals were also accessed including Wiley Interscience and Swetswise. Following on from these literature searches relevant articles were located or ordered via the inter-library loan facility when necessary. Further relevant literature was then obtained via references obtained from the initial literature that the researcher read.

1.2 Stress Research

Over the last forty years, a vast amount of research attention has been given to the topic of stress in humans. In particular, interest has grown regarding the possibility of stress being a cause of human distress and dysfunction (Lazarus, 1993). A wide range of experiences and responses to stress relevant to health and well-being have been studied. Notwithstanding the interest in stress as a research topic, stress has proven to be a difficult concept to define (Frankenhaeuser, 1994). Stress research has been plagued by inconsistent conceptualisations of key variables in the stress process. Despite this, several theoretical models of stress have been conceptualised based upon research studies conducted over the last forty years. Early stress research focused upon stimulus-response models of stress. These will be described briefly.

1.2.1 Stimulus Model of Stress

The stimulus model of stress conceptualised stressors as consisting of external events such as life events. Stressors were generally accepted as being events that posed a threat to personal well-being. Seyle (1956) was one of the earliest stress researchers who claimed that any life change created disequilibrium and required a period of readjustment to the life change. Many studies have been conducted based upon this theoretical model, examining the impact of a wide range of stressors including major life events e.g. loss of a loved one, catastrophic events and living in chronic environmental conditions (Sarafino, 1990). The Social Readjustment Rating Scale (Holmes & Rahe, 1967) was one of the first tools that were developed to measure the relationship between life events and stress. The systematic study of stress in humans began to flourish following the publication of this measure (Thoits, 1995). However, successive studies of stress concluded that the stimulus model of stress was inadequate because it failed to consider factors other than the external source of stress.

1.2.2 Response Model of Stress

The response model of stress focused upon the physiological and psychological reactions to stress. In particular, troubled psychological responses such as distress

and depression have been examined. Many studies have been conducted which have examined the stress response.

1.2.3 Stimulus-Response Model

The stimulus and response approaches to understanding stress were considered inadequate when examined in isolation. Consequently, researchers began to combine both stimulus and response aspects of stress in their studies. The early stimulus-response model of stress focused upon an event that occurred in the environment that provoked a stress reaction.

1.2.4 Transactional Model of Stress (Lazarus 1966; Lazarus & Folkman 1984).

The stress research undertaken by Lazarus (1966) had a strong impact upon the research literature. According to Lazarus, the stimulus-response definition of stress contained a fundamental flaw, in that the definition assumed that all people would respond in the same way to the same event. Lazarus (1966) discovered that the period of adjustment required in response to life changes left some people vulnerable to stress and its consequences, but not everyone. Through his work, Lazarus identified the importance of individual differences in stress research. This discovery led to the development of the transactional model of stress.

The transactional model of stress incorporated stimulus-response approaches to stress (the external event and the response to that event) but in addition, considered characteristics of the individual and their ability to influence and/or mediate their experience by using cognitive, emotional, social and behavioural resources (Lazarus & Folkman, 1984). The transactional model placed particular emphasis upon the interactions and adjustments that took place between the person and their environment in response to stressors. In particular, Lazarus and colleagues emphasised the important role of cognitive appraisal within the stress process. They concluded that the cognitive appraisal of events was a key factor in determining whether events were experienced as stressful.

Cognitive appraisal involved the assessment of two factors: (1) Whether a demand was appraised as threatening to a person's current feelings of well-being (2) What resources were available to meet the demand (Lazarus & Folkman, 1984). Stress was the condition that resulted when the person/environment transactions led the individual to perceive a discrepancy between the demands of a situation and the resources that a person felt were available to them, in order to meet the demands (Sarafino, 1990). The stress reaction was not due to the stressor alone, but how significant the stressor was appraised as being to the individual (Lazarus, 1993).

The transactional model of stress was considered to be superior to the stimulus-response model as it took into account individual differences regarding the perception of stress and an individual's response to stress. This explained the range of stress experienced by different people in response to the same events. Consequently, the stimulus-response model was perceived as an inadequate explanation of the stress process. The importance of conducting research based upon the transactional model of stress was emphasised and the study of the relationship between external demands and individual predispositions and psychosocial resources was recommended.

1.3 The Impact of Stress upon Psychological Well-being: Life Event Studies

Many studies have examined the possibility of stress being a cause of human distress and dysfunction (Lazarus, 1993). Despite the reported superiority of the transactional model of stress, most research continues to be conducted within a stimulus-response model of stress. Stimulus-response models of stress have been used to examine the relationship between life changes and adjustments and levels of psychological well-being. Much of the early research has examined the relationship between stress and mental health based upon the study of life events (Kessler, McLeod & Wethington, 1985). Life events or life transitions consisted of major events that marked the passing from one phase to another, and resulted in substantial changes and new demands in people's lives (Cameron, Wells & Hobfoll, 1996). The necessary changes and adjustments required to incorporate the life event can be perceived as stressful. Stressful life event research has been approached in several ways including the examination of the psychological effects of particular events, the psychological effects of multiple events as measured by life event scales, and the comparison of

Introduction

clinical and non-clinical populations in an attempt to identify events that may act as precipitating factors to psychiatric illness (Thoits, 1983). Each of the three approaches to the study of life events has methodological weaknesses, but despite this, consistent findings have been published based upon a wide range of stressful life events that have been studied, which have concluded that, for some people, life changes have been found to have negative consequences upon both psychological and physical well-being (Sarason, Sarason, Potter, & Antoni, 1985).

Holmes and Rahe (1967) suggested that any change regardless of whether it was positive or negative was stressful as change events required adaptational demands. However, research findings have also demonstrated that life events that were perceived as negative or threatening and highly disruptive were likely to result in more psychological distress than life events that were perceived as positive (Brown & Harris, 1978; Cohen & Williamson, 1991; Thoits, 1995). This resulted in a fairly consistent conclusion that negative events played a much greater role in illness than positive events (Lazarus, 1999).

Although researchers have documented a positive relationship between stressful life events and psychological distress for some people (Thoits, 1982) according to Thoits (1983), the relationship was small with only approximately 9-16 % of the variance in psychological distress being explained by life events. This finding may have occurred due to methodological weaknesses or uncertainty regarding the specific types of events which generated disturbance or which coping resources were effective in reducing distress. Accordingly, a coherent, concrete explanation for reported psychological distress in response to stressful life events remained ambiguous.

These studies have provided clear evidence that the *majority* of people, who experienced events that were perceived as stressful, did not develop psychological disorders, but varying degrees of psychological distress have been documented (Kessler et al. 1985). These findings highlighted the importance of considering individual differences as highlighted by the development of the transactional model of stress (Lazarus & Folkman, 1984).

Introduction

Consequently, the focus of stress research has shifted towards the transactional model of stress (Lazarus & Folkman, 1984). Lazarus and colleagues argued that for psychological distress to occur, there needed to be an interaction between a precipitating event and vulnerability/resistance factors. Stress researchers now focused upon the identification of resistance/vulnerability factors that could explain the variance in psychological distress in response to stressful events/transitions. Two sets of vulnerability/resistance factors have been identified in the literature: individual predispositions and psychosocial resources. These factors determined whether an individual would be more or less reactive to a precipitating event.

According to Lazarus (1993), the cognitive appraisals of demands were influenced by both individual and situational factors. A number of personality and social variables have been identified that may modify the stress associated with major life changes. Individual variables that have been studied in the stress literature have included personality characteristics e.g. hardiness (Kobasa, Maddi & Kahn, 1982), Type A Personalities (Kobasa, Maddi & Zola, 1983), and coping styles (Hobfoll, Cameron, Chapman & Gallagher, 1996).

For the current study, it was considered too cumbersome to attempt to measure all potential variables that may influence the stress process. Consequently, whilst it was acknowledged that individual factors were important, the current study did not directly assess characteristics of the individual such as hardiness or coping style. As these personality variables were not the focus of the current study, research studies that have examined personality characteristics in relation to the stress process have not been included here.

1.4 Social Support Research

As previously stated, it was beyond the scope of the current study to assess all potential variables that may influence the positive association between stressful experiences and the presence/increase of symptoms of psychological distress. Therefore, the role that enduring personality traits have as vulnerability/resistance factors has not been directly examined. Instead, like many researchers, the current

study focused upon psychosocial resources as vulnerability/resistance factors to the negative consequences of stress (Kessler et al. 1985).

Social support has generated considerable research interest and has become the most frequently studied psychosocial resource (Gallagher, Hobfoll, Ritter & Lavin, 1997). The volume of research examining social support continues to be very large. However, it was sometimes difficult to make sense of the literature because not unlike findings in stress research, research examining social support has been plagued by inconsistent conceptualisations and measurement of key variables, which has resulted in contradictory findings.

Many researchers have viewed social support as a multi-dimensional concept (Cobb, 1976; Cohen & Wills, 1985). There was general agreement that social support dimensions included: quantity of support, quality of support, type of support, source of support and satisfaction with support. All of the dimensions of social support were considered to be important, however there was some evidence that not all sources and types of social support were equally effective at reducing psychological distress (Leavy, 1983).

Despite inconsistent conceptualisations of social support, two theoretical models of social support have been developed within the social support literature, which identify social support as a coping resource that can act as a vulnerability factor or resistance factor in relation to psychological well-being. The models propose that social support (or lack of) can affect psychological well-being in two different ways. The models are called the buffering model of social support and the direct effects model of social support. Evidence has been documented in studies of psychological distress that supports both of these hypotheses (Cohen & Syme, 1985). It is possible that support can influence mental health both directly and as a buffer against stress (Thoits, 1995).

1.4.1 Buffering Model of Social Support

Social support has been conceptualised as influencing a person's vulnerability to stress. It has been considered to be something that can modify the impact of stress

upon mental health and has been identified as one of the most significant factors in the stress process (Gallagher et al. 1997).

Early groundbreaking work on stress and social support conducted in the 1970's (Cassell, 1976; Cobb, 1976), posited that perceived social support 'buffered' the impact of stress upon psychological well-being. Conversely, a lack of social support was considered to be a vulnerability factor for psychological difficulties during times of stress. Positive associations between social support and psychological well-being have been documented within a stress framework (Cohen & Wills, 1985).

The buffering model of social support implied that social support was only effective in the presence of stressful life events. According to this model, when stressful life events were not present, social support had no impact upon psychological well-being. Research findings from some of the methodologically strongest studies support the buffering model (Kessler & McLeod, 1984), however, some researchers have suggested that the traditional stress-buffering hypothesis of social support may have outlived its usefulness (Hobfoll & Vaux, 1993).

Many of the studies that have examined the role of social support have focused upon the impact of stress upon psychological well-being during life transitions and the role that social support played in this process. Within the process of adapting to life changes, psychological well-being may be affected, dependent upon how effective coping strategies are in response to the life changes and any stress that may be experienced (Terry, 1991a). The majority of studies that have examined the impact of social support upon life events have found support to be an important predictor of subsequent psychological well-being (Kessler et al. 1985; Thoits, 1982). According to the buffering model, social support is thought to work by modifying the impact of stress upon an individual, producing a reduction in peoples' levels of stress and protecting their psychological and physical health (Sarafino, 1990). In addition, the buffering model of social support argues that low levels of social support combined with a significant stressful life event (usually negative) was likely to result in an increase in symptoms of psychological distress.

1.4.2 Direct Effects Model of Social Support

The direct effects model posits that social support benefits psychological well-being regardless of whether stress is experienced or how much stress is experienced. The direct effects model stated that a person's resources were continually being enhanced by participation in a social network that provided a sense of self-worth and belonging, and the provision of support. Early studies have found direct relationships between social support and psychological well-being irrespective of whether stress was present or not (Berkman & Syme, 1979; Ganster & Victor, 1988; Roy, 1978). Some studies that have examined the relationship between social support, life events and psychological state have found that social support does not moderate the impact of life events but does have a direct main effect upon well-being (Thoits, 1982). In studies of normal populations, compelling evidence has been documented that social support was significantly related to well-being and the absence of psychological distress (Kessler & McLeod, 1985; Leavy, 1983). Studies that have compared clinical and non-clinical populations have provided consistent findings that non-clinical samples have more social support available to them than samples of people with psychological disorders (Leavy, 1983). The direct effects model implied that the benefits of social support were similar under high and low stress circumstances.

1.4.3 Dimensions of Social Support

Social support refers to the caring, comfort and esteem that individuals can obtain from their social ties and relationships with other people (Sarafino, 1990). Social support can be obtained from many different sources including family and friends as well as professional organisations. Social support is defined as the belief that one is valued, loved and cared for, and a member of a network of mutual obligation and communication (Cobb, 1976). A number of dimensions of social support have been identified as important predictors of psychological well-being. The dimensions have included: access to and size of a social network, perceived availability of social support, quality of social support and satisfaction with social support (Billings & Moos, 1982; Hobfoll & Vaux, 1993; Leavy, 1983; Mueller, 1980). Early researchers focused upon the size of social support networks, concluding that access to larger social networks facilitated greater health (Cobb, 1976; Nuckolls, Cassel & Kaplan,

Introduction

1972; Thoits, 1982; Wethington, McLeod & Kessler, 1987). Studies have demonstrated that people with partners, friends and family who provided psychological and material resources have been found to be in better health than those with few supportive relationships (Billings & Moos, 1981; Brown & Harris, 1978). Studies that have focused upon social networks have also identified links with psychiatric disturbance. The social networks of psychiatric patients has been found to be smaller than non-psychiatric patients suggesting that the size of a persons social network is an important resistance factor to the development of psychological difficulties (Mueller, 1980).

Later research focused upon the type, availability, quality of social support and satisfaction with the social support that was available. The perceived quality of social support has been documented as being more important than the amount of social support (Leavy, 1983). The type of support available also seemed to be central to psychological well-being. Emotional support in particular, has repeatedly been cited as related to psychological well-being (Leavy, 1983). Satisfaction with support has also been found to be a more powerful predictor of depressive symptoms than the size of the supportive network (Leavy, 1983).

1.5 Gender Differences in Psychological Distress

One of the aims of the current study was to document psychological symptoms of distress in a group of pregnant women and their partners in order to compare levels of psychological distress during pregnancy in both genders. Consequently, it was important to include a review of general studies that have examined gender differences regarding psychological disorders.

Consistent evidence has been documented that has reported gender differences in psychological distress. Lower rates of mood disturbance in men have been reported frequently in the literature. Researchers have identified women as being at higher risk of developing depression. Clinical depression has generally been found to be more prevalent in females than males (American Psychiatric Association, 1994). There is also a lot of evidence to suggest that males and females express and cope with depression in different ways (McDaniel & Richards, 1990). According to Wilhelm

and Parker (1994) women are more likely than men to report depressive symptoms. Adult women are also twice as likely as men to report extreme levels of psychological distress (Kessler & McRae, 1981)

Some research has been undertaken to try to identify possible explanations for the documented gender differences in the psychological distress literature. Possible explanations have included the under-reporting of symptoms in men, poorer recall of symptoms in men and the expression of symptoms in a different way e.g. drinking alcohol. However, the explanation for the documented gender differences is far from clarified.

1.6 Gender Differences in Stress and Social Support

Another aim of the current study was to compare reported levels of stress and access to social support in men and women. Therefore it was considered important to include a review of general studies that have identified gender differences regarding stress and social support. Studies in the stress literature have examined both genders on a variety of individual and situational variables that may mediate the impact of stress and reached several conclusions regarding men and women's appraisal of stress, responses to stress and coping mechanisms. Research examining social support as a moderator of stress has expanded over the years, however systematic examination of gender differences in this area has been limited. Women appear to be over represented in studies of social support whilst men seem to be over represented in studies of stress (Belle, 1987).

Studies within the stress, social support and health literature have identified gender differences regarding levels of psychological distress experienced under stressful conditions. Some studies have examined gender differences in response to life events. These studies have focused upon accumulative life event scores rather than a specific life event. The results of these studies have indicated that women appear to be more vulnerable than men to the effects of stressful life events (Bebbington, Hurry, Tennant, Sturt & Wing, 1981; Dohrenwend & Dohrenwend, 1974; Kessler et al. 1985; Wethington et al. 1987). This greater risk may parallel findings in the general population that women are approximately two thirds more likely to be depressed than

men (Kessler et al. 1994). Women have been found to be at greater risk of developing depression following a stressful life event than men (Nazroo, Edwards & Brown, 1997). However, in many studies that have been conducted, it remains unclear why women appear to be more vulnerable to the effects of stress.

Research on the role of social support and its impact upon psychological well-being within a stress framework has characterised support needs, support seeking and utilisation of support as different for men and women (Cohen & Wills, 1985; Gottlieb and Wagner, 1991; Pearlin and McCall, 1990). Men have been reported as having larger social networks than women, but women have been reported as utilising their support networks more effectively (Belle, 1987; Sarafino, 1990) and have reported the support as being more helpful (Flaherty & Richman, 1989). A general finding has indicated that when social support was present it seemed to protect women in particular from the effects of stress (Frankenheuser, 1994).

Women's' psychological health has also been more closely linked to marital satisfaction and partner support than men's' psychological health. Important aspects of relationships e.g. intimacy, commitment, and satisfaction have been found to influence supportive interactions (Dunkel-Schetter, Sagrestono, Feldman & Killingsworth, 1996). The presence of an intimate confiding partner relationship has been identified in studies of women experiencing life stress as a resistance factor to the development of depression (Acitelli & Antonucci, 1994; Brown & Harris, 1978).

As a result of these findings, some studies have tried to understand the reasons for these reported gender differences. Arguments have included differing personality characteristics (Radloff & Munroe, 1978), different coping styles (Hobfoll et al. 1996) and gender role differences (Nazroo et al. 1997).

1.7 The Transition to Parenthood

The next section examines research literature relating to the transition to parenthood for men and women.

Introduction

One of the earliest studies that examined the effects of the addition of a child to a family suggested that the baby's arrival represented a 'crisis' (LeMasters, 1957). LeMasters (1957) study and similar studies conducted in the 1950's and 1960's were limited primarily due to the size and composition of the samples. Subsequent research has generally failed to find support for the experience as a 'crisis'. Over the years, researchers who have conducted parenthood studies have generally agreed that becoming a parent, whilst generally viewed as a positive event, is considered to be one of the most significant life change events that people will experience, requiring many adjustments and adaptations (Lobel, 1998). Becoming a parent can temporarily upset the structure of the family system, requiring the reorganisation of roles and tasks to accommodate the baby (Battles, 1988). These may include many life adjustments including changing roles and relationships at home, work, with family members, adjusting from being a couple to being a family, preparation for childcare tasks and responsibility for the baby's well-being, and increasing demands upon time, finances and resources (Cameron et al. 1996).

Whilst it is acknowledged that becoming a parent can result in changing roles and relationships for both men and women, it is also important to recognise that for women, there are some unique aspects to becoming a parent, that men do not experience. Whilst some men have been reported to experience couvades syndrome, where they also experience symptoms associated with pregnancy and labour, men do not undergo the physical changes that are associated with having a baby. Physical changes are most evident for women. Women undergo a changing body shape and gain weight. Their body image and concept of themselves may undergo a transformation as a result of their changing body shape. They may also experience nausea associated with the pregnancy, discomfort, backache, constipation, piles, varicose veins and fatigue (Tucker, 1992). Added to this are the risks associated with high blood pressure, pre-eclampsia and anaemia leading up to the birth of the baby. Women also experience the physical aspects of labour and delivery and physical recovery post-birth. Whilst it is acknowledged that the physical aspects of becoming a parent are unique to women, the physical changes associated with becoming a parent were not the focus of the current study.

Introduction

Although past research has concluded that life events that were perceived as positive were less likely to lead to psychological distress and illness, the changing roles, demands and expectations that occur during the transition to parenthood have frequently been described as stressful (Cronenwett & Kunst-Wilson 1981; Wandersman, Wandersman & Kahn, 1980). There is considerable support to suggest that new parenthood could be a potentially stressful experience. Consequently, it has generally been accepted among investigators that becoming a parent were an acute social event that could act as a major stressor (Cronenwett & Kunst-Wilson, 1981). As a result, becoming a parent was a specific life transition that has been examined in the literature within a stress framework. Acknowledging individual differences and resources that were perceived to be available, not everyone would perceive the transition as stressful (Lazarus, 1999). The amount of stress experienced was likely to vary considerably among expectant parents, but research suggested that first time pregnancy was at least somewhat stressful due to the unfamiliarity of the event (Brown, 1986).

1.7.1 The Transition to Motherhood

There has been a wealth of research looking at the process of adjustment for women during this time. Research has identified that becoming a mother is a complex psychological process requiring detachment from certain activities and changes in relationships (Battles, 1988). Research has also identified a number of women who experience mental health difficulties during this period (Brockington, 1996).

1.7.2 Postpartum Research

The transition to motherhood has frequently been associated with a reduction in personal well-being and general increase in distress due to the many reorganisations and adjustments involved (Cutrona, 1982). For the majority of mothers the stress/distress associated with the transition decreases following the birth of the child (O'Hara, Neunaber & Zekoski, 1984). However, for a minority of women the stress that accompanies parenthood can trigger mental health difficulties including postnatal depression and postnatal psychosis (Brockington, 1996). The prevalence of post-natal

illness in women ranges from 10-20% of women depending upon the research methodology used (Milgrom, Martin & Negri, 1999).

Over the last 20 years, a knowledge base has formed and developed which has focused upon the identification of predictors of postpartum illness. The etiological factors involved in postnatal illness remain complex, although most researchers agree that it is likely to be multi-determined, consisting of a combination of biological/genetic factors that interact with psychological and social factors and result in an increased vulnerability to the development of postnatal illness for some women (Brockington, 1996). Some of the most consistent findings regarding postpartum psychiatric illness have been linked with multiple factors including genetic predisposition, individual characteristics, previous psychiatric history, stress, poor social support, poor partner relationships and socio-economic status (Cutrona, 1982; Swendsen & Mazure, 2000). A substantial amount of the literature has focused upon stress and social support in particular as predictors of postpartum depression (Cutrona, 1984; Gallagher et al. 1997; Kumar & Robson, 1984; O'Hara et al. 1984; Whiffen, 1988a). Women who experience postpartum depression have frequently reported marital dissatisfaction, low levels of support and high levels of stress (O'Hara, 1986).

1.7.3 Antepartum Research

Following on from postpartum research, investigators began to acknowledge the importance of studying the entire transition period of becoming a parent. In particular, researchers were keen to explore the relationships between mood, well-being and levels of stress during pregnancy and postpartum. Over the last twenty years, there has been conflicting evidence regarding the presence of psychological distress during pregnancy. Some studies suggest that a degree of psychological distress is present for some women during pregnancy. Literature has been published that documents clinical and research evidence of emotional disequilibrium during pregnancy, which can result in anxiety, depression and mood disturbance (Morse, Buist & Durkin, 2000; Shereshefky & Yarrow, 1973). However, other studies have suggested that pregnancy is a time of good psychological adjustment (Elliott, Rugg, Watson & Brough, 1983).

Introduction

Watson, Elliott, Rugg and Brough, (1984) conducted a prospective study of 128 randomly selected pregnant women who were interviewed during the transition to parenthood. Six percent during pregnancy and 16% during postpartum were identified as having a psychiatric disorder. This was found to be associated with marital dissatisfaction and a previous history of psychiatric difficulties. O'Hara (1985) found evidence that depression during pregnancy affected a substantial number of women. O'Hara (1985) also concluded that pregnancy was more likely to be linked to distress for middle class rather than working class women.

Fergusson, Horwood and Thorpe, (1996) studied rates of depression in over 9000 women in Bristol. The Edinburgh Postnatal Depression Scale was completed at 18 and 32 weeks gestation and 8 and 32 weeks postpartum. Almost 75% of women were not depressed throughout the study. Eleven percent (N = 1110) and 13% (N = 1275) were depressed at 18 and 32 weeks gestation respectively. Fergusson and colleagues (1996) noted that rates of depression actually reduced during the postpartum assessment periods of the study (9.2 %; N = 859 and 8.4%; N = 765 respectively). This finding suggested that depression during pregnancy was as common as depression following childbirth.

Elliott et al. (1983) completed a longitudinal study where 128 women were studied throughout pregnancy and the first postnatal year. Elliott and colleagues found that the sample as a whole had relatively low levels of reported distress and psychological symptoms throughout the transition to parenthood. Similar to Fergusson et al (1996) findings, Elliott and colleagues noted improvements in psychological well-being reported one-month post birth compared to one month prior to birth. According to Elliott et al. (1983) pregnant women possessed only low levels of serious psychological symptoms whereas other studies reviewed here that have examined pregnancy and psychological change during pregnancy have found differing results. Consequently, prevalence estimates of depression during pregnancy have ranged from 3-31% depending upon the sample, measure used and time frame of the study. The prevalence rates have generally been recorded as higher during the third trimester of pregnancy.

Analogous to postpartum research, studies have been conducted to try to explain the causes of reported psychological distress and psychiatric disorder during pregnancy for some women. Factors that have been commonly reported as being related to prenatal depression are not dissimilar to the causative factors for postpartum research that have been identified. These have included: stressful life events; low levels of social support; history of emotional difficulties; and a poor quality partner relationship (Berthiaume, David, Saucier & Borgeat, 1998; Bolton, Hughes, Turton & Sedgwick, 1998; Hobfoll, Ritter, Lavin, Hulsizer & Cameron, 1995).

Not unlike the findings of postpartum research regarding psychopathology, a body of evidence has been accumulating which supports the finding that a minority of women experience psychological distress and disorder during pregnancy in addition to during the postpartum period.

1.7.4 Motherhood Research examining Stress and Social Support

One of the aims of the current study was to explore whether the sample were experiencing stress, that may be related and unrelated to pregnancy and also to examine the influence that social support exerted upon stress and psychological well-being. Therefore, it was important to include studies in this review that have included stress and social support in their examination of the transition to parenthood. Three types of study have examined social support during pregnancy. Correlational studies have examined the relationship between social support and birth outcomes and social support and psychological outcomes. Intervention studies have examined the benefits of social support programmes. Social support interventions have been provided during delivery e.g. the presence of a 'doula' who can provide support to the mother. This review will focus upon studies that have examined the influence of social support upon birth and psychological outcomes.

1.7.5 Stress, Social Support and Birth Outcomes

Nuckolls and colleagues (1972) conducted one of the first controlled prospective designs that looked at the relationship between social support during pregnancy and birth outcomes. They identified the benefits of social support upon well-being during

this time. Nuckolls et al. (1972) assessed pregnancy complications in 170 women who were classified as experiencing high, medium or low levels of stress and having access to either high or low levels of social support. The highest proportion of women who experienced pregnancy complications were those who reported high levels of stress and low levels of social support. This finding supported the buffering hypothesis of support, as women with high levels of stress and high levels of social support had no increase in complications. However, this study had several drawbacks. The women studied were partners of men in the Armed Forces. Their experiences of stress and access to social support may have been very different from women living in other contexts. The study also failed to sufficiently control for previous medical risk factors. Since this research, numerous studies have attempted to clarify the relationships between stress, support and birth and psychological outcomes.

Subsequent studies have reported that high levels of stress have been associated with poor outcomes in relation to labour and delivery complications (Lobel, 1994; Norbeck & Tilden, 1983). Stress and lack of social support have also been significantly related to 'emotional disequilibrium' and adverse birth outcomes e.g. shorter gestational period and lower birth weights (Dunkel-Schetter et al. 1996; Rini, Wadhwa, & Sandman, 1999).

1.7.6 Stress, Social Support and Psychological Outcomes

Elliott, Watson and Brough, (1985) completed a longitudinal study where they examined the stressfulness of the arrival of the first child in 128 pregnant women. Self-report measures of psychological distress were completed and the women were interviewed regularly. For the majority of women, the arrival of the child was not perceived as severely stressful. Those who did report symptoms of stress also reported psychological distress during pregnancy and depressive symptoms in the postnatal period. Norbeck and Tilden (1983) also concluded that pregnancy was not experienced as uniformly stressful among women.

However, other studies that have conducted research into parenthood, have found that for a small proportion of women who have a baby, who reported high levels of perceived stress (whether related or unrelated to pregnancy) were more vulnerable to

Introduction

symptoms of psychological distress and possible psychological disorder. Several studies have been undertaken that examined the association between high levels of stress and postpartum depression (Arieas, Kumar, Barros & Figueirido, 1996; O'Hara, 1986; Paykel, Emms & Fletcher, 1980). Negative stressful life events predicted postpartum depression in these studies. High stress and low support was also significantly related to high emotional disequilibrium. Unfortunately, only Arieas et al. (1996) study was prospective, with the others being retrospective studies.

Findings of studies examining motherhood have identified that whilst stress can lead to depression during this period, social support has proved to be an effective resistance factor to the effects of stress. Social support has been related to lower stress, anxiety and depression levels during pregnancy (Kalil, Gruber, Conley & Syntiac, 1993; Norbeck & Tilden, 1983; O'Hara, 1986;). These findings are consistent with findings in the general stress and social support literature and provide support for the buffering model of social support. Consistent findings have also shown that social support facilitates greater psychological well-being during pregnancy for women regardless of levels of stress, providing evidence for the direct effects model of social support (Dunkel-Schetter et al. 1996).

Collins, Dunkel-Schetter, Lobel and Scrimshaw, (1993) completed a prospective study that examined the influence of prenatal support upon maternal and infant health and well-being in 129 low-income pregnant women. Dimensions of support that were examined included the amount of support received and the quality of support. Collins and his colleagues (1993) concluded that women with higher quality support experienced less antepartum and postpartum depression and conversely women who were dissatisfied with support were at greater risk of depressed mood during pregnancy and postpartum. The overall findings of this study were consistent with the direct effects model of social support.

Brugha and colleagues (1998) conducted a prospective study of a community sample. Women were interviewed during pregnancy about the quality of social support and the size of their social network. The General Health Questionnaire was then completed at three months postpartum. Predictors of postpartum depressive symptomatology that were identified included dissatisfaction with social support.

Network size did not predict depression postpartum. Source, quantity and quality dimensions of support are also thought to have distinct effects upon psychological outcomes during pregnancy (Dunkel-Schetter et al. 1996).

Berthiaume et al. (1998) interviewed 350 French Canadian women during the second trimester of pregnancy. A variety of measures were completed including the Beck Depression Inventory. This measure identified 26 women (7.43%) with a moderate to severe level of depression. A number of psychosocial variables accounted for a considerable proportion of the variance in prepartum depressive symptoms (44%). Predictors that were associated with lower levels of prepartum depression included: unemployment, low self-esteem, poor satisfaction with social support, previous history of emotional difficulties, and the intensity and impact of stressful experiences. It is not possible to imply causal relationships between the predictors and prepartum depression in this study due to the cross-sectional design. Berthiaume and his colleagues (1998) also acknowledged that the specific cultural background of the sample might have influenced their reported experiences.

1.8 Inclusion of Fathers

In recent years, the arena for research into parenthood has expanded from focusing solely upon motherhood, to the inclusion of fatherhood. Researchers have begun to acknowledge the dynamic nature of families and recognise that “mothers” do not exist in a vacuum. Over the last 50 years there has been a huge cultural shift regarding gender roles within families. Societal changes, cultural changes, economic changes and the women’s movement have resulted in increasing numbers of “working” women and subsequent gender role shifts. The distribution of parenting and household responsibilities has shifted from distinct roles for men and women to shared and overlapping roles and responsibilities. Fathers are now much more expected to be involved in the “hands on” experience of parenting (Brockington, 1996). Recognising this, researchers have begun to include fathers in their studies.

The literature that examines the process of adjustment for men during this transitional period is much smaller, although it is expanding. Not a great deal is known about fathers’ experiences during the transition to fatherhood. Only a small number of

studies have included fathers' thoughts and feelings about pregnancy and fatherhood, or fathers' influence upon mothers' reactions during this transition. Studies that have examined fathers' experiences have often focused upon fathers' responses following the birth of the child. Only a small number of prospective studies have been completed that include fathers in their sample. Indications from the studies have suggested that some men experience considerable stress during the transition to parenthood and psychiatric morbidity has been found in partners of women who develop postnatal illness.

1.8.1 Co-morbidity of Depression in Mothers and Fathers

Early studies completed in the 1960's provided evidence of case studies, which documented men who experienced similar physical symptoms to their partners during and immediately after pregnancy. The symptoms became known as "sympathetic symptoms of pregnancy" and were labelled as "couvades" syndrome (Trethowan & Conlon, 1965). The "couvades" case examples were limited as they focused upon severe reactions only, were often atypical patients making generalisation impossible, and focused exclusively upon physical symptoms with no reference or study of any psychological symptoms. Since these early case studies researchers began to question the degree of psychological distress that may be present in partners of women with postpartum illness.

Significant associations have been found between depression in mothers and depression in fathers (Ballard, Davis, Cullen, Mohan & Dean, 1994; Dudley, Roy, Kelk & Bernard, 2001). New fathers whose partners are depressed may experience similar disorders as high rates of depression were found in men whose spouses were admitted to a mother and baby unit for treatment for postnatal depression (Harvey & McGrath, 1988; Lovestone & Kumar, 1993).

1.8.2 Postpartum Research including Fathers

As a result of the body of evidence that identified co-morbidity of symptoms in partners of women with postnatal illness, researchers began to include fathers in their research as a matter of routine.

Introduction

Areias et al. (1996) completed one of the few studies that have attempted to identify predictor variables of postnatal illness in couples. Fifty-four first time mothers and forty-two partners were interviewed at two time points: 6 months pregnant and 12 months after birth. The Edinburgh Postnatal Depression Scale was also completed. Marked gender differences in clinically significant depressive illness was reported. Lower prevalence rates of depression were found during pregnancy and postpartum for fathers. For women, the prevalence rate of depression during pregnancy was 16.7% (9) and 31.5% postpartum (12 new onset cases and 5 continued from pregnancy). For men, the prevalence rate of depression during pregnancy and postpartum was 4.8% (2). Areias and colleagues (1996) concluded that postnatal depression in women was predicted by previous history of depression and the negative impact of events on women. For new fathers, postnatal depression was predicted by a history of depression themselves and the presence of depression in their partners, providing support for previous findings of co-morbidity of symptoms. A limitation of this study was that the conclusions were based upon very low numbers in the sample: only two fathers were clinically depressed during pregnancy and three months postpartum.

Lane et al. (1997) examined depression in a sample of 224 new mothers and 175 of their partners. The Edinburgh Postnatal Depression Scale was administered at 3 days and 6 weeks postpartum. Eleven percent of mothers and 1.2% of fathers scored above the cut-off on the depression scale at the 6 week assessment suggesting that paternal mood disturbance was rare. This finding compared with a 10% rate of depression in fathers reported by Ballard et al. (1994) and 20% reported by Raskin, Rickman and Gaines (1990). The differing prevalence rates may be partially explained by the different measures used and timing of the assessments that were applied to these studies. Lane and his colleagues (1997) also found no evidence to suggest that co-morbidity of depression within couples was present.

Dudley et al. (2001) recently completed a cross-sectional study examining depression in mothers and fathers within the first postnatal year. The sample contained a mixture of first time and experienced parents. The sample consisted of 193 couples, 99 of which were attending Parentcraft classes, 49 were attending a day care centre and 45 couples were attending early childhood centres. The measures used in the study

included the Edinburgh Postnatal Depression Scale, the General Health Questionnaire and the Beck Depression Inventory. Almost 50 % (83) of mothers and 11.8% (11) of fathers exceeded the cut off score for depression on the Edinburgh Postnatal Depression Scale. Forty-six percent (43) and 17.4% (16) of fathers exceeded the threshold for clinical significance on the General Health Questionnaire and Beck Depression Inventory respectively. A drawback of this study was that the sample were recruited and interviewed at different times during the postpartum ranging from one month to six months. Consequently, participants will have been at different stages in the transition and their reports may have been influenced by this fact.

From the limited number of studies that have been conducted, a substantial minority of fathers have been identified as experiencing psychological distress and illness following the birth of their child.

1.8.3 Pregnancy Research including Fathers

Not a great deal is known about fathers' experiences during pregnancy, however the research literature in this area is growing. Over a 12 month period, Clinton (1987) compared the physical and psychological well-being of 81 expectant fathers with 66 men who were not expecting a baby. Throughout pregnancy, fathers experienced similar patterns of physical and psychological well-being to the control sample. During the early postpartum however, expectant fathers health differed significantly from the control group, with a greater incidence, severity and duration of psychological symptoms of distress.

Condon, (1987) completed a cross sectional study in which he examined the presence and severity of psychological symptoms in 165 pregnant couples, who were at various stages of pregnancy. The women reported significantly higher symptom levels, but a substantial minority of men in the sample also reported a severe level of psychological symptoms. This study had several weaknesses. It consisted of a retrospective design, which relied upon participants to accurately recall their psychological status prior to the pregnancy. The self-report symptom rating scales that were used in the study were not well validated or standardised questionnaires that

have been used in previous research, consequently the comparability of the findings is limited.

Raskin et al. (1990) followed up 86 couples during pregnancy and following childbirth. Raskin and her colleagues did not find evidence to suggest that couples experienced comparable symptoms. They found that when a member of the couple was experiencing depressive symptoms, the other member of the couple were unlikely to be depressed as well. This finding was in contrast to studies described earlier, which found evidence for co-morbidity of psychological distress in couples. Almost 60% (51) of the sample had one member of the couple reporting depression, but only 11.1% (4) had both members reporting depression. Depression was assessed using the Centre for Epidemiologic Studies Depression Scale, which is considered inferior to the Edinburgh Postnatal Depression Scale. Raskin et al. (1990) did conclude that self reported dysphoria was as likely to occur in fathers as mothers during pregnancy and postpartum.

Matthey, Barnett, Ungerer and Waters, (2000) examined maternal and paternal depression during the transition to parenthood. One hundred and fifty seven couples were assessed once during pregnancy and three times during the first postnatal year. Antenatal mood and the partner relationship predicted postpartum adjustment for both mothers and fathers. Limitations of this study were that the same measure of depression was not used throughout the study. The Beck Depression Inventory was used in the antenatal stage of the study and the Edinburgh Postnatal Depression Scale was used for the postpartum assessment. This makes comparisons between the different stages of the transition difficult. Furthermore, the sample was highly educated thus limiting the generalisability of the findings to less educated populations.

The overall findings of the limited number of studies that have examined fathers' psychological well-being in addition to mothers during the entire transition to parenthood have suggested that psychological distress during pregnancy can be just as prevalent for some people as following the birth of a child. Gender differences have also been documented in the levels of reported psychological distress during the transition to parenthood, with men reporting fewer symptoms of psychological distress during pregnancy and postpartum than women (Cameron et al. 1996; Fawcett

& York, 1986;). Spouses have experienced psychological symptoms during pregnancy and the postpartum suggesting the possibility of co-morbidity of symptoms in women and men, although not all of the studies support this finding (Drake, Verhulst & Fawcett, 1988; Raskin et al. 1990).

The few studies that have been completed to date suggest that a minority of fathers are likely to experience similar difficulties to some mothers during the transition to parenthood. The explanation for those fathers who have been found to be experiencing psychological symptoms during the transition to parenthood remains unclear. The potential stress and distress that fathers may associate with becoming a parent is most in need of study as it is the least understood (Cronenwett & Kunst-Wilson, 1981).

1.8.4 Stress and Social Support Research including Fathers

The psychosocial variables: stress and social support, have been most commonly examined to ascertain whether they influence reported psychological distress during the transition to parenthood. Most of the parenthood research that has examined the concepts of stress and social support in relation to psychological distress has focused upon mothers. There has been little in the way of systematic investigation of fathers' experiences. The limited studies that have been conducted must be interpreted with a degree of caution. It is difficult to make generalisations across studies due to stress and social support concepts being defined differently and different measures of stress and social support being used.

Several studies have examined levels of stress during pregnancy. As mentioned previously some studies have focused upon the influence of stress upon peri-natal outcomes (Lobel, 1994; Norbeck & Tilden, 1983;). Only a small number of studies have examined stress in both men and women during the transition to parenthood. Terry (1991a) reported that women perceived becoming a parent as more stressful than men. Miller and Sollie (1980) studied 109 couples during the transition to parenthood. Both mothers and fathers reported significantly higher levels of stress following the birth of the child than during pregnancy. Mothers also reported higher levels of stress within the marriage than fathers after the baby was born resulting in a decline in the quality of the partner relationship. Atkinson and Rickel (1984) studied

Introduction

78 middle class couples. They identified that some men experienced considerable stress during the transition to fatherhood. Furthermore, up to 8 weeks post birth 13% of fathers scored 10 or more on the Beck Depression Inventory indicating at least mild depression.

Several studies have also examined the influence of social support during the transition to parenthood and the relationship between social support and stress. Wandersman et al. (1980) examined the effects of different types of social support upon adjustment to parenthood. Twenty-three first time mothers and 18 first time fathers who attended Parenting Groups were compared with a control group of 23 mothers and 24 fathers at two time points during the postpartum. The results suggested gender differences in the types of support that were important to mothers and fathers. Parenting group support and emotional support from partners were related to psychological well-being for fathers. For mothers, emotional support from their partner and network support were related to psychological well-being. Caution is required when considering these findings due to the small numbers of participants.

Brown (1986) examined the influence of social support and stress upon health in 313 expectant couples. The measures used were the Support Behaviours Inventory, (examining satisfaction with partner support and support from others), the Health Responses Scale (which focused upon physical symptoms and emotional feelings), and the Stress Amount Checklist (which measured stressful experiences commonly associated with pregnancy). The author developed all these measures. Regression analyses were conducted based upon the measures that were used in the study. Stress, satisfaction with partner support, and family income significantly accounted for 17% of the variance in men's health. For women, stress, satisfaction with partner support and history of chronic illness accounted for 30% of the variance. Brown (1986) concluded that stress was a consistently important explanatory variable for health in couples, particularly mothers, but granted that a large proportion of the variance remained unexplained. A study that examines these variables and uses well-validated, standardised measures may explain more of the variance in the findings.

Richman, Raskin and Gaines (1991) studied 95 predominantly middle class couples 6 weeks before birth and 86 of those couples at 8 weeks postpartum. They found that

women displayed higher levels of depressive symptoms during pregnancy than men, however there was no gender difference at the postpartum assessment. Depression was measured using the Centre for Epidemiologic Studies Depression Scale. Women's reported distress decreased at postpartum whereas men's distress slightly increased. Women's equivalent levels of distress were partially attributed to their access to a variety of social supports whereas men in the study depended primarily upon their partner for support.

Morse et al. (2000) conducted a longitudinal, repeated measures study where they interviewed 251 Australian couples twice during pregnancy and twice in the postpartum period. Twenty percent of women and 12% of men were significantly distressed during pregnancy (as measured by the Edinburgh Postnatal Depression Scale) and for women this was maintained in the early postpartum period. Predictors of distress during pregnancy included low social support and a poor partner relationship. Vulnerable women seemed to report gradual increases in distress during pregnancy and following birth. Vulnerable men who reported distress during pregnancy seemed to resolve this over time so that only a very small proportion of men continued to feel distressed during the transition.

1.8.5 Importance of Partner Relationships

In one of the earliest studies that examined the partner relationship, Dyer (1976) concluded that couples who were satisfied with their relationship experienced less crisis/stress when their child was born than couples that expressed dissatisfaction with their partner relationship. Subsequent research has concluded that marital satisfaction has been consistently identified as having a strong relationship with perinatal adaptation (Lederman, 1984). Several studies have identified marital dissatisfaction during pregnancy as a predictor of postnatal illness (Kumar & Robson, 1984; O'Hara et al. 1984; Whiffen, 1988a).

A particular dimension of social support that has frequently been emphasised as the primary source of support in parenthood research is partner support (Cameron et al. 1996). A partner can often offer emotional, informational and instrumental support very quickly therefore they may be the most important source of support for women

during the transition to parenthood. The evidence regarding the importance of partner support for women during pregnancy and postpartum is compelling (Terry, 1991b). The presence of partner support has been found to limit both antepartum and postpartum depression (Cutrona, 1983; Gallagher et al. 1997; O'Hara, 1985). Paykel et al. (1980) assessed 120 women during the postpartum period and concluded that someone to confide in correlated with reduced depressive symptoms for women who had been exposed to an undesirable event. Paykel and colleagues (1980) also reported that the occurrence of recent stressful events was most strongly associated with depression.

Partner support has also been strongly related to lower levels of stress and anxiety even when other sources of support are available. A considerable number of studies have demonstrated that support from partners plays a particularly important role in reducing stress, anxiety and depression during pregnancy compared to other sources of support (Dunkel-Schetter et al. 1996). O'Hara (1985) examined marital satisfaction and depressive symptomatology in 51 couples during the second and third trimester of pregnancy and 6 weeks postpartum. Men reported lower levels of depressive symptoms at each assessment point. Symptoms of mild depression (as measured by the Beck Depression Inventory) were reported in 13.7% of men and 29.4% of women in the second trimester of pregnancy, 10.4% of men and 14.9% of women during the third trimester and 7.8% of men and 18% of women in the postpartum period. The severity of symptom reporting decreased across the transition for both mothers and fathers and a similar pattern of depressive symptomatology for both genders was documented throughout the transition period. O'Hara (1985) found that satisfaction with partner relationship and perceived support from partner was related to reported symptoms of depression for women.

Again, not a great deal is known about fathers, partner support and marital satisfaction during the transition to parenthood. Fathers are culturally expected to "support" their partners during the transition to parenthood. Kalil et al. (1993) conducted a prospective study of 546 pregnant women and found evidence of lower anxiety levels during pregnancy in women who perceived their partners as supportive. It has also been documented that men seek the majority of their emotional support from their partners (Cronenwett & Kunst-Wilson, 1981; Dudley et al. 2001). Brown (1986) found that

partner support was the best predictor of health for men whilst partner support and network support were the best predictors of health for women. During the transition to parenthood, the mother may be "unavailable" to provide emotional support to her partner. Consequently, fathers' satisfaction with their partner relationship may be affected. It is important to conduct further research that documents fathers' experiences as well as mothers to ensure that the needs of both parents can be met by future service provision.

General stress and support studies have also identified the presence of an intimate, confiding relationship with someone, usually a partner as being the most powerful aspect of social support that significantly reduces the effects of stress on well-being (Cohen & Wills, 1985). This source of support has also appeared to be more important to women than men in general stress and support studies. Brown and Harris (1978) found that women who experienced stressful events and lacked a confidante were ten times more likely to be depressed than women exposed to stressful events who did have a confidante whom they could talk to.

1.9 Overview, Conclusions and Unresolved Questions

Findings from the general stress literature suggest that the majority of people exposed to stress do not develop psychological disorders as a result, although varying degrees of psychological distress have been documented. However, a minority group of people do develop significant psychological distress during times of stress. Women in particular, appear to be more vulnerable to the effects of stress than men. The explanation for this remains unconfirmed, however the presence of social support has consistently been identified as a resistance factor to the effects of stress and its consequences. Social support has also been reported as having direct effects upon psychological well-being in the absence of stress.

Gender differences in social support utilisation have been reported. Women appear to make better use of their social support resources than men and are reported as being more satisfied with the support that they receive. Partner support and satisfaction with the partner relationship has also been consistently documented as extremely important for psychological well-being, particularly for women.

Gender differences in rates of psychological distress have also been documented. Lower rates of mood disorder have consistently been documented in men, and women have been identified as being at greater risk of developing a depressive illness.

In parenthood research, there have been mixed findings regarding the presence of stress and psychological distress. During pregnancy and postpartum, there does appear to be a minority group of women who experience difficulties, however for the majority of women, the transition is a time of good psychological adjustment. Parenthood research that has included fathers has reported similar findings, with a minority group of men reporting symptoms of stress and psychological distress. Evidence of co-morbidity of symptoms within couples has been mixed. Fathers have consistently been found to report fewer symptoms than women during the transition to parenthood.

Methodological shortcomings may explain the mixed findings in parenthood research regarding stress, psychological distress and the influence of social support. Stress and social support concepts have been defined in different ways, and a range of different measures have been used to examine these concepts and the concept of psychological distress. Furthermore, assessments have been conducted at inconsistent time points during the transition. Also some studies have focused upon the postpartum period only, or have only included mothers in their sample. In addition, different samples in terms of parity, race, and socio-economic position have been examined. All of these factors make comparison across studies difficult.

Although studies have concluded that only a minority of mothers and fathers are vulnerable to the development of psychological distress during the transition to parenthood, the incidence of reported psychological distress in mothers and fathers during pregnancy is still concerning, particularly given the possibility of these difficulties continuing during the postpartum. Furthermore, evidence that women who experience stress during pregnancy have significantly higher rates of adverse birth outcomes is also a concern. In addition, the consistent evidence that poor satisfaction with partner relationships during pregnancy is a predictor of postnatal illness is worthy of further research attention.

Introduction

There is still much to learn about the effects of becoming a parent. A lot of the research findings are inconclusive due to different methodologies being employed. There have also only been a limited number of studies that have included fathers, and examined the entire transition period. The majority of parenthood research completed to date has been conducted upon primarily white, middle class samples. Little is known about ethnic minority groups and working class samples.

Future studies that examine the transition to parenthood should aim to study the entire transition period, as psychological distress has been highlighted during pregnancy as well as postpartum. Research designs should aim to be longitudinal and prospective to enable the stability and change of concepts to be studied over time. It is also important to examine a variety of ethnic and socio-economic groups during this time. People with lower socio-economic status may be at higher risk to the effects of stress due to a higher frequency of chronic stressful events and less control over stressors (Thoits, 1995). Furthermore, pregnancy and the forthcoming arrival of the baby may hold different meanings for different cultures. This may also influence how support is defined, perceived, given and received.

1.10 Current Study

The current study focuses upon the normative life experience of becoming a parent. Becoming a parent has been conceptualised in different ways by researchers. Some have conceptualised it as a crisis, others as a life event, others as a developmental challenge. However becoming a parent is conceptualised, it is a life experience that has the potential to disrupt or threaten an individual's usual activities and roles resulting in substantial readjustments of existing roles and relationships (Carveth & Gottlieb, 1979). Overall, becoming a parent is perceived as a positive event which past research has concluded is less likely to result in psychological distress than events that are perceived as negative, however, the adjustments required during the transition may be perceived as threatening and disruptive which can leave people vulnerable to stress and can have negative albeit transitory effects upon psychological well-being (Cutrona, 1982; Terry, 1991b).

The current study focused in particular upon the normative experience of pregnancy. The pregnancy stage of the transition to parenthood was selected as past research has indicated that distress seems to reduce for most parents throughout the transition and that the antenatal part of the transition process appears to be the most demanding (Elliott et al. 1983; Fergusson et al. 1996). Furthermore, the majority of parenthood research has focused upon the postpartum stage of the transition; therefore it was important to conduct further research that examined parents' experiences during the antenatal stages. The third trimester of pregnancy was selected as the focus of the study as this together with the first trimester has generally been found to be more stressful than the second trimester (Tilden, 1983).

Within the process of adapting to the life changes involved with pregnancy, the current study set out to examine whether participants in the sample reported symptoms of stress, whether psychological symptoms of distress were experienced, and how effective psychosocial resources were in response to the life changes and any stress that was experienced during pregnancy. The researcher was particularly interested in examining whether there were any gender differences in reported stress, psychosocial resources and psychological distress based upon previous research

literature. The researcher was also interested in identifying whether there was any evidence to support the buffering or direct models of social support.

Within the transactional model of stress, stressors are viewed as events that are appraised as threatening to personal well-being (Lazarus & Folkman, 1984). Individual differences in cognitive mediational views will result in different appraisals of their experiences and it is the meaning construed by individuals that determines whether stress is experienced. The transactional model of stress explains the variance in the range of stress experienced in response to the same event. Based upon the transactional model of stress one would expect that pregnancy will not convey the same personal significance and meaning for each individual and that a range of stress will be reported based upon individual appraisals of circumstances and experiences.

Some individuals may perceive pregnancy as representing its own sources of stress. However, participants may also be exposed to other stressful situations during pregnancy which may contribute to reported stress levels e.g. bereavement; moving house. Unfortunately, in the current study it was not possible to break down the sample into participant's who reported pregnancy related stress and participants who reported stress that was unrelated to pregnancy. Consequently, the current study focused upon an explorative analysis of the level of perceived stress overall within the sample.

In the current study the presence or absence of symptoms of psychological distress, defined as a general state of unpleasant arousal relating to physiological and mood changes reported by individuals (Thoits, 1983) were examined using self-report measures of psychological distress and depression. All of the self-report measures that were used in the study are described in the Methodology Section 2.3.

Social support: the belief that one is valued, loved and cared for, esteemed and a member of a network of mutual obligation and communication (Cobb, 1976) refers to a number of dimensions of social relationships. Despite the differing ways in which social support has been conceptualised, the concept seems to have two fundamental elements: the number of available others and the degree of satisfaction with available support (Sarason et al. 1985). For the current study, social support was defined using

the dimensions of quantity, source, quality and satisfaction with social support. These dimensions were examined in the current study.

The primary aims of the current research were to (i) Add to the existing knowledge about mothers and fathers experiences of pregnancy. (ii) Document psychological symptoms of distress and reported stress in a group of pregnant women and their partners in order to enable the direct comparison of both genders to take place. (iii) Investigate the role of social support and partner satisfaction during pregnancy and their influence upon reported stress and distress (iv) Provide valuable information regarding future service provision for whole family units i.e. mother, baby and father.

1.10.1 Evolution of the Research

The original protocol for the current research consisted of a longitudinal design involving the assessment of mothers and fathers reported levels of stress and psychological distress during the transition to parenthood at two time points: (i) during the third trimester of pregnancy (ii) within six weeks following the birth of the child. This would have enabled any changes in reported stress and distress to be measured over time and also any changes in social support following the birth of the child. A longitudinal design would have been better placed to separate the effects of stress from those of reduced support.

Unfortunately, due to the restricted timeframe available to complete the current research and the risk of high attrition rates that can occur when employing a longitudinal design, the original protocol was reluctantly altered to a cross-sectional design obtaining data during pregnancy only. A further alteration to the current research was that originally the National Childbirth Trust (N.C.T.) was approached as the potential recruitment pool for participants. Unfortunately, following lengthy negotiations, the N.C.T. declined the research proposal. Alternative arrangements for recruitment were subsequently negotiated. Antenatal clinics at the Leicester Hospitals were considered however, following discussion with representatives of the hospitals, it was concluded that research conducted in the antenatal clinics was over saturated. The hospital-based Parentcraft groups were subsequently approached and agreement was reached to recruit from these groups. Parentcraft groups have not been utilised for

Introduction

research purposes a great deal, therefore the group facilitators were willing to support the project. Also, by approaching Parentcraft Groups the likelihood of the sample being biased was reduced. If couples had been recruited from the N.C.T. it would have been highly likely that the sample would have been predominantly middle class white parents.

1.10.2 Research Questions and Hypotheses

The research questions and hypotheses were derived from the preceding literature and all relate to couples expecting their first baby.

Research Questions

1. How much perceived stress and psychological distress is evident from reports of the participants? Are there any gender differences in the level of stress and distress that is reported? Is there any evidence of co-morbidity of psychological distress in couples?
2. Are perceived levels of stress related to reported symptoms of psychological distress? Are there any gender differences in the strength of this relationship?
3. Is the quality of social support and satisfaction with social support related to perceived stress and reported symptoms of psychological distress? Are there any gender differences in the strength of this relationship? Are there any gender differences in the size of the social support network, quality of social support and satisfaction with social support? Is there any evidence to support the buffering or direct effects models of social support? Is partner support the most important source of support?
4. Do perceived stress, satisfaction with social support and satisfaction with partner relationships predict psychological outcomes during pregnancy?

Specific Hypotheses

1. Women will report higher levels of perceived stress than men during pregnancy.
2. (a) Women will report more symptoms of psychological distress and depression than men during pregnancy. (b) There will be evidence of co-morbidity of symptoms of psychological distress and depression in couples.
3. (a) There will be a positive linear relationship between stress and psychological distress/depression. (b) This relationship will be stronger in female participants.
4. (a) There will be a negative relationship between reported social support scores (quality of support and satisfaction with support) and reported stress and psychological distress scores. (b) This relationship will be stronger in female participants. (c) There will also be a negative relationship between levels of satisfaction with the partner relationship and psychological distress and depression scores. (d) There will be significant gender differences in the size of social support network, quality of social support and satisfaction with social support.
5. Perceived stress, satisfaction with social support, and satisfaction with partner relationships will account for the variation in individual's reported symptoms of psychological distress and depression. Of these, satisfaction with social support will account for the largest proportion of the variance.

2. METHODOLOGY

2.1 Design

The current investigation utilised a cross-sectional mixed design, providing a snapshot of information at one point in time. The information obtained related to respondents reported levels of stress, psychological symptoms of distress and depression, social support and partner relationships in a sample of pregnant women and their partners during the third trimester of pregnancy. The design of the study enabled a direct comparison of both genders to take place. The project sought to obtain information relating to levels of perceived stress and psychological distress and their inter-relationships within the sample. In addition, the relationships between social support, partner satisfaction, reported stress and psychological distress during pregnancy were investigated.

The information obtained in the study was examined at a number of different levels. Between groups comparisons were conducted to examine any gender differences in key variables. Relationships between variables were also examined using bi-variate correlational analyses. Finally, the relative predictive powers of stress and social support upon psychological distress and depression were examined using regression analysis.

2.2 Participants

The participants were pregnant women and their partners, who were expecting their first child. First pregnancy represents a major life change for couples. First time parents were selected as the psychological impact of the required adjustments were predicted to be greater than for experienced parents who have already adjusted from being a couple to a family. Experienced parents were likely to experience less strain, as they were already familiar with the event. The main criteria for inclusion in the study were that participants were nulliparous i.e. expecting their first child, co-habiting for a minimum of six months, English speaking and over eighteen years of age. Additional exclusion criteria included assisted pregnancies e.g. In Vitro Fertilisation (I.V.F.), and high risk pregnancies e.g. serious health risks for the unborn child or expectant mother. Couples whose pregnancy were assisted or carried high risks were thought to be likely to have their own specific stressors and concerns

Methodology

associated with pregnancy. These were likely to differ substantially from the stressors and concerns that may develop within natural conception and low risk pregnancies.

A set of semi-structured questions were designed and piloted by the investigator (Appendix 1). In order to maximise the potential recruitment pool within a restricted time frame, certain factors that could potentially be considered to be confounding factors in the study were not classified as exclusion criteria. Instead possible confounding factors were noted and considered within the analysis. Participants who reported a previous history of miscarriage were not excluded from the study. This decision was taken as approximately 20 % of all known pregnancies result in miscarriages (Gannon, 1994). Excluding these people from the study, would have limited the potential recruitment pool considerably. Additional, potential confounding factors included pre-existing psychological difficulties that required GP or psychiatric management and medication.

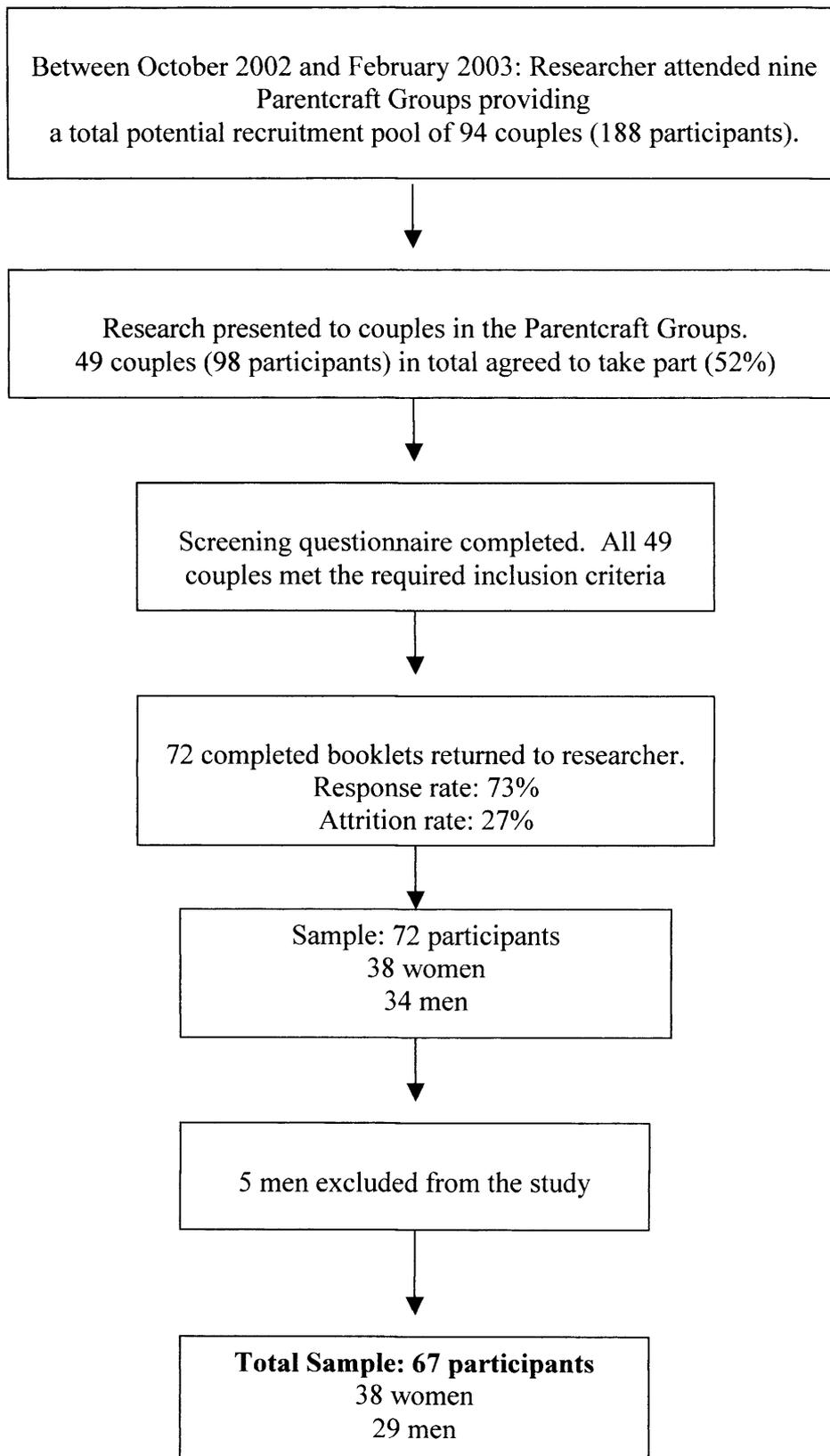
A considerable amount of research has been conducted within antenatal services in Leicester. The Clinical Director of Women's and Perinatal Health at University Hospitals Leicester raised concerns that research recruitment within antenatal services was becoming over saturated. Therefore, the researcher agreed that any couples that were already taking part in another research study within the Leicester hospitals would be excluded from the current study.

Recruitment of the sample combined non-random purposive and opportunistic sampling techniques. The researcher sought to recruit participants with particular characteristics i.e. first time parents, including fathers. Consequently, the final sample consisted of people who attended Parentcraft groups held during the evening i.e. all pregnant couples did not have an equal chance of being approached to take part in the study. Participants were recruited during the third trimester of pregnancy (24-40 weeks gestation), from Parentcraft Groups held at the Leicester General Hospital between October 2002 and February 2003. Parentcraft Groups were chosen instead of Antenatal Hospital Clinics due to the concerns over the population pool within Antenatal Clinics being over used. Hospital based Parentcraft Groups were also preferable as they provided easier access to the recruitment pool than community based Parentcraft Groups. The density and spread of community based Parentcraft

Methodology

Groups in Leicester would have required a substantial amount of time and travelling for the researcher during the recruitment stage which was both impractical due to time restraints and expensive. Figure 1 provides a flow chart of recruitment, attrition rates and exclusions from the study.

Figure 1. Recruitment Process Flow Chart



Methodology

On average, 53 % of couples were recruited from each Parentcraft group that the researcher attended. There was however, a great range in participation rates: 25% of couples in one group and up to 83% in another group. Unfortunately, very little information was available about couples that chose not to participate in the study. One couple changed their minds when they were informed that their GP would be notified about their participation in the study. No information was available about the remaining non-participants. Consequently, it is not known whether there were any differences between participants and non-participants.

Of those approached through the Parentcraft Groups, a total of forty-nine couples (ninety-eight participants) agreed to take part in the study. The participants met all the inclusion criteria for the study. None of the participants were taking part in other research studies at University Hospitals Leicester. Seventy-two completed booklets were returned. Five men were excluded from the study as they reported that they already had children with a previous partner. The total sample was 67 participants: 38 women and 29 men. The slightly larger number of women in the final sample was due to two factors. Five men were excluded (as mentioned previously) and more men dropped out of the study than women; 15 men compared to 11 women. Table 1 provides demographic information about the sample. Table 1 provides demographic information regarding the study sample.

Table 1.
Demographic Characteristics of the Sample.

Gender (No.)	Ethnic Composition	Age Range	Mean Age	Employment Status
Female (N=38)	74 % Caucasian 22 % Indian 2 % Afro-Caribbean 2 % Not Stated	18-45	27	87% Employed 11% Housewife 2% Student
Male (N=29)	76 % Caucasian 18 % Indian 3 % Afro-Caribbean 3 % Mixed	18-45	32	97% Employed 3% Unemployed

Methodology

The age of the female participants in the study ranged from 18 to 45 years, with a mean age of 27 years. Eighty seven percent were employed, 11% were housewives and one woman was a student. The participants were classified into a social class group on the basis of their occupation. The majority of women were placed into social class levels II and III. The age of the male participants in the study also ranged from 18 to 45 years old, with a mean age of 32 years. Ninety seven percent were employed with only one man in the sample currently unemployed. The majority of men were also placed into social class levels II and III on the basis of their occupation.

The ethnic composition of the total sample was 75% Caucasian, 18% Indian, 3% Afro-Caribbean, 1% Mixed (White and Black-Caribbean) and 1% did not state their ethnic origin. The sample reflected the composition of the Parentcraft Groups that the researcher attended. The amount of time that participants had been co-habiting ranged from twelve months to fourteen years. None of the sample had consulted either their General Practitioner (GP) or a psychiatrist regarding a psychological or mental health issue in the preceding six months. One man in the sample was being prescribed psychiatric medication for bipolar disorder. He reported that he had not had an 'episode' since 1992. Although all of the participants in the study were expecting their first child, 34% of the female participants were not pregnant for the first time, having experienced a miscarriage prior to their current pregnancy.

2.3 Measures

Participation in the study involved the completion of a booklet of self-report questions on one occasion. Each participant (men and women) completed the same set of questions. An important consideration in the selection of the measures to be used for the study was the avoidance of unnecessarily long and complicated instruments whilst at the same time ensuring that the instruments that were chosen possessed sufficient psychometric properties. It is generally accepted that people are more likely to agree to participate if participation will not take up too much of their time (Clarke-Carter 1997). All of the measures selected for this study were deemed to provide comprehensive information about the constructs that the study examined, and were also brief with clear instructions and fairly simple questions.

Methodology

The booklet of questions included a measure of stress (Perceived Stress Scale; Cohen, Kamarck & Mermelstein, 1983), psychological distress (General Health Questionnaire-12; Goldberg, 1992), depression (Edinburgh Postnatal Depression Scale; Cox, Holden & Sagovsky, 1987), marital/partner satisfaction (Relationship Assessment Scale; Hendrick, 1988) and social support (Family Support Scale; Dunst, Jenkins & Trivette, 1984). A set of brief semi-structured questions was also devised to obtain information about demography, pregnancy, and well-being. Summaries of the measures used in this study are presented in Table 1. Appendices 1 to 6 contain examples of each measure used.

The measures used in the study were combined into a booklet form and professionally printed. It was hoped that the professional presentation of the questions would increase participant's motivation to complete and return the booklet. The name of each measure was not included in the booklet as the researcher did not wish to specifically state the concept that each set of questions was measuring, in order to try to avoid putting people off or people providing socially desirable responses. The questions/measures were ordered in a particular way in the booklet. The questions about demographic, pregnancy, and well-being information came first. Next, came the Relationship Assessment Scale, which comprised a set of simple questions. The GHQ-12, then the Perceived Stress Scale, and Family Support Scale and finally the more sensitive questions that comprised the Edinburgh Postnatal Depression Scale. It is generally recommended that more sensitive questions are included later in a questionnaire in order to reduce the likelihood of respondent's being 'put off' straightaway (Clarke-Carter, 1997).

Table 2.
Summary of Measures.

Measure	Variable measured	Reference	No. of Items (subscales)
Semi-structured questions	Demography Pregnancy Family History Well-being		11
Perceived Stress Scale (PSS-14)	Perceived Stress	Cohen, Kamarck and Mermelstein, 1983	14
General Health Questionnaire 12 (GHQ-12)	Psychological distress	Goldberg, 1992	12
Edinburgh Postnatal Depression Scale (EPDS)	Depression	Cox, Holden and Sagovsky, 1987	10
Family Support Scale (FSS)	Social support: size of network, quality and satisfaction	Dunst, Jenkins and Trivette, 1984	20(5)
Relationship Assessment Scale (RAS)	Partner/marital satisfaction	Hendrick, 1988	7

2.3.1 Semi-structured Questions

The semi-structured questions included questions that related to demographic information, pregnancy, family history and psychological well-being. Most of the questions were open-ended in order to enable participants to provide information freely without having to arbitrarily confine their responses. The pregnancy related questions asked specifically about any stressful events or concerns that were connected to the pregnancy. The researcher also wanted to obtain information about other possible sources of participant's reported stress. The family history questions asked specifically about whether a miscarriage or still-birth had been experienced in

the past and whether participants' had any children with a previous partner. Whilst the researcher wanted to avoid excluding participants who had had a miscarriage (as this would have reduced the potential recruitment pool substantially), it was important to be aware of any participant's who had previously had a miscarriage for consideration in the analysis of the data. The well-being section asked questions about contact with General Practitioners (GP's) and psychiatric services regarding mental health issues within the previous 6 months. The investigator obtained important information from the answers to the semi-structured questions, which were used to inform the results of the study.

2.3.2 Perceived Stress Scale

The Perceived Stress Scale (PSS) was chosen as the measure of stress for this study. The Parenting Stress Index (Abidin, 1995) was considered; however, this measure has been validated for use with parent's whose children are aged between 1 month old and 12 years old. As the participants in this study, had not yet had their babies, the Parenting Stress index was deemed inappropriate for this study, as many of the questions were not relevant to the current sample.

The Perceived Stress Scale (PSS) was devised by Cohen, Kamarck and Mermelstein (1983) to provide a short self-report scale designed to measure the degree to which situations in a person's life were appraised as stressful. It focuses upon the appraisal of events rather than the number of events that were experienced. It was a more global scale than measures of stress that have focused specifically upon certain life events. The PSS was also sensitive to chronic stress and stress resulting from expectations about future events (Cohen et al. 1983). It was a subjective scale that provided an accurate representation of an individual's experiences. The Perceived Stress Scale (PSS) was available in three versions which related to the number of items in the scale: PSS-14 which was selected for this study; PSS-10 which omitted items 4, 5, 12 and 13; and PSS-4 which had only items 2, 6, 7 and 14.

The PSS-14 consisted of 14 items, which asked information about individuals' thoughts and feelings in relation to perceived stress. Respondents were asked to rate how often they had thought or felt a certain way during the last month. Items were

rated using a 5-point Likert scale, with responses ranging from “*never*” (0) to “*very often*” (4). A total score was obtained which ranged from 0-56. The higher the total score, the higher the respondent’s perceived level of stress. Cohen et al. (1983) do not recommend a specific cut off score in order to distinguish between high and low levels of perceived stress.

Cohen et al. (1983) conducted pilot studies to assess the reliability and validity of the PSS. Three samples were used, two consisting of college students and one consisting of a group of people participating in a ‘stop smoking programme’ held in the community. Alpha coefficients of reliability were reported to range from 0.84 to 0.86, which indicated a high degree of consistency within the PSS items. As the PSS was standardised on college samples, a reliability analysis in reference to the current sample was conducted using the Statistical Package for Social Scientists (SPSS). The alpha coefficient was 0.81. With regard to the validity of the PSS, evidence of concurrent validity was found in the college student samples where there were modest correlations with ‘number of life events’ (0.17 to 0.39), and ‘impact of life events’ (0.24 to 0.49) (Cohen et al. 1983). The PSS also demonstrated predictive validity, proving to be a better predictor of the outcome in question e.g. physical symptoms or depression (0.52 to 0.70) than life event measures. Mean scores for female participants in these three validation studies were 23.57 and 25.71 in the student samples and 25.6 in the community sample (SD: 7.55, 6.20, 8.24). Mean scores for male participants were 22.38 and 21.73 in the student samples and 24.0 in the community sample (SD: 6.79, 8.42, 7.80).

A general population study, which consisted of a random stratified sample of 2387 American people who completed the measure over the telephone, has also been completed (Cohen & Williamson, 1988). The reliability alpha coefficient in this study was 0.75. Within this study, the mean score was 19.62, (SD: 7.49; Range 0-45).

2.3.3 General Health Questionnaire

The General Health Questionnaire (GHQ) was chosen as the measure of psychological distress for this study. An alternative measure of psychological distress/psychiatric disorder was the Symptom Checklist 90-Revised: SCL-90R

Methodology

(Derogatis, 1994). The SCL-90R was not chosen as it was felt to be too cumbersome for participants to complete along with the other measures.

The General Health Questionnaire (GHQ) was devised by Goldberg (1978) to provide a self-report screening instrument designed to detect non-psychotic psychiatric disorder. The GHQ provided a good indication of an individual's general level of psychological distress. Four versions of the General Health Questionnaire (GHQ) were available. The original 60 item version, plus a 30 item, 28 item and 12 item version. For this study the GHQ-12 developed by Goldberg (1992) was selected. The GHQ-12 was selected, as it was a brief measure, which excluded questions about biological and somatic symptoms that may be expected to occur during the normal course of pregnancy.

The instrument consisted of a 12 item scaled questionnaire that provided a total score. Respondents were asked to rate whether they have experienced a particular symptom or behaviour recently. Responses were rated using a 4-point Likert scale, providing a total score ranging from 0-36. No subscale scores were available with this particular version.

There has been much discussion in the literature regarding the best way to score the General Health Questionnaire. Two scoring methods were available. A Likert scoring method (0-1-2-3) or a GHQ binary scoring method (0-0-1-1). Both scoring methods were calculated but as this study was more interested in levels of psychological distress than clinical caseness, the Likert scoring method (0-1-2-3) was the primary focus as this scoring method was more useful for comparing degree of disorder between participants and provided a less skewed distribution of scores than the alternative scoring method (Goldberg & Williams, 1988). No cut off scores have been validated as yet for the Likert scoring method. Higher scores indicated more likelihood of a clinical disorder. Reliability alpha coefficients regarding the GHQ-12 have ranged from 0.82 to 0.90 across a series of studies. In the original GHQ-12 validation study, the sensitivity of the scale regarding detection of cases was 93.5 % and the specificity was 78.5 % (Goldberg, 1992).

The GHQ-12 was adapted slightly for the current study. On the original measure, participants were asked to rate their experience of symptoms or behaviour ‘recently’. To maintain continuity in this study, recently was defined and expressed in the instructions to participants as ‘within the last month’.

2.3.4 Edinburgh Postnatal Depression Scale

The Edinburgh Postnatal Depression Scale (EPDS) was chosen as the measure of depression for this study. Well-established mood scales such as the Beck Depression Inventory (Beck, Steer & Brown, 1987) and the Centre for Epidemiological Scale for Depression: CES-D (Radloff, 1977) were considered but not selected, as a limitation of both of these scales was their focus upon somatic and biological symptoms of depression which may be expected to occur during the normal course of pregnancy and consequently may be mistaken for symptoms of depression.

The Edinburgh Postnatal Depression Scale was devised by Cox, Holden and Sagovsky (1987) to provide a brief self-report screening measure of depression. The screening tool was based upon three existing questionnaires that were designed to detect psychiatric disorder. These included the SAD: Anxiety and Depression Self-Report Scale (Bedford and Foulds, 1978 cited in Cox, 1986); the HAD: Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983 cited in Cox, 1986), and the BDI: Beck Depression Inventory (Beck et al, 1961 cited in Cox, 1986). Cox et al. (1987) used items from these measures that assessed depressive symptoms, together with a few items that the authors had constructed themselves to develop the Edinburgh Postnatal Depression Scale. Consequently, the measure provides screening information regarding the presence or absence of psychiatric disorder and not psychological distress as such. Therefore, caution is required when using the measure as whilst participants may not be classified as having a psychiatric disorder (depression) as a result of completing the measure, they may be experiencing a degree of psychological distress that is not necessarily identified. Reports of psychological distress should not be invalidated as psychological distress can impact upon peoples lives in the same way that clinical depression can.

Methodology

Despite the Edinburgh Postnatal Depression Scale's inability to measure the extent of psychological distress present as opposed to psychiatric disturbance, it became a widely used screening tool for postnatal depression, used by many Health Visitors as part of their routine practice. The measure has also been used extensively for research purposes. The measure consisted of 10 items that included common symptoms of depression but excluded somatic and/or biological symptoms e.g. fatigue, changes in appetite that may be expected to occur during the normal course of pregnancy. The questions were worded so that participants could indicate the presence of symptoms that were not ordinarily associated with pregnancy e.g. Item 7: "I have been so unhappy that I have had difficulty sleeping". Two of the items also assessed symptoms of anxiety.

Items were scored using a 4-point Likert scoring method (0-1-2-3). A total score was provided ranging from 0-30. This scale was well validated for use with English speaking women using Research Diagnostic Criteria for minor and major depression as the criterion measure in postpartum samples (Cox et al. 1987). Studies have also begun to validate the measure for use with prepartum women (Murray & Cox, 1990) and for use with fathers during the postpartum period (Matthey, Barnett, Kavanagh & Howie, 2001).

A variety of cut-off scores to indicate cases of minor/major depression were recommended as a guide depending upon the sample characteristics and when the measure was used. A cut off score of 12/13 has been supported in several studies of postnatal women with 80-100 % sensitivity (Cox et al. 1987). A cut off score of 12/13 has also been validated in women studied during the antenatal period, with lower levels of sensitivity (64 %) and specificity (90 %) (Murray & Cox, 1990).

Bearing in mind that in Western cultures men tend to be less expressive about negative emotions than women, (Wilhelm, Parker & Dewhurst, 1998) applying the same cut-off scores to men that have been validated upon women, may not be appropriate as men may experience similar levels of distress to women but score lower on self-report measures. Consequently, several studies that have used the Edinburgh Postnatal Depression Scale (EPDS) with fathers have recommended lower cut off scores than those recommended for use with women (Areias et al. 1996; Lane

et al. 1997). It is important to note that the Edinburgh Postnatal Depression Scale has only been validated for use with fathers during the postnatal period. No validation studies have yet been published regarding the use of the Edinburgh Postnatal Depression Scale with fathers during pregnancy.

For this study, the recommended cut off scores of 9/10 for minor/major depression was used for the male participants (Matthey et al. 2001). Sensitivity and specificity levels of 71.4% and 93.8% respectively were obtained in the original validation study of fathers during the postnatal period. The recommended cut off scores of 12/13 for minor/major depression was used for the female participants in this study. In addition to identifying caseness for depression, the EPDS can also compare the degree of depressive symptoms within a sample. This was also considered within the analysis.

2.3.5 Family Support Scale

The Family Support Scale (FSS) was chosen as the measure of social support for this study. Alternative measures that assess levels of social support were considered but not selected for the study. The Social Support Questionnaire was considered (Sarason, Levine, Basham & Sarason, 1983). This scale consisted of 27 items, which provided information regarding size of social support network, and levels of satisfaction with the support that was available. Respondents were asked to list people whom they can count on in certain circumstances and rate how satisfied they were with the support. This scale was not selected as it was felt to be unnecessarily long.

The Family Support Scale was chosen as it was easy to administer, and fairly short whilst at the same time comprehensive and broad in terms of the range of different dimensions of support that can be measured. It was important to select a support measure that would capture the multidimensional nature of social support.

The Family Support Scale (FSS) was devised by Dunst, Jenkins and Trivette (1984) to provide a short self-report scale designed to measure different sources of support that were helpful to families who were raising a young child. The measure was originally developed specifically for use with parents of children with developmental

Methodology

disabilities. The validation sample for this measure consisted of 224 parents of children with disabilities. Reliability alpha coefficients for the measure were 0.79 for the average correlation of the 18 items and 0.85 for the average correlation between the 18 items and the total score (Dunst et al. 1984). As the FSS was originally developed for parents of children with developmental difficulties, a reliability analysis in reference to the current sample was conducted on SPSS. The alpha coefficient was 0.67, which is considerably lower than in the validation studies but still considered to be fairly robust. The reduced reliability may have been due to one of the items 'Early Intervention Programmes' having zero variance when reliability was calculated. This may have reflected the potential unsuitability of the item for the current sample as all participants rated this item as Not Available. The current sample were all expecting healthy, developmentally 'normal' babies, consequently there will have been no need to be involved in an early intervention programme. With hindsight, perhaps this item should have been removed from the scale.

The FSS provided information about sources of social support, the amount of social support received, how helpful that support was perceived to be and how satisfied an individual was with their level of social support. Individuals rated how helpful they had found 18 possible sources of support over the previous 3-6 months. There was an option to include two additional sources of support that had not been covered within the body of the measure already e.g. National Childbirth Trust, Internet Websites. The measure contained five subscales relating to sources of support: Partner/Spouse; Informal Kinship; Formal Kinship; Social Organisations; and Professional Services. Responses were rated using a 5-point Likert scale, with responses ranging from "*not helpful at all*" (1) to "*extremely helpful*" (5). Sources of support that were not available (NA) to the respondent were given a score of zero.

The FSS could be scored in a variety of ways depending upon the information that was sought (Dunst et al. 1984). Firstly, information regarding the total number of sources of support that were available could be calculated. Secondly, the quality of support provided by the different sources of support could be obtained. Each of the five subscales was scored to calculate their degree of helpfulness. The subscales were then totalled to obtain an overall level of how helpful the support had been. Thirdly, as there were a different number of items in each of the five subscales, each subscale

total was weighted in order to compare the degree to which each source of support was deemed helpful. This was calculated by dividing the subscale score by the number of items within that subscale. Any additional sources of support that an individual had noted were incorporated into whichever subscale seemed most appropriate. Finally, the level of satisfaction with support received could be calculated. This was achieved by dividing the subscale total scores by the number of available sources of support.

The Family Support Scale (FSS) was adapted slightly for this study. In order to create consistency across all measures used in the study, participants were asked to rate levels of social support over the last month, instead of the last 3-6 months as per the original FSS. Also Item 15 was altered from Professional helpers (social workers, therapists, teachers etc) to Professional helpers (health visitors, midwives, district nurse etc) to make it more relevant to the population being studied.

2.3.6 Relationship Assessment Scale

The Relationship Assessment Scale was chosen as the measure of relationship satisfaction in this study. Other well-known measures were considered but not selected for the study. The Dyadic Adjustment Scale (Spanier, 1976) was a multi-dimensional measure of adjustment in close relationships. It was a 32-item measure that contained 4 subscales, which represented different constructs including dyadic satisfaction. It was a widely used and respected measure providing more detailed information than generic satisfaction measures. The 10-item satisfaction subscale and a 7 item short form of the Dyadic Adjustment Scale had been developed, however these measures were reported as being more burdensome to complete than the Relationship Assessment Scale (Hendrick, Dicke & Hendrick, 1998). The Dyadic Adjustment Scale was not selected as it was thought to be too long, plus there was little reliability and validity data regarding the short forms (Hunsley, Pinsent, Lefebvre, James-Tanner & Vito, 1995).

The Golombok Rust Inventory of Marital State (GRIMS; Rust, Bennum, Crowe & Golombok, 1986) was also considered. This was a 28-item measure that assessed the quality of marital relationships and the degree of marital distress. Split half reliability

Methodology

scores were reported in the GRIMS pilot study: 0.92 for men and 0.90 for women (Rust et al. 1986). The GRIMS was standardised upon a sample of GP patients and a sample of couples requesting therapy. Reliability coefficients ranged from 0.81 to 0.94, which indicated a high degree of consistency within the items included in the measure (Rust et al. 1990). Again this measure was not selected as it was felt to be too long. Also the scoring method was felt to be inadequate. Raw scores were transformed into categories (1-9). Those with the highest scores were placed into category '9' which represented 'very severe problems', category '8' represented 'severe problems' and so on. Respondents with a score of 16 or less were placed into category '1' which represented an 'undefined' category. Consequently, the scoring system was of limited use with respondents whose raw scores placed them in category '1'.

The Relationship Assessment Scale (RAS) was devised by Hendrick (1988) to provide a brief generic measure of relationship satisfaction. The scale measured the subjective evaluation of a participant's perception of their relationship with their partner. The measure consisted of 7 items that were rated using a 5-point Likert scale (1-2-3-4-5). The items were specific enough to assess several important relationship dimensions including: general levels of satisfaction with the relationship, the amount of love a person had for their partner, how well the relationship compared to others, how well expectations had been met, how well the partner met the person's needs, problems in the relationship and regrets about the relationship (Hendrick, Dicke & Hendrick, 1998). It could be used with anyone in an intimate relationship i.e. married, cohabiting or dating relationships.

The scale was originally developed in America and was based upon two validation studies of undergraduate students in America. These studies demonstrated that the measure was psychometrically sound with reliability alpha coefficients of 0.86. As the original measure was based upon college samples, a reliability analysis was conducted upon the current sample using the SPSS package. The reliability alpha coefficient was 0.87 for the current sample. The Relationship Assessment Scale has also been correlated (0.80) with the 32 item Dyadic Adjustment Scale (Spanier, 1976), which was a well-respected albeit longer measure of relationship satisfaction.

There were two scoring methods available for the measure. The average score for each item could be calculated providing a range of 1-5. An average score over four was likely to indicate that the respondent was not distressed about their relationship with their partner. For men, average scores that were closer to 3.5 may indicate greater relationship distress and relationship dissatisfaction. For women, average scores between 3 and 3.5 would indicate the same (Hendrick et al. 1998). Alternatively, the total score could be calculated. This provided a total score range of 7-35. The total score method was utilised in the current study. Unfortunately, there was no clear cut off point between satisfaction and dissatisfaction using the total score method. A general guide was that the higher the total score the greater the relationship satisfaction.

2.4 Procedure

2.4.1 Ethical Approval

The Leicestershire Research Ethical Committee reviewed the research proposal and gave the study full approval in September 2002. The confirmation letter with regard to ethical approval can be found in Appendix 7. Letters of invitation, information leaflets and consent forms are given in Appendix 8.

2.4.2 Recruitment from Parentcraft Groups

Initially, two hospitals in Leicester were approached regarding recruitment to the study. Unfortunately at the time of the study, Parentcraft Groups conducted at the Leicester Royal Infirmary were infrequent. This was thought to be due to the Parentcraft Group Co-ordinator post being vacant. Consequently, recruitment to the study was concentrated upon one hospital: Leicester General Hospital. Close liaison with the Parentcraft Group Co-ordinator regarding the dates and schedules of the planned groups was undertaken.

Participants were pregnant women and their partners who were attending Parentcraft Groups at Leicester General Hospital, under the care of Consultant Obstetricians. The Consultant Obstetricians were informed of the study and their approval was given.

Methodology

The letter informing the Consultant Obstetricians about the research is given in Appendix 9.

The Parentcraft Groups held at the Leicester General Hospital took place on Monday and Tuesday evenings. The programme consisted of five weekly sessions covering physical issues relating to pregnancy, birth and postpartum. Up to twelve couples attended each group and the groups were closed. Occasionally, intensive workshops were also conducted. These took place over two sessions on a Wednesday evening and Saturday.

For the groups that were held on a Monday or Tuesday evening, the group facilitator (Parentcraft Midwife) distributed information about the study during the second session. The facilitator gave out an invitation letter from Mr Stewart (Clinical Director of Women's and Perinatal Health: University Hospitals Leicester), and an information leaflet, which described the project. The group were also informed that the researcher planned to attend the following session to enquire about their willingness to take part. The following week, the researcher attended the third session of the Parentcraft Group to recruit participants. The point in the session that the researcher joined the group varied throughout the recruitment period. The researcher attended some groups at the beginning of the session, some in the middle during a scheduled break and some at the end of the session. This depended upon the facilitators' personal preference. The researcher attended two intensive workshops during the recruitment period. The procedure was identical, the only difference being that people had less time to consider whether they wanted to take part (3 days instead of 7 days).

When the researcher attended the group, a brief description of the project was given and attempts were made to establish rapport with potential participants. Couples who expressed an interest in taking part completed a Screening Questionnaire to ensure that they met the study criteria (Appendix 10). Couples who met the criteria signed a form indicating their written consent to participate in the study. Written consent was required from both members of the couple. Participants were advised that their GP would be informed about their participation in the study. Appendix 11 contains the

standard letter that was posted to each participant's GP. Contact details for participants were noted and a booklet of questions was issued to each participant.

To encourage independent responses, each participant was given a separate pre-paid envelope in which to return the completed booklet. The importance of answering the questions independently of one another was also emphasised. Participants took the booklets away with them and returned them postally. If the completed booklets had not been posted to the researcher within two weeks, a reminder letter was sent to the participant's home address (Appendix 12). The booklet of questions was completed once only by each participant during the third trimester of pregnancy. No further follow up of participants took place. Participants were given the option of receiving feedback regarding the results of the study. Three participants opted to receive a summary of the results.

2.4.3 Pilot Study

A pilot study was conducted in order to ensure that the questions asked in the booklet were understood and that the procedure of the study was working as planned. The pilot study consisted of two stages. Firstly, two friends of the researcher who were pregnant and their partners were approached and asked to complete the booklet of questions and provide feedback about the questions. The booklet of questions was reported as being well laid out, readable, with clear instructions for each section and simple questions. None of the questions were left blank or misunderstood and the questions were not considered to be overly intrusive. The booklet of questions was quick to complete, taking approximately 10 minutes.

Secondly, the researcher attended a Parentcraft Group in July 2002 and tested out the recruitment procedure with three couples that volunteered to help with the pilot study. As a result of this, several small cosmetic alterations to the recruitment procedure were introduced. A Data Recording Sheet was devised which was completed at each Parentcraft Group that the researcher attended. This enabled the researcher to keep track of the recruitment process and code the questionnaires such that participants could be tracked and the reminder letter sent if necessary. A space was provided on the Consent Form for participants to note their contact address. Couples who took part

Methodology

in the pilot study also expressed a preference to complete the questions at home, therefore the option of doing this and being given a pre-paid envelope to return the booklet was emphasised by the researcher when introducing the project.

3. RESULTS

3.1 Method of Statistical Analysis

This study generated five hypotheses based upon existing literature that has examined mothers and fathers experiences of pregnancy. The hypotheses were set to enable the exploration of reported levels of stress, psychological distress and depression in a sample of pregnant couples and to examine the impact of social support upon their experiences. Descriptive and statistical analyses were conducted with a view to answering each research question and testing each hypothesis.

Preliminary statistical analyses were undertaken in order to identify the properties of the data and to ascertain whether parametric or non-parametric analyses were most appropriate. The use of parametric statistics relies upon three assumptions about the data being met. These include interval levels of measurement, a normal distribution of the data, and homogeneity of variance (Coolican, 1996).

With regard to the level of measurement, there has been some debate in the literature regarding the classification of psychological measurement scales. Discussions continue as to whether Likert type scales, as used in this study, should be treated as ordinal or interval levels of measurement. Purist researchers argue that psychological measurement scales should be treated as ordinal level data as equal distances between values on the scale cannot be assumed (Clark-Carter, 1997). However, many researchers who have included Likert type scales in their studies have treated the data as interval data. Howell (1997) has argued that it is safe to use parametric statistics even when these assumptions are not strictly met. For the current study, it was important to use parametric statistics in order to maximise the power of the results, therefore for most of the analysis, parametric tests were chosen.

Kolmogorov-Smirnov Tests were carried out on each measure, to test the assumption of normal distribution of the variables (Kinnear and Gray, 2000). Exploratory statistics revealed that the majority of the main variables under analysis were normally distributed. No significant findings were obtained for each measure apart from the Relationship Assessment Scale. Consequently, it was assumed that most of the data could be analysed using parametric methods. Erring on the side of caution, analysis incorporating the Relationship Assessment Scale was calculated using non-

Results

parametric statistical analysis. The Levene's Test for Equality of Variances was also noted throughout the analysis and most of the calculations that were completed met the assumption of homogeneity of variances. Where this was not assumed, this is noted in the relevant section.

For most of the statistical calculations, the significance level was set at the standard .05 probability level. However, to test some of the hypotheses several statistical calculations were necessary, therefore the Bonferroni Correction was applied to guard against increasing Type 1 errors (rejecting the null hypothesis in error). The Bonferroni correction was achieved by dividing the .05 probability level by the number of statistical tests completed in order to obtain an appropriate probability level as the criterion for statistical significance. The relevant sections highlight when the Bonferroni Correction was applied.

In accordance with the design of the study the following analyses were conducted. In order to identify potential gender differences, between groups' analyses were conducted where males and females were treated as independent groups, and T Tests were calculated. To examine relationships between key variables, the sample was treated as one group and bivariate correlational analysis was conducted. Bivariate correlations were also completed to identify gender differences in the strength of the relationship between key variables. For some analyses, couples were matched together to look for interaction effects regarding whether partner reports/views were related to one another. Post-hoc analyses were conducted to identify whether there was evidence to support the buffering or direct effects models of social support in relation to stress and psychological distress. Multiple regression analyses were carried out to identify whether stress and social support acted as predictors of psychological distress and depression and whether there were any gender differences in the predictor variables.

3.2 Descriptive and Explorative Analysis

Table 3 presents information regarding the measures used in the study and male and female participant's mean and standard deviation scores on the measures.

Table 3.

Participants expecting their first child: Mean Scores and Standard Deviations for each psychometric measure completed during pregnancy (3rd trimester).

Gender	PSS Total	GHQ-12 Total	EPDS Total	FSS (N) Total	RAS Total
Mean (s.d)					
<i>Female</i> <i>(N = 38)</i>	21.53 (7.25)	13.29 (5.06)	6.97 (5.01)	10.08 (2.03)	33.13 (3.27)
<i>Male</i> <i>(N = 29)</i>	18.66 (6.20)	10.66 (4.59)	4.93 (3.12)	9.86 (2.08)	32.31 (3.54)

PSS = Perceived Stress Scale (Cohen et al. 1983) GHQ-12 = General Health Questionnaire (Goldberg, 1992)
 EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) FSS (N) = Family Support Subscale: Size of
 social support network (Dunst et al. 1984) RAS = Relationship Assessment Scale (Hendrick, 1988)

3.3 Research Hypotheses

3.3.1 Hypothesis One

**Women will report higher levels of perceived stress
 than men during pregnancy.**

Prior to testing the first hypothesis, exploratory descriptive analyses were conducted in order to identify how much perceived stress was reported in the sample. Table 4 provides a descriptive summary of the male and female participant's scores on the Perceived Stress Scale (Cohen et al. 1983). As can be seen from Table 4, the range of scores for both male and female participants is quite large. The large amount of variance indicates that the data is evenly spread. The mean scores for the current sample were lower than the mean scores in the validation studies of the Perceived Stress Scale implying that the current sample reported lower levels of stress (See Section 2.3.2 of the Method).

Table 4.

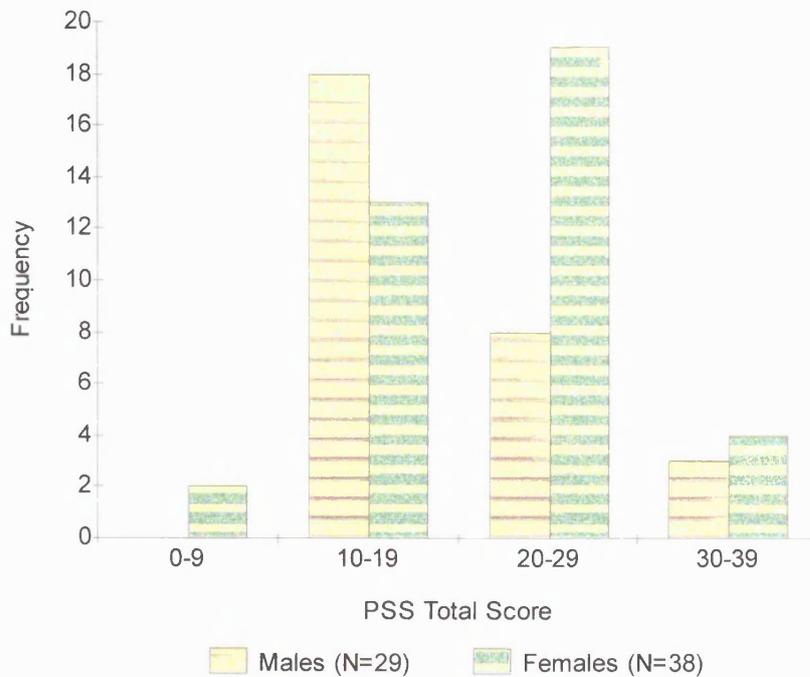
Participants expecting their first child: Descriptive Summary of Scores during pregnancy (3rd trimester) on the Perceived Stress Scale (Cohen et al. 1983).

<i>Gender</i>	<i>Mean</i>	<i>Median</i>	<i>SD</i>	<i>Variance</i>	<i>Range</i>	<i>Min. Score</i>	<i>Max. Score</i>
<i>Female</i> (<i>N</i> = 38)	21.53	22	7.248	52.526	31	8	39
<i>Male</i> (<i>N</i> = 29)	18.66	17	6.201	38.448	25	10	35

The frequency distribution of the range of reported stress scores for male and female participants is illustrated in Figure 2.

Figure 2.

Frequency of scores on the PSS for Male and Female Participants during the 3rd trimester of pregnancy.



Results

Hypothesis One: It was hypothesised that women would report higher levels of perceived stress than men during pregnancy. The parametric independent T test was completed to test this hypothesis. The results confirmed that there was a significant gender difference with women reporting higher levels of perceived stress than men: $t(65) = 1.708; p < .05$.

Participants were asked to provide qualitative information regarding the experience of stressful events/concerns that were related and unrelated to pregnancy. Table 5 provides information regarding the number of participants who reported stressful experiences.

Table 5.

Number of stressful experiences reported during pregnancy by participants expecting their first child.

<i>Gender</i>	Pregnancy Related stress	Stress unrelated to pregnancy	Both	Neither
<i>Female (N = 38)</i>	17	2	12	7
<i>Male (N = 28)</i>	11	2	5	10

Several themes were identified from the qualitative reports regarding pregnancy related stressful experiences. The majority of participants who reported pregnancy related stress referred to concerns about bleeding during the pregnancy, the possibility of miscarriage and general concern for the health and welfare of mother and baby. Specific concerns also mentioned were awaiting the results of the Down's syndrome Test and needing amniocentesis during pregnancy. Participants also reported a variety of stressful experiences that were unrelated to pregnancy. Moving house, work-related stress, financial worries and the illness or death of a family member were most frequently reported.

Results

The current study examined the accumulation of reported stress which included pregnancy related stress and stress unrelated to pregnancy. There was not enough data obtained to conduct a deeper level of analysis regarding the sources of stress. A larger sample would have been necessary in order to conduct meaningful analysis upon participants who reported only pregnancy related stress or only other sources of stress. The sample was grouped into participants who reported only stress related to the pregnancy (Females: N = 17; Males: N = 11) and participants who reported only other sources of stress (Females: N = 2; Males: N = 2) and the data were provisionally examined. Independent T tests were conducted upon the PSS total score to identify whether any gender differences were present in relation to reports of pregnancy related stress and other sources of stress. No significant differences were found; the small numbers in these arbitrary groupings may account for this. Consequently, a larger sample would be required in order to compare pregnancy related stress and other sources of stress.

3.3.2 Hypothesis Two

(a) Women will report more symptoms of psychological distress and depression than men during pregnancy. (b) There will be evidence of co-morbidity of symptoms of psychological distress and depression in couples.

Prior to testing the second hypothesis, exploratory descriptive analyses were conducted in order to identify how much psychological distress was reported in the sample. Tables 6 and 7 provide descriptive summaries of the male and female participant's scores of psychological distress (as measured by the General Health Questionnaire; Goldberg, 1992) and depression scores (as measured by the Edinburgh Postnatal Depression Scale; Cox et al. 1987). The frequency distribution of the range of reported psychological distress scores and depression scores for male and female participants are illustrated in Figures 3 and 4.

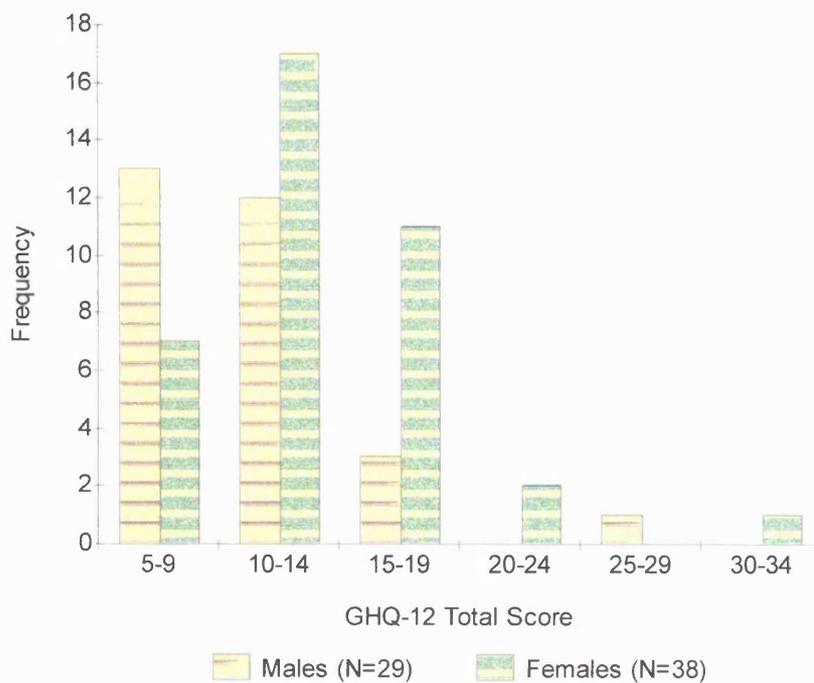
Table 6.

Participants expecting their first child: Descriptive Summary of Scores during pregnancy (3rd trimester) on the General Health Questionnaire-12 (Goldberg, 1992).

Gender	Mean	Median	SD	Variance	Range	Min. Score	Max. Score
<i>Female</i> (N = 38)	13.29	12.50	5.061	25.617	26	5	31
<i>Male</i> (N = 29)	10.66	10	4.593	21.091	22	5	27

Figure 3.

Frequency of scores on the GHQ-12 for Male and Female Participants during the 3rd trimester of pregnancy.



Results

As no cut off scores have been validated as yet for the Likert scoring method on the GHQ, it was not possible using this method to state what proportion of participants met criteria for clinical caseness. One could only speculate that higher scores indicated more likelihood of a clinical disorder. Therefore, the GHQ binary scoring method (0-0-1-1) was also applied to the data. Twenty two females (58%) and eight males (28%) scored above the cut-off of 3 indicating the presence of clinical disorders.

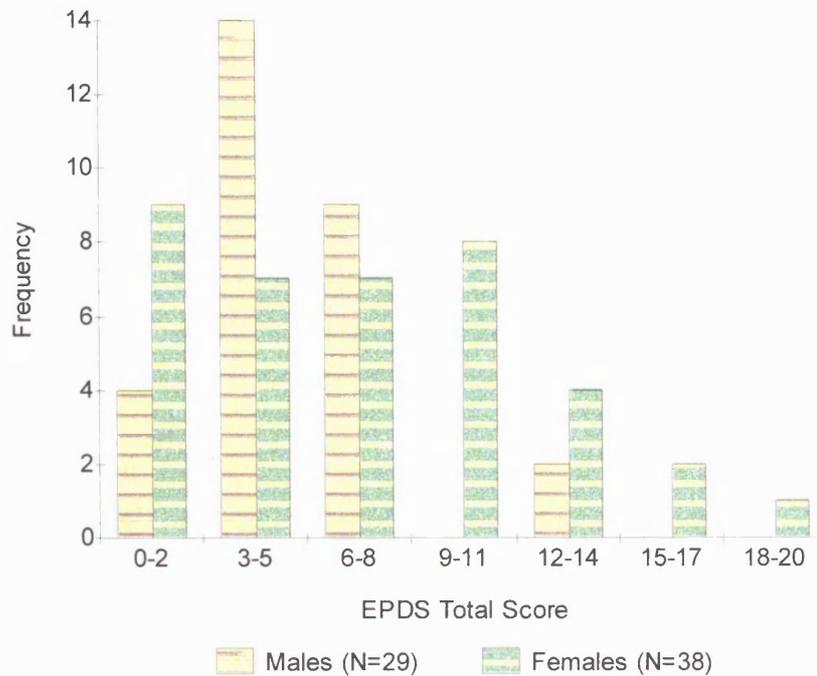
Table 7.

Participants expecting their first child: Descriptive Summary of Scores during pregnancy (3rd trimester) on the Edinburgh Postnatal Depression Scale (Cox et al. 1987).

Gender	Mean	Median	SD	Variance	Range	Min. Score	Max. Score
<i>Female</i> (<i>N = 38</i>)	6.97	7	5.011	25.107	18	0	18
<i>Male</i> (<i>N = 29</i>)	4.93	4	3.116	9.709	13	0	13

Figure 4.

Frequency of scores on the EPDS for Male and Female Participants during the 3rd trimester of pregnancy.



As can be seen in Figure 4, the majority of participants did not exceed the cut off points that were set to indicate the presence of minor or major depression. However, two of the male participant's exceeded the cut-off threshold of 9/10, suggesting the presence of minor or major depression (6.9%). Seven of the female participants scored 12 or more on the EPDS, exceeding the set threshold of 12/13 and indicating the presence of mild or major depression (18.4%).

Hypothesis Two (a): It was hypothesised that women would report more symptoms of psychological distress and depression than men during pregnancy. As two parametric independent T tests were conducted to fully test this hypothesis the Bonferroni correction was applied. Significance levels were set at $p < .025$. The results confirmed that there were significant gender differences with women reporting higher levels of psychological distress than men: $t(65) = 2.196; p < .01$ and higher levels of depression than men: $t(65) = 2.047; p < .025$. It is important to note that equal variances were not assumed for the independent T test on the Edinburgh Postnatal Depression Scale, thus weakening the result.

Results

Hypothesis Two (b): In order to test the prediction that there would be evidence of co-morbidity of reported symptoms in couples, those members of a couple who had both completed and returned the questionnaires were paired together. Twenty eight couples (56 participants) were matched together and post-hoc Pearson's Product Moment bivariate correlations were completed. Table 8 provides the correlation matrix of paired couples scores on the GHQ and EPDS.

Table 8.
Correlation Matrix of Paired Couples (N = 28) expecting their first baby Scores on the GHQ and EPDS during pregnancy (3rd trimester).

	Male EPDS	Female EPDS	Male GHQ	Female GHQ
Male EPDS		0.453**	0.729**	0.393*
Female EPDS	0.453**		0.330*	0.815**
Male GHQ	0.729**	0.330*		0.489**
Female GHQ	0.393*	0.815**	0.489**	

EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) GHQ = General Health Questionnaire (Goldberg, 1992).

*. Correlation is significant at the .05 level (1 tailed)

**. Correlation is significant at the .01 level (1 tailed)

As can be seen from Table 8, there was a significant positive relationship between couples' scores on the EPDS and the GHQ. Thus, the hypothesis was confirmed. As one member of the couple's psychological distress score and depression score increased, so did the psychological distress score and depression score of the other member of the couple indicating the presence of co-morbidity of symptoms. The researcher would have liked to conduct further analyses examining co-morbidity of symptoms in couples that exceeded the clinical threshold for depression on the EPDS. Unfortunately, there were not enough couples that met this criterion for this analysis to be possible.

3.3.3 Hypothesis Three

(a) There will be a positive linear relationship between stress and psychological distress/depression. (b) This relationship will be stronger in female participants.

As four statistical tests were conducted in total upon this hypothesis, the Bonferroni Correction was applied. Significance levels were set at $p < .01$. Scatter plots were conducted treating the sample as one group. These provided evidence of a positive linear relationship between stress and psychological distress and stress and depression; participants with higher stress scores tended to have higher psychological distress and depression scores. Pearson Product Moment bivariate correlations were calculated upon the sample as a whole, which supported the above finding. Table 9 provides details of the relationship between PSS scores and GHQ-12 scores and EPDS scores.

Table 9.

Correlation co-efficients of the stress (PSS), psychological distress (GHQ-12) and depression (EPDS) measures for all participants expecting their first baby.

	GHQ-12 (N = 67)	EPDS (N = 67)
<i>PSS Correlation Coefficient</i>	0.748**	0.753**

EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) GHQ-12 = General Health Questionnaire (Goldberg, 1992). PSS = Perceived Stress Scale (Cohen et al. 1983)

** . Significant at $p < .01$

Hypothesis Three (a): There were significant positive linear relationships between levels of stress and levels of psychological distress and depression. Consequently, the null hypothesis that there would be no linear relationship can be rejected.

Hypothesis Three (b): Bivariate correlations were conducted upon males and females as independent groups. Table 10 provides details of the relationships between stress, psychological distress and depression for men and women.

Table 10.

Correlation co-efficients of the stress (PSS), psychological distress (GHQ) and depression (EPDS) measures treating men and women as independent groups.

	Male GHQ-12 (N = 29)	Female GHQ-12 (N = 38)	Male EPDS (N = 29)	Female EPDS (N = 38)
PSS	0.632**	0.797**	0.675**	0.777**
Correlation				

EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) GHQ-12 = General Health Questionnaire (Goldberg, 1992). PSS = Perceived Stress Scale (Cohen et al. 1983)

** . Significant at $p < .01$

This finding suggested that the positive linear relationship between stress, psychological distress and depression was stronger for the women in the sample.

3.3.4 Hypothesis Four

(a) There will be a negative relationship between reported social support scores (quality of support and satisfaction with support) and reported stress and psychological distress/depression scores (b) This relationship will be stronger in female participants. (c) There will also be a negative relationship between levels of satisfaction with the partner relationship and psychological distress and depression scores. (d) There will be significant gender differences in the size of support network, quality of social support and satisfaction with support.

As several calculations were required in order to test this hypothesis, the Bonferroni Correction was applied. Significance levels were set at $p < .01$.

As the Family Support Scale can be scored in a variety of ways, exploratory descriptive analyses were conducted prior to testing this hypothesis. Table 11 provides a descriptive summary of the male and female participant's scores on the subscales of the Family Support Scale (Dunst et al. 1984).

Table 11.

Participants expecting their first child: Mean Scores and Standard Deviations on the FSS subscales completed during pregnancy (3rd trimester).

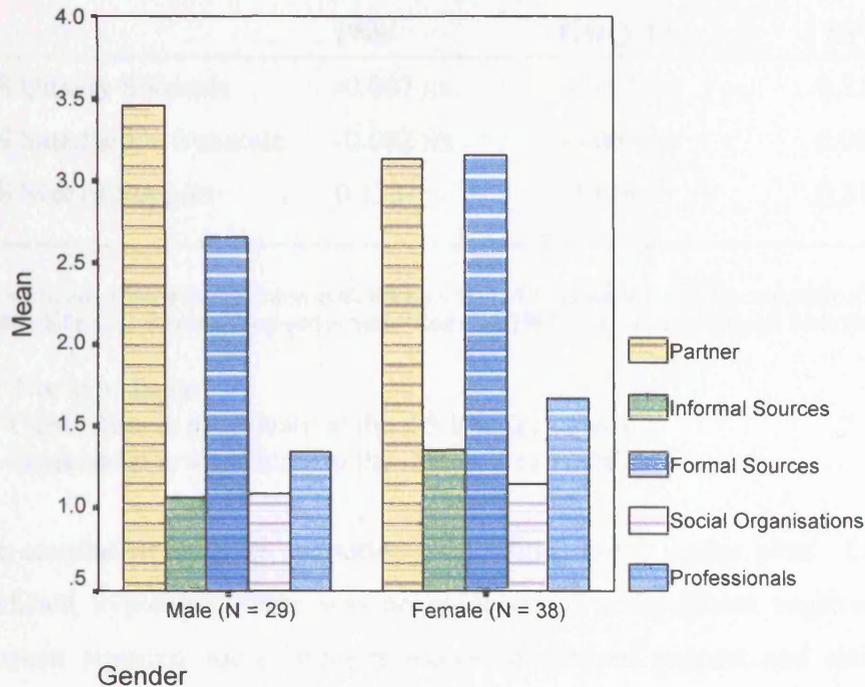
<i>Gender</i>	FSS Network Size	FSS Quality of Support	FSS Satisfaction with Support
	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)
<i>Female</i> (<i>N</i> = 38)	10.08 (2.03)	32.34 (9.41)	15.14 (3.62)
<i>Male</i> (<i>N</i> = 29)	9.86 (2.08)	30.83 (8.15)	14.55 (3.83)

FSS = Family Support Scale (Dunst et al. 1984)

Previous literature has identified that the importance of different sources of support may differ for men and women. Figure 5 presents the degree of helpfulness experienced from different sources of support for each gender for participants in the current study. Figure 5 indicates that the men in the sample rated partner support as the most helpful source of support whereas the women in the sample rated formal sources of support (i.e. parents and relatives) as slightly more helpful than partner support. The third most helpful source of support was rated as being professional services, with women finding professional support more helpful than men. Women also found informal sources of support and social organisations more helpful than men.

Figure 5.

Means for FSS Sources of Support Subscales for Male and Female Participants during the 3rd trimester of pregnancy.



Hypothesis Four (a): Scatter plots were conducted treating the sample as one group. These provided no evidence to suggest the presence of a negative linear relationship between social support, stress and psychological distress. Pearsons Product Moment Correlations were conducted upon the quality (helpfulness) and satisfaction dimensions of the Family Support Scale for the whole sample. Bivariate analyses were completed examining the relationships between social support and stress and social support and psychological distress and depression. Table 12 provides the correlation matrix detailing the results.

Table 12.

Correlation Matrix highlighting the relationships between social support (FSS), stress (PSS), psychological distress (GHQ) and depression (EPDS) for all participants expecting their first baby (N = 67).

	PSS	GHQ-12	EPDS
FSS Quality Subscale	-0.007 NS	-0.031 NS	0.210*
FSS Satisfaction Subscale	-0.082 NS	-0.069 NS	0.099 NS
FSS Size of Support	0.173	0.116	0.315**

PSS = Perceived Stress Scale (Cohen et al. 1983) GHQ-12 = General Health Questionnaire (Goldberg, 1992)
EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) FSS = Family Support Scale (Dunst et al. 1984)

NS. Not significant

*. Correlation is significant at the .05 level (1 tailed)

**. Correlation is significant at the .01 level (1 tailed)

The correlation analyses supported the findings in the scatter plots. Contrary to the predicted hypothesis there was no evidence of a significant negative relationship between reported social support scores (quality of support and satisfaction with support) and reported stress and psychological distress scores. Consequently, the null hypothesis could not be rejected. Of note, significant positive relationships between the FSS Quality of support and the Edinburgh Postnatal Depression Scale ($p < .05$), and the FSS Size of Support Network and the Edinburgh Postnatal Depression Scale ($p < .01$) were reported.

Hypothesis Four (b): Further Pearson Product Moment bivariate correlations were completed treating males and females as independent groups. Again, no significant negative relationships were identified. Consequently it was not possible to assess whether the relationships were stronger for women than men as there was no evidence to suggest the presence of a linear relationship.

Statistical tests were conducted to answer the question regarding whether there was any evidence to support the buffering or main effects models of social support. Participants were dichotomised into high and low stress and social support groups, using post hoc median split calculations performed upon the PSS and the FSS Quality of Support and Satisfaction with Support subscales. High and low levels of perceived

Results

stress and high and low levels of quality of support and satisfaction with support for the current sample were classified. Two (stress) by two (support) ANOVA's were conducted to identify any differences in reported levels of psychological distress (GHQ-12) and depression (EPDS). No significant main effects or interaction effects were found between the measures of social support and psychological distress/depression. A significant main effect for stress was identified for psychological distress and depression. These findings do not report any evidence to support either the buffering or main effects models of social support.

Hypothesis Four (c): Non-parametric Spearman's Rho bivariate correlations were completed between satisfaction with the partner relationship (as measured by the Relationship Assessment Scale) and psychological distress and depression. Table 13 provides the correlation matrix detailing these results.

Table 13.

Correlation Matrix highlighting the relationships between satisfaction with partner relationship and psychological distress and depression.

	GHQ-12 Total (N = 67)	EPDS Total (N = 67)	GHQ-12 Females (N = 38)	GHQ-12 Males (N = 29)	EPDS Females (N = 38)	EPDS Males (N = 29)
RAS	-0.447**	-0.316**	-0.603**	-0.476**	-0.421**	-0.264 NS

RAS = Relationship Assessment Scale (Hendrick, 1988)

NS. Not significant

** . Correlation is significant at the .01 level (1 tailed)

As can be seen from Table 13, significant negative relationships were identified for the whole group between relationship satisfaction and psychological distress and depression thus confirming the hypothesis. Significant negative relationships were also identified when women were analysed as an independent group. For the female participants, a strong significant negative relationship between relationship satisfaction and psychological distress was identified. For the male participants significant negative relationships were identified between relationship satisfaction and psychological distress but not relationship satisfaction and depression.

Results

Hypothesis Four (d): It was hypothesised that significant gender differences would be apparent between size of social support network, quality of social support and satisfaction with social support. Parametric independent T tests were conducted to test this hypothesis. Due to the number of calculations required to test this hypothesis, the bonferroni correction was applied and significance levels were set at $p < .01$. Table 14 details the findings.

Table 14.

Participants expecting their first baby: Gender differences in Network size, Quality of support and Satisfaction with support during pregnancy (as measured by the Family Support Scale Dunst et al. 1984).

	Mean	Standard deviation	t
<i>Network Size</i>			
Males (N = 29)	9.86	2.083	0.428 NS
Females (N = 38)	10.08	2.032	0.427 NS
<i>Quality of Support</i>			
Males (N = 29)	30.83	8.151	0.691 NS
Females (N = 38)	32.34	9.413	0.704 NS
<i>Satisfaction with Support</i>			
Males (N = 29)	14.55	3.834	0.645 NS
Females (N = 38)	15.14	3.617	0.640 NS

NS. Not significant.

As can be seen from Table 14 no significant gender differences were found at $p < .01$. Even at the .05 significance level there were still no significant differences.

3.3.5 Hypothesis Five

Perceived stress, satisfaction with social support, and satisfaction with partner relationships will account for the variation in individual's reported symptoms of psychological distress and depression. Of these, satisfaction with social support will account for the largest proportion of the variance.

Multiple linear regression using the Enter and Stepwise methods were conducted upon the whole sample to test this hypothesis. Separate analyses were conducted upon two criterion variables: GHQ-12 and the Edinburgh Postnatal Depression Scale. Using the Enter method, variables that were entered into the model as predictor factors included Perceived Stress Scale score, Relationship Assessment Scale Score, and Family Support Quality and Satisfaction sub-scale scores. Whilst it was apparent that the Relationship Assessment Scale did not appear to be normally distributed and consequently did not meet parametric statistical criteria, it was considered important to include it as a potential predictor variable given the significance of the partner relationship in prior research.

For the model with GHQ-12 as the criterion variable, one case was identified as having a large residual (± 3 SD). Consequently this case was removed from the analysis in order to obtain more reliable findings. Using the enter method, a significant model emerged for the criterion variable GHQ-12: Adjusted R Square = .560; $F_{4,61} = 21.710$, $p < .01$. This model accounted for 56% of the variance in the GHQ-12 scores for the sample ($N = 66$). Significant variables are shown in Table 15. Quality of social support and satisfaction with social support were not significant predictors in this model. This may be explained by the reported lack of linear relationship regarding the FSS subscales reported earlier in the results.

Table 15.

Predictor Variables for the criterion variable: GHQ-12. Multiple Regression analysis using the Enter Method (N = 66).

Predictor Variables	Standardised beta coefficients	<i>p</i>
PSS	.598	<.01**
RAS	-.287	<.01**
FSS (Quality Subscale)	-.035	.801 NS
FSS (Satisfaction Subscale)	.108	.447 NS

PSS = Perceived Stress Scale (Cohen et al. 1983) GHQ-12 = General Health Questionnaire (Goldberg, 1992)
 FSS = Family Support Scale (Dunst et al. 1984) RAS = Relationship Assessment Scale (Hendrick, 1988)

NS. Not significant

** . Significant at the .01 level

Using the enter method, a significant model emerged for the criterion variable EPDS: Adjusted R Square = .597; $F_{4,62} = 25.431$, $p < .01$. This model accounted for 59% of the variance in the EPDS scores for the sample (N = 67). Significant variables are shown in Table 16. Satisfaction with the partner relationship, quality of social support and satisfaction with social support were not significant predictors in this model.

Table 16.

Predictor Variables for the criterion variable: EPDS. Multiple Regression analysis using the Enter Method (N = 67).

Predictor Variables	Standardised beta coefficients	<i>p</i>
PSS	.696	<.01**
RAS	-.112	.247 NS
FSS (Quality Subscale)	.248	.066 NS
FSS (Satisfaction Subscale)	-.009	.945 NS

PSS = Perceived Stress Scale (Cohen et al. 1983) EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987)
 FSS = Family Support Scale (Dunst et al. 1984) RAS = Relationship Assessment Scale (Hendrick, 1988).

NS. Not significant

** . Significant at the .01 level

Multiple regression analyses were also conducted using the Stepwise method in order to identify what proportion of the variance in the criterion variables were explained by each predictor variable. Stepwise calculations were conducted upon both criterion variables: GHQ-12 and EPDS. The results are presented in Tables 17 and 18.

Table 17.

Predictor Variables for the criterion variable: GHQ-12. Multiple Regression analysis using the Stepwise Method (N = 66).

Model	Predictor Variables	Adjusted R Square	<i>F</i>	<i>p</i>	Standardised Beta Coefficients	<i>p</i>
1	PSS	.521	71.772	<.01**	.727	<.01**
2	PSS RAS	.568	43.708	<.01**	.603 -.261	<.01** <.05*

PSS = Perceived Stress Scale (Cohen et al. 1983) RAS = Relationship Assessment Scale (Hendrick, 1988)

As can be seen from Table 17, Model 1 with the PSS as the only predictor variable accounted for 52% of the variance in the scores on the GHQ-12. The inclusion of the

Results

RAS as a predictor variable in Model 2 resulted in an additional 5% approximately of the variance being explained. The predictor variables: Quality of social support and Satisfaction with social support (which were not significant variables using the Enter method), were excluded from the Stepwise analysis, as they did not significantly strengthen the model.

Table 18.

Predictor Variables for the criterion variable: EPDS. Multiple Regression analysis using the Stepwise Method (N = 67).

Model	Predictor Variables	Adjusted R Square	F	p	Standardised Beta Coefficients	p
1	PSS	.560	84.906	<.01**	.753	<.01**
2	PSS	.600	50.594	<.01**	.754	<.01**
	FSS (Quality)				.215	<.01**

PSS = Perceived Stress Scale (Cohen et al. 1983) RAS = Relationship Assessment Scale (Hendrick, 1988)
 EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) FSS (N) = Family Support Subscale: Size of social support network (Dunst et al. 1984).

As can be seen from Table 18, Model 1 with the PSS as the only predictor variable accounted for 56% of the variance in the scores on the EPDS. The inclusion of the Quality of social support (FSS Quality) as a predictor variable in Model 2 resulted in an additional 4% approximately of the variance being explained. The predictor variables: satisfaction with partner relationship (RAS) and satisfaction with support (FSS Satisfaction subscale) were excluded from the Stepwise analysis, as they did not significantly strengthen the model.

Comparing the Enter and Stepwise methods of multiple linear regression, the stepwise method accounted for more of the variance in the criterion variables EPDS and GHQ-12 than the enter method. Contrary to the predicted hypothesis, perceived stress was the predictor variable that contributed to the largest proportion of the variance in both psychological distress (GHQ-12) and depression (EPDS). Consequently, the hypothesis that satisfaction with social support would explain the largest proportion of the variance was unconfirmed.

Results

Further stepwise calculations were undertaken to try to establish whether there were any gender differences in the amount of variance that was explained by the predictor variables. Table 19 presents the findings.

Overall, the strongest stepwise multiple regression model was the female only model (N = 38) where perceived stress (PSS) and quality of social support (FSS-Q) explained 66% of the variance in depression (EPDS) scores. This was closely followed by the female only model (N = 37) where perceived stress (PSS) and satisfaction with social support (FSS-S) explained 64% of the variance in psychological distress (GHQ-12) scores. The stepwise models that included only male participants explained less of the variance in depression and psychological distress.

Table 19.

Gender differences in explained variance of criterion variables EPDS and GHQ-12 using stepwise multiple regression.

<i>Gender</i>	<i>Criterion Variable</i>	<i>Predictor Variable</i>	<i>Adj R Square</i>	<i>F</i>	<i>p</i>	<i>Standardised Beta Coeff.</i>
<i>Male (N = 29)</i>	GHQ-12	RAS	.563	37.058	<.01	-.761**
<i>Male (N = 29)</i>	EPDS	PSS	.436	22.630	<.01	.675**
<i>Female (N = 38)</i>	EPDS	PSS (1)	.593	54.979	<.01	.777**
		PSS (2)	.664	37.639	<.01	.791**
		FSS-Q (2)				.281**
<i>Female (N = 37)</i>	GHQ-12	PSS (1)	.608	56.789	<.01	.787**
		PSS (2)	.645	33.718	<.01	.822**
		FSS-S (2)				.218*

PSS = Perceived Stress Scale (Cohen et al. 1983) RAS = Relationship Assessment Scale (Hendrick, 1988)
 EPDS = Edinburgh Postnatal Depression Scale (Cox et al. 1987) FSS (Q) = Family Support Subscale: Quality of social support FSS (S) = Family Support Subscale: Satisfaction with support (Dunst et al. 1984)
 (1) = Model 1 (2) = Model 2

*. Significant at the .05 level

** . Significant at the .01 level

4. DISCUSSION

4.1 Overview

The current study investigated the relationships between stress, psychological distress, depression and social support in a sample of pregnant women and their partners. The study was exploratory in nature and placed a particular emphasis upon the exploration of gender differences in the range of reported stress and psychological distress. A specific aim of the study was to provide new information about fathers' experiences during pregnancy.

The following chapter will interpret the findings of each of the specific hypotheses in relation to previous research literature that was reviewed in the introductory chapter. The clinical implications of the current study will then be discussed. Finally, limitations of the current study will also be considered and directions for future research will be highlighted.

4.2 Research Hypotheses

Table 20 provides summary information about each specific hypothesis and the corresponding results.

4.2.1 Hypothesis One

Women will report higher levels of perceived stress than men during pregnancy.

The hypothesis that women will report higher levels of perceived stress than men during pregnancy was confirmed according to total scores on the Perceived Stress Scale (Cohen et al. 1983). This finding was consistent with previous studies that have reported that women have perceived becoming a parent as more stressful than men (Terry, 1991). There is a possibility that this finding reflects a greater amount of adjustment required by women during pregnancy. Mothers generally seem to undergo more changes during the transition than fathers possibly due to the extensive physical involvement of the mother. However, as there were insufficient numbers in the sample, it was not possible to break down the analysis into sub-groups of pregnancy related stress and stress unrelated to pregnancy, consequently it was not possible to reach any firm conclusions about the extent to which pregnancy itself was the source of greater stress for women or whether other sources of stress explained higher reported stress levels in women in comparison with men in the study.

Previous research has also reported that for the majority of women, pregnancy and the arrival of a child are not perceived as severely stressful (Elliott et al. 1985; Norbeck & Tilden, 1983). However, there is also considerable support to suggest that new parenthood may be interpreted as stressful by some individuals (Cronenwett & Kunst-Wilson, 1981). Acknowledging individual differences and differences in resources that were perceived to be available, it was expected that not everyone would report feeling stressed. According to Lazarus (1999), the amount of stress experienced is likely to vary considerably among expectant parents. This was found to be the case in the current study, with a range of levels of stress being reported by participants. This finding reflects the nature of the transactional model of stress whereby characteristics of the individual influence and/or mediate their experience through the use of cognitive, emotional, social and behavioural resources (Lazarus & Folkman, 1984).

Discussion

In addition, the wider research literature that has examined gender differences in stress research has concluded that women appear to be more vulnerable than men to the effects of stress, although it remains unclear why this is so (Bebbington et al. 1981; Dohrenwend & Dohrenwend, 1974; Kessler et al. 1985; Wethington et al. 1987). A variety of arguments have been put forward to explain this gender difference including different coping styles (Hobfoll et al. 1996). Research has suggested that men use more problem-focused strategies in response to stress whereas women use more emotion-focused strategies. Unfortunately, coping strategies were not assessed in the current study, however it is important to note that problem-focused strategies are thought to facilitate greater adaptation to stressful experiences than emotional focused strategies (Terry, 1991). This may provide another possible explanation for higher levels of reported stress in women.

It was interesting that the Perceived Stress Scale mean scores for the current sample were lower than the scores obtained in the validation sample of college students, suggesting that the current sample of pregnant women and their partners reported on average, less stress than the college students. Possible explanations for this finding may be that the relatively small self-selected sample that took part in the current study, may have felt able to do so because of low levels of stress. It is not possible to know the amount of stress present in the larger population of expectant parents who were eligible to take part in the study, however, it could be hypothesised that higher levels of stress may have contributed to their decision not to participate. Also, the current sample were all married or co-habiting; the stability that this provided may have counteracted any stress that may have been present.

The results of this hypothesis suggest that whilst women reported higher levels of stress than men, overall average levels of reported stress were lower than reports by the college student PSS validation sample. This finding supports previous conclusions that for the majority of new parents, the transition is not interpreted as severely stressful, but for some individuals higher levels of stress are reported. This is reflected in the range of stress reported by different people in the current study. Whether reported stress is related or unrelated to pregnancy requires further investigation.

Table 20.
Summary of Hypotheses and Corresponding Results.

<i>Hypothesis</i>	<i>Results</i>
One: Women will report higher levels of perceived stress than men during pregnancy.	Women reported significantly higher levels of perceived stress than men.
Two: (a) Women will report more symptoms of psychological distress and depression than men during pregnancy.	(a) Women reported significantly higher levels of psychological distress and depression than men.
(b) There will be evidence of co-morbidity of symptoms of psychological distress and depression in couples.	(b) Significant positive relationships between couples scores on psychological distress and depression were found
Three: (a) There will be a positive linear relationship between stress and psychological distress/depression	(a) Significant positive relationships were found between levels of stress and levels of psychological distress and depression.
(b) This relationship will be stronger in female participants.	(b) The positive relationships between stress, psychological distress and depression were stronger for women.
Four:(a) There will be a negative relationship between social support (quality of support and satisfaction with support) and stress and psychological distress.	(a) No significant negative relationships between social support and stress and social support and psychological distress/depression were found.
(b) This relationship will be stronger in female participants.	(b) When males and females were analysed separately, no significant negative relationships were identified. Consequently, it was not possible to assess whether the relationships were stronger for women than men.
(c) There will also be a negative relationship between levels of satisfaction with the partner relationship and psychological distress and depression scores.	(c) Significant negative relationships between relationship satisfaction and psychological distress and depression were documented. These findings were reported on all measures for the women and all bar the measure of depression for the men.
(d) There will be significant gender differences in the size of support network, quality of social support and satisfaction with support.	(d) No significant gender differences in network size, quality of social support and satisfaction with social support were found.
Five: Perceived stress, satisfaction with social support, and satisfaction with partner relationships will account for the variation in individual's reported symptoms of psychological distress and depression. Of these, satisfaction with social support will account for the largest proportion of the variance.	Stepwise multiple regression analysis on the whole sample identified perceived stress and satisfaction with the partner relationship as predictors of psychological distress (56% of the variance explained) and perceived stress and quality of social support as predictors of depression (60% of the variance explained). Satisfaction with social support did not account for the largest proportion of the variance.

4.2.2 Hypothesis Two

(a) Women will report more symptoms of psychological distress and depression than men during pregnancy. (b) There will be evidence of co-morbidity of symptoms of psychological distress and depression in couples

The hypothesis that women will report more symptoms of psychological distress and depression than men during pregnancy was confirmed according to total scores on the General Health Questionnaire (Goldberg, 1992) and the Edinburgh Postnatal Depression Scale (Cox et al. 1987). This finding was consistent with previous studies that have documented gender differences in the levels of reported psychological distress during the transition to parenthood, with men consistently reporting fewer symptoms of psychological distress during pregnancy and postpartum than women (Cameron et al. 1996; Fawcett & York, 1986).

Fifty eight percent of the female participants and 28% of the male participants scored above the cut-off of 3 using the binary scoring method on the GHQ-12, indicating the presence of clinical disorders. This finding seems quite high (particularly for women in the sample) and would require further investigation. Caution needs to be exercised when considering a self-report measure in isolation; confirmation of this finding would need to be obtained, possibly through the use of clinical diagnostic interviews.

The majority of participants did not exceed the cut off points that were set to indicate the presence of minor or major depression on the Edinburgh Postnatal Depression Scale. However, 6.9% of the male participant's exceeded the cut-off threshold of 9/10, and 18.4% of the female participants exceeded the cut-off threshold of 12/13 suggesting the presence of minor or major depression. These findings are comparable to reported prevalence rates in other studies where marked gender differences in clinically significant depressive illness were reported (Areias et al. 1996; Lane et al. 1997). Different prevalence rates of reported depression during the transition to parenthood have been documented. The varying rates are likely to reflect the different methodologies that have been utilised, timing of the research and the composition of the samples. The prevalence rates in the current study may also be partially attributed

to the measure used, the time frame of the research and characteristics of the sample. In general population studies the rates of reported depression in samples of pregnant women has ranged from 7-12% (Cooper & Murray, 1997 *cited in* Durkin, Morse & Buist, 2001) suggesting that similar numbers of women may be affected by prenatal depression as postnatal depression (Milgrom et al. 1999).

The findings of the current study support findings from previous parenthood research that whilst women tend to report significantly higher levels of symptoms of distress and depression, a substantial minority of men are also likely to experience symptoms of distress (Condon, 1987; Raskin et al. 1990). During pregnancy, there does appear to be a minority group of men and women who experience difficulties, however for the majority of expectant parents, pregnancy is a time of good psychological adjustment.

In addition, the wider research literature that has examined rates of reported psychological distress has documented gender differences. Lower rates of mood disorder have consistently been documented in men, and women have been identified as being at greater risk of developing a depressive illness, with clinical depression generally being more prevalent in females than males (American Psychiatric Association, 1994). These findings may provide some explanation for the higher level of reported symptoms in female participants in the current study.

Furthermore, gender differences in the reporting of symptoms have been documented. According to Wilhelm and Parker (1994), women are more likely than men to report depressive symptoms. Adult women are also twice as likely as men to report extreme levels of psychological distress (Kessler & McRae, 1981). This may also provide some explanation for the higher rates of distress and depression reported by female participants. The documented gender differences may reflect genuine differences in symptoms or they may reflect underreporting of symptoms by men, or alternatively men may express symptoms of distress/stress via alternative means e.g. alcohol consumption (Matthey et al. 2000).

The hypothesis that there will be evidence of co-morbidity of symptoms of psychological distress and depression in couples was also confirmed. As one member

of the couple's psychological distress score or depression score increased, so did the psychological distress score or depression score of the other member of the couple. Although research evidence of co-morbidity of psychological symptoms within couples has been mixed, the finding of the current study lends support to some previous studies that have found significant associations between depression in mothers and depression in fathers (Ballard et al. 1994; Dudley et al. 2001; Harvey & McGrath, 1988; Lovestone & Kumar, 1993; O'Hara, 1985).

4.2.3 Hypothesis Three

(a) There will be a positive linear relationship between stress and psychological distress/depression. (b) This relationship will be stronger in female participants.

The hypothesis that there will be a positive relationship between stress and psychological distress and depression was confirmed according to relationships between the Perceived Stress Scale (Cohen et al. 1983), the General Health Questionnaire-12 (Goldberg, 1992) and the Edinburgh Postnatal Depression Scale (Cox et al. 1987). This finding was consistent with previous studies in the wider research literature that have documented positive linear relationships between levels of stress and levels of psychological distress. Stressful life changes have been found to have negative consequences upon both psychological and physical well-being (Sarason et al. 1985). However it is important to recall that only a minority group of people develop significant psychological distress during times of stress and that stressful life experiences that are perceived as negative or threatening are likely to result in more psychological distress than life events that are perceived as positive (Brown & Harris, 1978; Cohen & Williamson, 1991; Thoits, 1995). Clear evidence has been documented in previous research that posits that the majority of people, who experience events that are perceived as stressful, do not develop psychological disorders, but varying degrees of psychological distress have been reported (Kessler et al. 1985). The current study supports these previous findings.

In relation to parenthood, a small proportion of women who have a baby, who have reported high levels of perceived stress (whether related or unrelated to pregnancy)

have been identified as being more vulnerable to symptoms of psychological distress and possible psychological disorder. Several studies have documented a positive linear relationship between stress and postpartum depression in women (Arieas et al. 1996; O'Hara, 1986; Paykel et al. 1980).

The positive linear relationship between stress and psychological distress and depression was found to be stronger overall amongst female participants. A possible explanation for this finding maybe that women are typically socialised to be community orientated and socialised into accepting responsibility for their family's emotional well-being. This may explain why men show less psychological distress/depression in response to stressful circumstances as women have been found to take on the emotional burdens of their partners (Hobfoll et al. 1996). Alternative explanations as mentioned earlier may be that men and women use different coping strategies to deal with stress and that problem-focused coping may be more effective at reducing the deleterious effects of stress than emotion-focused coping.

4.2.4 Hypothesis Four

(a) There will be a negative relationship between reported social support scores (quality of support and satisfaction with support) and reported stress and psychological distress/depression scores (b) This relationship will be stronger in female participants. (c) There will also be a negative relationship between levels of satisfaction with the partner relationship and psychological distress and depression scores. (d) There will be significant gender differences in the size of support network, quality of social support and satisfaction with support.

The hypothesis that there will be a negative relationship between reported social support scores (quality of support and satisfaction with support) on the Family Support Scale (Dunst et al. 1984) and reported stress and psychological distress and depression scores was not confirmed. This result was inconsistent with previous research that has examined motherhood and identified that whilst stress can lead to depression during this period, social support has proved to be an effective resistance factor to the effects of stress. Social support has been related to lower stress, anxiety and depression levels during pregnancy providing evidence for the buffering model of

social support (Kalil et al. 1993; Norbeck & Tilden, 1983; O'Hara, 1986). Consistent findings have also shown that social support facilitates greater psychological well-being during pregnancy for women regardless of levels of stress, providing evidence for the direct effects model of social support (Dunkel-Schetter et al. 1996). Furthermore, the stress and social support literature in general has found that access to social support can have buffering effects upon stressful experiences and protect against psychological distress (Cassell, 1976; Cobb, 1976; Cohen & Wills, 1985).

An interesting finding was that contrary to the predicted hypothesis, there were positive relationships documented between the Quality of Support dimension of the Family Support Scale and the Edinburgh Postnatal Depression Scale that were approaching significance ($p = 0.05$), and the Size of Support Network dimension on the Family Support Scale and the Edinburgh Postnatal Depression Scale that were significant ($p = 0.01$). Despite the positive relationship between quality of support and depression only being a trend that would require further investigation, it is important to consider possible explanations for the documented positive relationship found in the current study, that was contrary to the predicted hypothesis.

Some research that has examined the influence of social support upon stress and psychological distress has concluded that social support is not a panacea (Thoits, 1995). Some research has documented that social support is not always perceived as helpful and can have negative effects particularly if it is unwanted or viewed as the wrong type of support. Sometimes the type of support that is offered does not match the type of support required (Thoits, 1995). In addition, social support can have negative effects due to stress contagion where one person's stressful experience impacts upon other members in their social network (Gallagher et al. 1997). Women in particular are thought to access broader networks of social support than men; consequently women are more likely to be exposed to a greater number of stressful experiences (Belle, 1982). Furthermore, social support carries burdens with it or 'costs of caring' (Kessler et al. 1985), whereby people are obligated to provide as well as receive social support. These findings provide a possible explanation for the documented positive relationship between quality of social support and size of support network and depression in the current study.

As the hypothesis that a negative relationship would exist between social support, stress and psychological distress was not confirmed, it was not possible to test whether there were any gender differences in the strength of the relationship. Previous research in the general stress and social support literature has identified gender differences in the appraisal of stress, response to stress and coping mechanisms utilised.

In the current study there was no evidence to support the buffering or direct effects models of social support. No significant main effects or interaction effects were found between the measures of social support, stress, psychological distress and depression. This finding was contrary to previous research where both evidence for buffering and direct models of social support have been reported, and suggests that in the current study, social support as measured by the Family Support Scale was not having any mediating effects upon levels of psychological distress regardless of whether stress was present or absent. Possible explanations for this finding include: the measure of social support selected for the current study may have been inadequate; the reliability alpha co-efficient of the Family Support Scale in the current study was 0.67 which was lower than in the original validation study. Lower reliability of the Family Support Scale may have reduced the probability of demonstrating a main or interaction effect. Also, for the purpose of analysis a post-hoc arbitrary median split of the data was conducted based upon the reported scores of participants in the current sample, which may have affected the result. Completing a median split based upon the potential range of scores obtainable on the measures was considered, however, unfortunately not enough participants would have been allocated to the high stress and high social support categories to enable further analysis. Ideally, participants would have been classified into high and low stress and high and low social support at the outset of the study.

The hypothesis that there will be a negative relationship between levels of satisfaction with the partner relationship and psychological distress and depression was confirmed. This finding was consistent with previous research that has demonstrated that psychological health has been closely linked to marital satisfaction and partner support (Cohen & Wills, 1985). Marital satisfaction has also been found to have a

consistent relationship with psychological health during the transition to parenthood, particularly for mothers (Lederman, 1984).

The hypothesis that there will be significant gender differences in the size of support network, quality of social support and satisfaction with social support was unconfirmed, according to scores on the Family Support Scale (Dunst et al. 1984). This finding is inconsistent with previous research that has reported gender differences in social support utilisation and satisfaction with support (Cohen & Wills, 1985; Gottlieb & Wagner, 1991; Pearlin & McCall, 1990). Women have been reported as making better use of their social support resources than men and being more satisfied with the social support that they receive and reporting social support as being more helpful (Flaherty & Richman, 1989). However, this finding was not supported in the current study. Men have also been reported as having larger social networks than women (Belle, 1987; Sarafino, 1990). Again, these findings were unsupported in the current study.

Previous literature has also identified that the importance of different sources of support may differ for men and women. Partner support and satisfaction with the partner relationship has been consistently documented as extremely important for psychological well-being, particularly for women (Acitelli & Antonucci, 1994; Brown & Harris, 1978). In the current study, the male participants rated partner support as the most helpful source of support whereas women rated formal sources of support (i.e. parents and relatives) as slightly more helpful than partner support. This finding was surprising, as previous research has concluded that partner support is more important for women than men. However, some studies have also documented that men seek the majority of their emotional support from their partners (Cronenwett & Kurst-Wilson, 1981; Dudley et al. 2001). The current study supported this finding.

4.2.5 Hypothesis Five

Perceived stress, satisfaction with social support, and satisfaction with partner relationships will account for the variation in individual's reported symptoms of psychological distress and depression. Of these, satisfaction with social support will account for the largest proportion of the variance.

The hypothesis that perceived stress, satisfaction with social support and satisfaction with partner relationships will account for the variation in individual's reported symptoms of psychological distress and depression was partially confirmed. Perceived stress and satisfaction with the partner relationship explained 56% of the variance in psychological distress scores and perceived stress and quality of social support explained 60% of depression scores. In other studies, quality dimensions of support have also been found to have distinct effects upon psychological outcomes during pregnancy (Dunkel-Schetter et al. 1996). Whilst there was still a substantial amount of variance that remained unexplained, the amount of variance that was explained is relatively high in comparison with other studies. Brown (1986) identified that stress, satisfaction with partner support and family income accounted for only 17% of the variance in men's health, and stress, satisfaction with partner support and history of chronic illness accounted for 30% of the variance in women's health. Morse et al. (2000) identified low social support and a poor partner relationship as significant predictors of distress during pregnancy. Several other studies have identified marital dissatisfaction during pregnancy as a predictor of postnatal illness (Kumar & Robson, 1984; O'Hara et al. 1984; Whiffen, 1988).

The hypothesis that satisfaction with social support will account for the largest proportion of the variance was unconfirmed. This finding differed from previous research where satisfaction with social support has been identified as a significant predictor of distress in parenthood research (Berthiaume et al. 1998; Brugha et al. 1998).

4.3 Summary of Findings in Relation to Previous Literature

Consistent with previous research in this area, the women in the current sample reported significantly higher levels of perceived stress, psychological distress and depression than the men in the current sample. There was also evidence to support the presence of co-morbidity of psychological symptoms of distress and depression within couples. This finding adds to the mixed findings regarding co-morbidity of symptoms reported in previous research. Significant positive linear relationships between stress, psychological distress and depression were also reported, which lends further support to previous research that has concluded that this relationship exists.

Contrary to previous research findings, negative linear relationships between social support, stress, psychological distress and depression were not apparent. Conversely, a trend towards a positive linear relationship between social support and depression was documented; highlighting that social support can have negative effects and is not a panacea for stress and distress. Significant negative linear relationships between relationship satisfaction, psychological distress and depression were found, lending support to previous findings that emphasised the importance of the partner relationship to psychological well-being. Contrary to previous research, no significant gender differences in network size, quality of social support and satisfaction with social support were found. Perceived stress, relationship satisfaction and quality of social support were the strongest predictors of psychological distress and depression during pregnancy.

4.4 Clinical Implications

In light of the findings from the current study, it is important to consider the clinical implications of these findings and to think about ways in which the provision of services can meet the psychological needs of expectant parents.

The findings from the current study have demonstrated that for the majority of expectant parents, no clinical signs of distress and depression were apparent during pregnancy. However, for a minority of expectant mothers and expectant fathers in the current study, levels of psychological distress, depression and stress reported by both men and women have clinical implications. Although the current study and previous studies have concluded that only a minority of mothers and fathers are vulnerable to the development of psychological distress during the transition to parenthood, the incidence of reported psychological distress and depression in mothers and fathers during pregnancy is still concerning, particularly given the possibility of these difficulties continuing during the postpartum.

The conclusions have been mixed in previous parenthood research regarding the extent to which depression during pregnancy is a predictor of postnatal depression (Atkinson & Rickel, 1984; Fergusson et al. 1996; Kumar & Robson, 1984; O'Hara et al. 1984). For some people, depression seems to be maintained, for others depression has reduced by the time the baby is born, for others symptoms of depression occur

Discussion

during the postpartum period only. According to Matthey and colleagues (2000) the percentage of women who are depressed during pregnancy who remain depressed after the birth of the baby ranges from 18 to 75%.

The findings of the current study, highlight the potential risks of a minority of people slipping through the system unnoticed until postpartum when more pronounced distress might develop. In addition, evidence that women who experience stress during pregnancy have significantly higher rates of adverse birth outcomes is also a concern. Higher levels of stress during pregnancy have also been found to relate to postpartum depression (Gallagher et al. 1997). Given the findings of the current study and previous research, perhaps it is important to give as much attention to distress and stress during pregnancy as to postnatal illness in order to ensure that distress and depression during pregnancy is not overlooked.

The vast majority of contact with professional services during the transition to parenthood takes place during the antepartum. Consequently, preventative approaches during pregnancy such as better education regarding the psychological impact and preparation for parenthood in terms of the many adjustments that are involved may reduce the potential long-term costs of distress and costs to the healthcare system.

Current antenatal services consist of a linear approach to care and treatment with a primary focus upon the physical health of the mother and baby. Much less attention is given to psychological issues for mothers and the needs of fathers are often not considered at all. More acknowledgements are gradually being given to fathers in terms of their needs and adjustments during the transition to parenthood. Future service provision may benefit from a systemic approach to antenatal care that incorporates the whole family and their psychological health in addition to the mother and baby's physical health. Viewing the couple as a 'system' under potential stress from the addition of a baby would lead to equal attention being paid to the needs of both partners (O'Hara, 1985).

Parentcraft groups offer a programme of parent education and support. However, the topics that are covered focus primarily upon physical aspects of pregnancy, labour and

birth and caring for a newborn baby. Much less emphasis is placed upon emotional and psychological issues pertinent to individuals and couples (Morse et al. 2000). It may be of use if Parentcraft Groups expanded their agenda to include psychological and emotional aspects in addition to the physical aspects. Parentcraft groups could also incorporate sessions that focus upon relationships with partners, friends and family. Exploration and discussion of parents' expectations, potential sources of stress during pregnancy and postpartum and coping skills e.g. accessing appropriate types of social support may also help to reduce the likelihood of psychological distress occurring for both partners.

The National Service Framework for Children: Getting the right start (Department of Health, 2003) is currently being developed and aims to develop national standards of care for children. The National Service Framework for Children has recognised that healthy children start with healthy mothers therefore the standards will also incorporate maternity services. Prevention and health promotion is a key aspect of the National Service Framework. As a result, community psychology approaches may prove to be a useful way of working in response to the findings of the current study.

The main philosophy of community psychology is that psychological well-being and distress are not solely psychobiological in origin but occur as a result of an interaction between social, economic and psychosocial factors over time (Orford, 1992). Consequently, some of the primary values that underpin community psychology include: consideration of socio-economic issues and the impact that they have upon peoples lives; working with people who are disadvantaged or marginalized by the social system; a collaborative approach which fosters empowerment and peoples sense of personal control over their lives; pro-active, preventative work focused upon health promotion; working at community levels rather than focusing upon individual treatment in order to effect change for more people (Orford, 1992).

Community psychologists could play an important role in preventative and early intervention work with couples who are expecting a baby. Community psychologists could perhaps become involved in Parentcraft Groups, providing the psychological knowledge and skills for the sessional input. Community psychologists may also be better positioned to reach those expectant parents who are not opting in to antenatal

Discussion

services provided by professionals for whatever reason. Community psychologists are in a position where they can offer a service that may be viewed as more accessible, acceptable and non-stigmatising to some people who are expecting a baby. It would be helpful to identify during pregnancy those who might benefit from early interventions designed to reduce the effects of stress, improve social support and reduce emotional distress. Community psychology involvement could help expectant parents to take steps to prevent distress/stress. Couples expecting a baby could be taught stress management skills, and skills regarding accessing and utilising social support. Research has suggested that women who are adequately supported during pregnancy experience more positive psychological and physical outcomes during labour, delivery and postpartum than women who lack social support during pregnancy (Collins et al 1993; Cutrona 1984). Consequently, helping expectant parents to access social support may help to improve postnatal outcomes.

In addition, within primary care settings, people who present with symptoms of distress and stress could be routinely asked about whether they are expecting a baby. This may help to identify people who may benefit from interventions designed to reduce the deleterious effects of stress, low social support and emotional distress.

Recognising the presence of co-morbidity of symptoms, distress in one partner is likely to add to the distress in the other member of the couple and reduce the amount of partner support available to one another. This finding is particularly relevant within Childbearing and Mental Health Services that are treating women for postnatal illness. It is important to focus upon all members of the family not just the mother and baby as it is highly possible that the father may also be experiencing difficulties. For those women who are identified as being at risk of developing postnatal illness, preventative work in this context could be undertaken. Educational groups could be conducted during the evenings to make attendance more accessible for fathers.

Finally, it is important to recognise fathers' adjustment needs in addition to mothers, instead of viewing fathers solely as 'support providers' to their partners. Father focused discussion groups could be set up where fathers could meet and share different aspects of fatherhood; support from other fathers may help to alleviate any stress or distress. The exploration and discussion of topics such as parental identity,

roles and feelings about being a father could be facilitated. Focusing upon fathers in addition to mothers may benefit fathers and also their partners, as it is recognised that partner support is extremely important; if fathers' adjustment needs are being met, they will be better able to provide support to their partners.

4.4 Limitations of the Study

Recognising that all research can be susceptible to limitations, the next section considers limitations of the current study. Sample, measurement and design limitations were identified. Some of these limitations may also provide possible explanations for some of the findings in the current study that were contrary to previous research findings.

4.5.1 Sample

The participants in the current study formed a self-selected non-random sample and this needs to be considered when examining the results. Several factors relating to this particular research sample were important to bear in mind. Firstly, the size of the sample was relatively small in comparison with previous research studies that have examined pregnancy and parenthood. Retrospective power analysis suggested that the sample was large enough to conduct parametric analysis, however, the larger the sample the stronger the result. This is important to bear in mind when examining the results. Secondly, the sample was comparatively homogeneous regarding variables such as socio-economic status with the majority of participants falling into social class categories II and III. One of the major criticisms about previous parenthood research has been that many research samples have consisted of middle class participants.

Parenthood researchers have since begun to examine the experiences of people in socially disadvantaged positions, as people from lower class backgrounds have been shown to have higher rates of psychiatric illness and psychological distress in the general population. Stressful life experiences have also been identified as having a greater capacity to lead to mental health problems in lower class people rather than middle class because lower class people are less able to access supportive relationships (Kessler et al. 1985; Thoits, 1995). Hobfoll and colleagues (1995) looked at a sample of 192 economically impoverished inner city African American and European American women during pregnancy and postpartum. The rates of reported

Discussion

depression were approximately double that found in middle class samples. As the sample in the current study were predominantly classified as middle class, one might speculate that had the sample been more disadvantaged, participants may have been likely to experience a greater number of stressors and higher levels of psychological distress.

Thirdly, the participants in the study were all attending Parentcraft Groups, which has implications for the findings. Participants had all chosen to opt in to the professional antenatal service provided by the hospital. Preparing for parenthood through education, acquired knowledge, information, and reassurance may have reduced participants' feelings of stress and psychological distress. Attendance at the group may also have facilitated the adjustment to parenthood via the sharing of experiences and access to a social support system of similar people.

Unfortunately, no information was available about (a) couples expecting a baby who were not attending Parentcraft Groups or (b) couples expecting a baby who attended the Parentcraft Groups but chose not to participate in the current study. Consequently, it is not known whether non-respondent expectant parents were more stressed/distressed and subsequently felt too stressed/distressed to take part or whether they were adjusting much better and not feeling stressed/distressed and subsequently possibly less motivated to participate.

Fourthly, it is typically difficult to recruit fathers to parenthood research. The findings of the current study, particularly in reference to fathers, probably reflect the characteristics of the men who had chosen to actively participate in their partner's pregnancy by attending Parentcraft classes. Those fathers, who took part in the current study, may have been more open and more willing to share their experiences than is typical for fathers generally.

Fifthly, the ethnic composition of the sample was biased towards Caucasian expectant parents. Whilst participants from ethnic minority groups were not excluded from the current study, only a small proportion of the total sample comprised people from different ethnic origins. Given the ethnic composition of the city of Leicester, it was doubtful that ethnic minority groups were fairly represented in the current study. Due

to the small numbers of participants from ethnic minority groups, cross-cultural analysis was not possible in the current study. However, it was acknowledged that ethnic and cultural backgrounds may result in different meanings being held about pregnancy and the forthcoming arrival of the baby. This may influence how events are interpreted and also influence how social support is defined, perceived, given and received (Rini et al. 1999). It is important to bear in mind that participants from ethnic minority groups were included in the analysis, but that this may have acted as a confounding factor, recognising that cultural difference may affect participant's experiences.

Finally, the proportion of couples who reported a previous history of miscarriage consisted of a third of the overall sample. The specific stress associated with concerns regarding miscarriage may have differed to other sources of stress; consequently, including couples that reported a history of prior miscarriage may have acted as a confounding factor in the analysis.

For the reasons presented above, the results should be interpreted with caution. The generalisability of the findings was also restricted due to the reasons given.

4.5.2 Measures

Several limitations regarding the method of measurement of the concepts that the study set out to examine and the specific measurement tools used were identified. Firstly, the measurement method consisted solely of self-report measures. Caution regarding the interpretation of results is necessary when employing only this method as symptom reporting can be influenced by a variety of physiological, personal, social and cultural factors (Cohen & Syme, 1985). Also, the accuracy of self-report measures regarding the presence or absence of depression or other psychological disorders is less reliable when used in isolation. Self-report measures of depression/clinical distress tend to result in higher rates of depression being reported. Further caution is warranted as contamination across the measures may have occurred. If participants were experiencing distress, they may have evaluated their levels of stress more negatively and in turn rated their social relationships more negatively (Kessler et al. 1985).

Discussion

Secondly, with regard to the measures used in the study, most of them were not standardised on the target sample. The Perceived Stress Scale (Cohen et al. 1983), the GHQ-12 (Goldberg, 1992), the Family Support Scale (Dunst et al. 1984) and the Relationship Assessment Scale (Hendrick, 1988) had not been standardised upon the target sample and subsequently there was no normative data available. Although, fairly robust reliability was found when reliability checks were completed on these measures prior to analysis, the results should be interpreted with caution.

Thirdly, in retrospect, the Family Support Scale may not have been the most appropriate measure of social support for the current sample. The Family Support Scale was originally designed for use with parents who have children with developmental disabilities. Consequently, some of the sources of support that were asked about in the measure were not relevant to the sample in the current study e.g. school; nursery; early intervention programmes. As a result, participant's scores would have been affected by the inclusion of irrelevant items and this may partially explain the lack of significant findings when this measure was included in the analysis.

Another limitation of the Family Support Scale is that it is a structural measure of social support and fails to examine the functional aspects of social support. Functional measures are thought to provide stronger predictors of health and adjustment as they tap into representations of perceived support rather than received support, which structural measures examine (Cohen & Syme, 1985). Another drawback of the Family Support Scale is that it is a retrospective measure whereby it asks respondents about 'past use' of social support. As a result, participant's ratings may reflect their levels of psychological distress, which may increase the use of support (Cohen & Wills, 1985). With hindsight, the Social Support Questionnaire (Sarason et al. 1985) may have been a more appropriate measure of social support, as it focuses upon perceived rather than received support.

Fourthly, most parenthood research that has examined depressive symptoms during pregnancy and the postpartum has used the Edinburgh Postnatal Depression Scale as the measure of depression. It was deemed appropriate to use this measure for the current study, particularly as it has been validated for use during pregnancy and with

fathers. However, the Edinburgh Postnatal Depression Scale is not reported as being as effective at detecting minor depression as major depression in antenatal samples (Cox et al. 1987). However, in comparison with the Centre for Epidemiological Scale for Depression (Radloff, 1977) and the Beck Depression Inventory (Beck et al. 1987) these measures are not very good at detecting minor depression either (Whiffen, 1988b). Furthermore, the different recommended cut off scores that have been reported in various research that has used the Edinburgh Postnatal Depression Scale may reflect the characteristics of the sample or it may reflect that the Edinburgh Postnatal Depression Scale is not a perfectly reliable measure and caution should be exercised when using it.

A final note of caution relates to the potential social desirability of responses from participants, particularly ratings on the Relationship Assessment Scale. Participants may have been conscious of how their relationship appeared to others, including their partner, and may have wished to present their relationship in a positive light. As participant's completed the booklet of measures at home there was no guarantee that the questions were answered independently and were not subject to social desirability effects.

4.5.3 Method of Investigation

The current study consisted of a cross sectional design, which is considered to be a weaker design when compared with longitudinal studies. As data was collected at one time point only, it was not possible to conclusively state the causation and direction of relationships i.e. whether stress and social support played a role in the beginning of psychological symptoms or whether initial mental health difficulties subsequently affected perceived stress and social support. There was also no control group for the current study as one of the primary aims of the study was to compare men with women. Consequently, it was felt that a control group was not a priority. However, in order to make the study more robust, ideally a control group of couples that were not expecting a baby would have been included in the study, in order to compare their responses. Much of the analysis consisted of correlations, which are more vulnerable to threats to internal validity as the relationship may be a result of alternative explanations. There are risks that the significant linear relationships that were

identified in the findings may be spurious i.e. a third variable may account for the association.

The current study also failed to examine personality characteristics and coping styles. Lazarus (1999) has stated that both a stressful stimulus and a vulnerable person are required in order for a reaction to stress to occur. However, despite the popularity of the transactional model of stress, most research continues to be conducted within a stimulus-response model of stress, as in the case of the current study.

Finally, examining the concepts of stress and social support in relation to health has its own methodological problems. Stressful events can disrupt social relationships therefore attempts to estimate the effect of support on stress-illness relationships can be confusing (Kessler et al.1985). Potential contamination of support and distress can occur whereby people may evaluate their social relationships more negatively if they are experiencing symptoms of distress.

4.6 Directions for Future Research

As stated in the introductory chapter, numerous studies have been conducted that have examined the influence of stress and social support upon psychological health. Despite the number of studies, there is no agreement across researchers upon how to define the concepts of stress and social support. Furthermore, different measures have been devised and used in research. Both of these factors, makes it difficult to compare studies. In addition to this, parenthood research that has examined stress and social support, has examined these concepts at different time points during pregnancy and postpartum. Furthermore, there have been large differences in parity, race, socio-economic status, and marital status in parenthood research samples.

It is important that future research in this area continues to use precise definitions of concepts and that measures of these concepts are used consistently across studies to allow further comparison. Further exploration of psychological and social factors that can modify the impact of stress upon expectant parents is important, again ensuring consistency in terms of parity and timing of the research data collection. In another study one could be more specific regarding the sources of stress during pregnancy i.e.

conduct investigations upon expectant parents who report only pregnancy related stress. Unfortunately, there was not enough data in the current study to do in depth analysis upon participants who reported only pregnancy related stress.

It is also important to conduct parenthood research examining the concepts of stress, social support and psychological distress with people from different ethnic minority groups and different socio-economic backgrounds, and to gain an understanding of the ecological contexts in which people live. People from poor backgrounds are likely to experience higher levels of stressful events, have less control over these events and possess a greater vulnerability to the detrimental effects of stress (Hobfoll et al. 1995). Strickland (1986) found that black working class expectant fathers reported significantly higher levels of psychological symptoms during pregnancy than white middle class expectant fathers. Furthermore, as there have been huge changes in the definition of parenthood over the years, it is important to conduct research that includes the many different permutations of parenthood, including single parents, stepparents, etc.

The transactional model of stress (Lazarus & Folkman, 1984) represents a common idea about the stress process and how it works. Consequently, a common research design is also emerging. At the centre of the transactional model of stress is the idea that exposure to stress triggers a process of adaptation, which takes place over time, and is modified by 'structural' factors and personality traits/vulnerabilities. Consequently, there is growing recognition amongst researchers that in order to study the stress process, longitudinal research designs are necessary (Kessler et al. 1985). Longitudinal designs avoid confounding between predictor and outcome variables e.g. stress and psychological distress. Repeated measures of social support throughout the transition to parenthood would also provide a more valid indicator of available support throughout the course of a stressful transition. Longitudinal designs also enable causal interpretations regarding the direction of relationships to be possible. The relationship between social support and health remains unresolved although most studies have suggested that most of the direction is social support to health and not vice versa. The current study was originally devised incorporating a longitudinal design, but unfortunately due to the necessary practicalities and time required for a longitudinal study, it was not possible to pursue this research design.

Discussion

As many researchers view the concept of social support as a multi-dimensional concept, it is important that future research examines all aspects of social support including the function, quantity, quality, source and structure. Until all the multi-dimensional aspects of social support are examined altogether in one study, little will be learned about the mechanism by which social support operates to facilitate adjustment to life changes (Thoits, 1982). Furthermore, there is evidence that different types of support have varying effects upon different outcomes, for example, instrumental support has been found to be particularly valuable during controllable, stressful experiences such as having a baby (Cutrona, 1984).

Many of the studies that have examined stress and social support have used self-report measures. As there is only moderate agreement between social support measures and clinical diagnosis, it is important to assess symptoms using both self-report measures and interviews in order to clarify clinical diagnoses. Many studies reviewed in the introductory chapter have included standardised interviews in their research. Unfortunately, only self-report measures were used in the current study. The inclusion of standardised interviews with more precise diagnostic criteria would generally result in lower estimates of disorder during pregnancy and the postpartum.

Qualitative studies are also an important direction for future research as self-report measures and even semi-structured diagnostic interviews may fail to identify some of the key concerns for mothers and fathers that may relate to psychological distress.

Finally, an area that was not examined in the current study but that warrants further investigation is an examination of the cognitive appraisal of pregnancy. It is important to conduct research that identifies how individuals construe pregnancy at a cognitive level. Individuals are likely to feel differently about expecting a baby. Feelings may vary from euphoria and excitement to ambivalence and concern. Various factors are likely to influence expectant parents thoughts and feelings about becoming a parent including: timing, available resources (particularly financial), relationship with own parents and their own experience of childhood, and partner relationships. Individuals will have their own cognitive beliefs about themselves as a person and their perceived parental abilities based on their cognitive beliefs. For some individuals, unhelpful ways of thinking about their circumstances may occur. For

Discussion

example, an individual may believe that they will not be able to cope and may view the experience as overwhelming and isolating. Another individual may believe that they will cope but when the slightest thing goes wrong, be critical of themselves and interpret it as a sign that they are not coping. In terms of interventions, cognitive therapy would be a useful way to challenge negative beliefs about becoming a parent and help individuals to reframe things. Individuals could be encouraged to examine the evidence for their negative belief and experiments could be set up to test out beliefs. Within the Specialist Childbearing and Mental Health services, it is routine practice to ask questions about an individual's cognitive appraisal of pregnancy as part of an assessment.

4.7 Conclusions

The findings of this study were predominantly consistent with previous research findings in this area, suggesting that for the majority of expectant parents, pregnancy is a time of good psychological adjustment. However, for a minority of expectant mothers and fathers, clinically significant levels of stress, psychological distress and depression were present during pregnancy. Gender differences were identified with expectant mothers experiencing higher levels of stress, distress and depression. Unfortunately the causal explanation for these findings remains unclear. A surprising finding related to the lack of evidence for the mediating role of social support in relation to stress and distress. This finding was contrary to past research that has examined the role of social support. Perceived stress was found to be a consistently important explanatory variable for psychological distress and depression, although it was granted that a large proportion of the variance continues to remain unexplained.

A positive contribution of the current study was the provision of information regarding fathers experiences, which can add new information to the small but growing body of research evidence that has included fathers in parenthood research. The response rate by fathers in the current study was relatively high; suggesting that fathers' valued the opportunity to share their experiences and possibly those fathers' appreciated being included in parenthood research, thus validating their importance. It is hoped that information provided by this study would encourage professional services to consider the needs of both mothers and fathers.

REFERENCES

References

- Abidin, R. R. (1995). *Parenting Stress Index*. (3rd edn). USA: Psychological Assessment Resources, Inc.
- Acitelli, L. K. & Antonucci, T. C. (1994). Gender differences in the link between marital support and satisfaction in older couples. *Journal of Personality and Social Psychology*, 67, 688-698.
- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th edn). Washington D.C: APA.
- Areias, M., Kumar, R., Barros, H. & Figueiredo, E. (1996). Correlates of postnatal depression in mothers and fathers. *British Journal of Psychiatry*, 169, 36-41.
- Atkinson, A. K. & Rickel, A. (1984). Post-natal depression in primiparous parents. *Journal of Abnormal Psychology*, 93, 115-119.
- Ballard, C., 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.
- Battles, R. G. (1988). Factors influencing men's transition into parenthood. *Neonatal Network*, (April), 63-66.
- Bebbington, P., Hurry, J., Tennant, C., Sturt, E. & Wing, J. K. (1981). Epidemiology of mental disorders in Camberwell. *Psychological Medicine*, 11, 561-579.
- Beck, A. T., Steer, R. A. & Brown, G. K. (1987). *Beck Depression Inventory -- II: Manual*. USA: The Psychological Corporation.
- Belle, D. (1982). The stress of caring: Women as providers of social support. In L. Goldberger & S. Breznitz (Eds.) *Handbook of Stress: Theoretical and Clinical aspects*. (pp.496-505). New York: Free Press.

References

- Belle, D. (1987). Gender differences in the social moderators of stress. In R. C. Barnett, L. Biener & G. K. Baruch (Eds.) *Gender and Stress*. (pp.257-277). New York: Free -Press.
- Berkman, L. & Syme, S. L. (1979). Social networks, host resistance, and mortality: A nine-year follow up study of Alameda County residents. *American Journal of Epidemiology*, 109, (2), 186-204.
- Berthiaume, M., David, H., Saucier, J-F. & Borgeat, F. (1998). Correlates of prepartum depressive symptoms: a multivariate analysis. *Journal of Reproductive and Infant Psychology*, 16, 45-56.
- Billings, A. G. & Moos, R. H. (1981). The role of coping resources and social support in response to the stress of life events. *Journal of Behavioural Medicine*, 4, 139-158.
- Billings, A. G. & Moos, R. H. (1982). Stressful life events and symptoms: A longitudinal model. *Health Psychology*, 1, 99-117.
- Bolton, H. L., Hughes, P. M., Turton, P. & Sedgwick, P. (1998). Incidence and demographic correlates of depressive symptoms during pregnancy in an inner London population. *Journal of Obstetrics and Gynaecology*, 19, 202-209.
- Brockington, I. (1996). *Motherhood and Mental Health*. Oxford: Oxford University Press.
- Brown, G. W. & Harris, T. (1978). *Social Origins of Depression: A study of psychiatric disorder in women*. London: Tavistock Publications.
- Brown, M. A. (1986). Social support, stress, and health: A comparison of expectant mothers and fathers. *Nursing Research*, 35, 72-76.
- Brugha, T. S., Sharp, H. M., Cooper, S. A., Weisender, C., Britto, D., Shinkwin, R., Sherrif, T. & Kirwan, P. H. (1998). The Leicester 500 Project: Social support and the

References

development of postnatal depressive symptoms, a prospective cohort survey. *Psychological Medicine*, 28, 63-79.

Cameron, R. P., Wells, J. D. & Hobfoll, S. E. (1996). Stress, social support and coping in pregnancy: Taking gender and ethnicity into account. *Journal of Health Psychology*, 1, (2), 195-208.

Carveth, W. B. & Gottlieb, B. H. (1979). The measurement of social support and its relation to stress. *Canadian Journal of Behavioural Science*, 11, (3), 179-188.

Cassell, J. (1976). The contribution of the social environment to host resistance. *American Journal of Epidemiology*, 104, (2), 107-122.

Clark-Carter, D. (1997). *Doing Quantitative Psychological Research: From Design to Report*. Hove: Psychology Press Limited.

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.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38, 300-314.

Cohen, S., Kamarck, T. & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behaviour*, 24, 385-396.

Cohen, S. & Syme, S. L. (1985). Issues in the study and application of social support. In S. Cohen & S. L. Syme (Eds.) *Social Support and Health*. (pp.3-22). San Diego, CA: Academic Press.

Cohen, S. & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In A. Spacapan and A. Oskamp (Eds.) *The Social Psychology of Health*. California: Sage.

References

- Cohen, S. & Williamson, G. M. (1991). Stress and infectious disease in humans. *Psychological Bulletin*, 109, 5-24.
- Cohen, S. & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310-357.
- Collins, N. L., Dunkel-Schetter, C., Lobel, M. & Scrimshaw, S. C. M. (1993). Social support in pregnancy: Psychosocial correlates of birth outcomes and postpartum depression. *Journal of Personality and Social Psychology*, 65, (6), 1243-1258.
- Condon, J. T. (1987). Psychological and physical symptoms during pregnancy: A comparison of male and female expectant parents. *Journal of Reproductive and Infant Psychology*, 5, 207-219.
- Coolican, H. (1996). *Introduction to Research Methods and Statistics in Psychology* (2nd edn). London: Hodder & Stoughton.
- Cox, J. L. (1986). Origins and development of the 10-item Edinburgh Postnatal Depression Scale. In J. L. Cox (Ed.). *Postnatal Depression: A Guide for Health Professionals*. (pp.115-124). Edinburgh: Churchill Livingstone.
- Cox, J. L., Holden, J. M. & Sagovsky, R. (1987). Detection of postnatal depression: Development of the Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*, 150, 782-786.
- Cronenwett, L. R. & Kunst-Wilson, W. (1981). Stress, social support and the transition to fatherhood. *Nursing Research*, 30,(4), 196-201.
- Cutrona, C. E. (1982). Non-psychotic postpartum depression: A review of recent research. *Clinical Psychology Review*, 2, 487-503.
- Cutrona, C.E. (1984). Social support and stress in the transition to parenthood. *Journal of Abnormal Psychology*, 93, (4), 378-390.

References

Department of Health (2003). *Getting the right start: The National Service Framework for Children*. London: The Stationery Office.

Derogatis, L. R. (1994). *SCL-90-R, Administration, Scoring and Procedures Manual -1 for the revised version*. (3rd edn). Minneapolis MN: National Computer Systems.

Dohrenwend, B. S. & Dohrenwend, B. P. (Eds.) (1974). *Stressful life events: Their nature and effects*. New York: Wiley.

Drake, M. L., Verhulst, D. & Fawcett, J. (1988). Physical and psychological symptoms experienced by Canadian women and their husbands during pregnancy and the postpartum. *Journal of Advanced Nursing*, 13, 436-440.

Dudley, M., Roy, K., Kelk, N. & Bernard, D. (2001). Psychological correlates of depression in fathers and mothers in the first postnatal year. *Journal of Reproductive and Infant Psychology*, 19, No. 3, 187-202.

Dunkel-Schetter, C., Sagrestano, L. M., Feldman, P. & Killingsworth, C. (1996). Social support and pregnancy: A comprehensive review. In G. R. Pierce, B. R. Sarason & I. G. Sarason (Eds.) *Handbook of social support and the family*. (pp.375-412). New York: Plenum Press.

Dunst, C. J., Jenkins, V. & Trivette, C. M. (1984). The Family Support Scale: Reliability and Validity. *Journal of Individual, Family and Community Wellness*, 1, 45-52.

Durkin, S., Morse, C. & Buist, A. (2001). The factor structure of prenatal psychological and psychosocial functioning in first-time expectant parents. *Journal of Reproductive and Infant Psychology*, 19, (2), 121-134.

Dyer, D. (1976). Parenthood as a crisis: A re-study. In R. H. Moos (Ed.) *Human Adaptation: Coping with Life Crises*. Lexington, Massachusetts: D. C. Heath & Co.

References

- Elliott, S. A., Rugg, A. J., Watson, J. P. & Brough, D. I. (1983). Mood changes during pregnancy and after the birth of a child. *British Journal of Clinical Psychology*, 22, 295-308.
- Elliott, S. A., Watson, J. P. & Brough, D. I. (1985). Transition to parenthood by British couples. *Journal of Reproductive and Infant Psychology*, 3, 28-39.
- Fawcett, J. & York, R. (1986). Spouses' physical and psychological symptoms during pregnancy and the postpartum. *Nursing Research*, 35, (3). 144-148.
- Fergusson, D. M., Horwood, L. J., Thorpe, K. & the ALSPAC Study Team. (1996). Changes in depression during and following pregnancy. *Paediatric and Perinatal Epidemiology*, 10, 279-293.
- Flaherty, J. & Richman, J. (1989). Gender differences in the perception and utilisation of social support: Theoretical perspectives and an empirical test. *Social Science and Medicine*, 28, 1221-1228.
- Frankenhaeuser, M. (1994). A Biopsychosocial Approach to Stress in Women and Men. In V. J. Adesso, D. M. Reddy, & R. Fleming (Eds.) *Psychological Perspectives on Women's Health*. New York :Taylor & Francis
- Gallagher, R. W., Hobfoll, S, E., Ritter, C. & Lavin, J. (1997). Marriage, intimate support and depression during pregnancy: A study of inner city women. *Journal of Health Psychology*, 2, (4), 457-469.
- Gannon, K. (1994). Psychological factors in the aetiology and treatment of recurrent miscarriage. A review and critique. *Journal of Reproductive and Infant Psychology*, 12, 55-64.
- Ganster, D. & Victor, B. (1988). The impact of social support on mental and physical health. *British Journal of Medical Psychology*, 61, 17-36.
- Goldberg, D. (1978). *General Health Questionnaire (GHQ-60)*. Windsor: NFER-Nelson.

References

- Goldberg, D. (1992). *General Health Questionnaire (GHQ-12)*. Windsor: NFER-Nelson.
- Goldberg, D. & Williams, P. (1988). *A User's Guide to the General Health Questionnaire*. Windsor: NFER-Nelson.
- Gottlieb, B. H. & Wagner, F. (1991). Stress and support processes in close relationships. In J. Eckenrode (Ed.) *The social context of coping*. (pp.165-188). New York: Plenum.
- Harvey, I. & McGrath, G. (1988). Psychiatric morbidity in spouses of women admitted to a mother and baby unit. *British Journal of Psychiatry*, 152, 506-510.
- Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, 50, 93-98.
- Hendrick, S. S., Dicke, A. & Hendrick, C. (1998). The Relationship Assessment Scale. *Journal of Social and Personal Relationships*, 15, (1), 137-142.
- Hobfoll, S. E., Cameron, R. P., Chapman, H. A. & Gallagher, R. W. (1996). Social support and social coping in couples. In G. R. Pierce, B. R. Sarason & I. G. Sarason (Eds.) *Handbook of social support and the family*. (pp.413-434). New York: Plenum Press.
- Hobfoll, S. E., Ritter, C., Lavin, J., Hulsizer, M. R. & Cameron, R. P. (1995). Depression prevalence and incidence among inner city pregnant and postpartum women. *Journal of Consulting and Clinical Psychology*, 63, (3), 445-453.
- Hobfoll, S. E. & Vaux, A. (1993). Social support, social resources and social context. In L. Goldberger & S. Breznitz (Eds.) *Handbook of stress: Theoretical and clinical aspects*. (pp.684-705). New York: Free Press.
- Holmes, T. H. & Rahe, R. H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*, 11, 213-218.

References

- Howell, D. C. (1997). *Statistical Methods for Psychology*. (4th edn). Belmont, CA: Duxbury.
- Hunsley, J., Pinsent, C., Lefebvre, M., James-Tanner, S. & Vito, D. (1995). Construct validity of the short form of the Dyadic Adjustment Scale. *Family Relations*, *44*, 231-237.
- Kalil, K. M., Gruber, J. E., Conley, J. & Syntiac, M. (1993). Social and family pressures on anxiety and stress during pregnancy. *Pre and Perinatal Psychological Journal*, *8*, (2), 113-118.
- Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eschleman, S., Wittchen, H. & Kendler, K. S. (1994). Lifetime and twelve month prevalence of DSM-R III psychiatric disorders in the United States. *Archives of General Psychiatry*, *51*, 8-19.
- Kessler, R. C. & McLeod, J. D. (1984). Social support and mental health in community samples. In S. Cohen & S. L. Syme (Eds.) *Social support and health*. (pp.219-240). Orlando: Academic Press Inc.
- Kessler, R. C., McLeod, J. D. & Wethington, E. (1985). The costs of caring: A perspective on the relationship between sex and psychological distress. In I. G. Sarason & B. R. Sarason (Eds.) *Social support: Theory, research and applications*. (pp.491-506). Dordrecht, The Netherlands: Martinus Nijhoff Publishers.
- Kessler, R. C. & McRae, J. A. (1981). Trends in the relationship between sex and psychological distress: 1957-1976. *American Sociological Review*, *46*, 443-452.
- Kinnear, P. R. & Gray, C. D. (2000). *SPSS for Windows Made Simple (Release 10)*. Hove: Psychology Press Ltd.
- Kobasa, S. C., Maddi, S. R. & Kahn, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology*, *42*, 167-177.

References

- Kobasa, S. C., Maddi, S. R. & Zola, M. A. (1983). Type A and Hardiness. *Journal of Behavioural Medicine*, 6, 41-51.
- Kumar, R. & Robson, K. M. (1984). A prospective study of emotional disorders in childbearing women. *British Journal of Psychiatry*, 144, 35-47.
- Lane, A., Keville, R., Morris, M., Kinsella, A., Turner, M. & Barry, S. (1997). Postnatal depression and elation among mothers and their partners: prevalence and predictors. *British Journal of Psychiatry*, 171, 550-555.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, 44, 1-21.
- Lazarus, R. S. (1999). *Stress and Emotion: A new synthesis*. London: Free Association Books.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Leavy, R. L. (1983). Social support and psychological disorder: A review. *Journal of Community Psychology*, 11, 3-21.
- Lederman, R. P. (1984). Anxiety and conflict in pregnancy: relationship to maternal health status. *Annual Review of Nursing Research*, 2, 27-62.
- LeMasters, E. E. (1957). Parenthood as crisis. *Marriage and Family Living*, 19, 352-355.
- Lobel, M. (1994). Conceptualisations, measurement and the effects of prenatal maternal stress on birth outcomes. *Journal of Behavioural Medicine*, 17, (3), 225-272.

References

- Lobel, M. (1998). Pregnancy and mental health. In H. Friedman (Ed.) *Encyclopaedia of Mental Health*. (pp.229-238). San Diego: Academic Press.
- Lovestone, S. & Kumar, R. (1993). Postnatal psychiatric illness: the impact on partners. *British Journal of Psychiatry*, *163*, 210-216.
- Matthey, S., Barnett, B., Kavanagh, D. J. & Howie, P. (2001). Validation of the Edinburgh Postnatal Depression Scale for men, and comparison of item endorsement with their partners. *Journal of Affective Disorders*, *64*, 175-184.
- Matthey, S., Barnett, B., Ungerer, J. & Waters, B. (2000). Paternal and maternal depressed mood during the transition to parenthood. *Journal of Affective Disorders*, *60*, 75-85.
- McDaniel, D. M. & Richards, C. S. (1990). Coping with dysphoria: Gender differences in college students. *Journal of Clinical Psychology*, *46*, 896-899.
- Milgrom, J., Martin, P.R. & Negri, L. M. (1999). *Treating postnatal depression: A psychological approach for health care practitioners*. New York: John Wiley & Sons.
- Miller, B. C. & Sollie, D. L. (1980). Normal stresses during the transition to parenthood. *Family Relations*, *29*, 459-466.
- Morse, C. A., Buist, A. & Durkin, S. (2000). First time parenthood: influences on pre and postnatal adjustment in fathers and mothers. *Journal of Psychosomatic Obstetrics and Gynaecology*, *21*, 109-120.
- Mueller, D. P. (1980). Social Networks: A promising direction for research on the relationship of the social environment to psychiatric disorder. *Social Science and Medicine*, *14*, 147-161.
- Murray, D. & Cox, J. L. (1990). Screening for depression during pregnancy with Edinburgh Postnatal Depression Scale. *Journal of Reproductive and Infant Psychology*, *8*, 99-107.

References

- Nazroo, J. Y., Edwards, A. C. & Brown, G. W. (1997). Gender differences in the onset of depression following a shared life event. *Psychological Medicine*, 27, 9-19.
- Norbeck, J. S. & Tilden, V. (1983). Life stress, social support and emotional disequilibrium in complications of pregnancy: A prospective multivariate study. *Journal of Health and Social Behaviour*, 24, 30-46.
- Nuckolls, K. B., Cassel, J. & Kaplan, B. H. (1972). Psychosocial assets, life crisis and the prognosis of pregnancy. *American Journal of Epidemiology*, 95, 431-441.
- O'Hara, M. W. (1985). Depression and marital adjustment during pregnancy and after delivery. *The American Journal of Family Therapy*, 13, (4), 49-55.
- O'Hara, M. (1986). Social support, life events and depression during pregnancy and the puerperium. *Archives of General Psychiatry*, 43, 569-573.
- O'Hara, M., Neunaber, D. J. & Zekoski, E. M. (1984). A prospective study of postpartum depression: prevalence, course and predictive factors. *Journal of Abnormal Psychology*, 93, 158-171.
- Orford, J. (1992). *Community Psychology: Theory and Practice*. Chichester: Wiley.
- Paykel, E., Emms, E., Fletcher, J. et al. (1980). Life events and social support in puerperal depression. *British Journal of Psychiatry*, 136, 339-346.
- Pearlin, L. I. & McCall, M. E. (1990). Occupational stress and marital support: A description of micro processes. In J. Eckenrode & S. Gore. (Eds.) *Stress between work and family*. (pp.39-60). New York: Plenum.
- Radloff, L. S. (1977). The CES-D Scale: a self-report depression scale for research in the general population. *Applied Psychological Measures*, 1, 385-401.

References

- Radloff, L. S. & Munroe, M. K. (1978). Sex differences in helplessness with implications for depression. In L. S. Hansen & R. S. Rapoza (Eds.) *Career Development and Counselling of Women*. (pp.137-152). Springfield, Illinois: Thomas.
- Raskin, V. D., Richman, J. A. & Gaines, C. (1990). Patterns in depressive symptoms in expectant and new parents. *American Journal of Psychiatry*, 147, 658-660.
- Richman, J. A., Raskin, V. D. & Gaines, C. (1991). Gender roles, social support and postpartum depressive symptomatology: The benefits of caring. *The Journal of Nervous and Mental Disease*, 179, 139-147.
- Rini, C. K., Wadhwa, P. D. & Sandman, C. A. (1999). Psychological adaptation and birth outcomes: The role of personal resources, stress, and sociocultural context in pregnancy. *Health Psychology*, 18, (4), 333-345.
- Roy, A. (1978). Vulnerability factors and depression in women. *British Journal of Psychiatry*, 133, 106-160.
- Rust, J., Bennun, I., Crowe, M. & Golombok, S. (1986). The Golombok Rust Inventory of Marital State (GRIMS). *Sexual and Marital Therapy*, 1, (1), 55-60.
- Rust, J., Bennun, I., Crowe, M. and Golombok, S. (1990). The GRIMS: A psychometric instrument for the assessment of marital discord. *Journal of Family Therapy*, 12, 45-57.
- Sarafino, E. P. (1990). *Health Psychology: Biopsychosocial Interactions*. (2nd edn). New York: John Wiley & Sons, Inc.
- Sarason, I. G., Levine, H. M., Basham, R. B. & Sarason, B. R. (1983). Assessing Social Support: The Social Support Questionnaire. *Journal of Personality and Social Psychology*, 44, (1), 127-139.
- Sarason, I. G., Sarason, B. R., Potter, E. H. & Antoni, M. H. (1985). Life events, social support and illness. *Psychosomatic Medicine*, 47, (2), 56-63.

References

- Seyle, H. (1956). *The stress of life*. New York: McGraw-Hill.
- Shereshefky, P. M. & Yarrow, L. J. (Eds.) (1973). *Psychological aspects of a first pregnancy and early postnatal adaptation*. New York: Raven Press.
- Spanier, G. B. (1976). The measurement of marital quality. *Journal of Sex and Marital Therapy*, 5, 288-300.
- Strickland, O. L. (1986). The occurrence of symptoms in expectant fathers. *Nursing Research*, 36, (3), 184-189.
- Swendsen, J. D. & Mazure, C. M. (2000). Life stress as a risk factor for postpartum depression: Current research and methodological issues. *Clinical Psychology: Science and Practice*, 7, (1), 17-31.
- Terry, D. J. (1991a). Predictors of subjective stress in a sample of new parents. *Australian Journal of Psychology*, 43, (1), 29-36.
- Terry, D. J. (1991b). Stress, coping and adaptation to new parenthood. *Journal of Social and Personal Relationships*, 8, 527-547.
- Thoits, P. A. (1982). Conceptual, methodological and theoretical problems in studying social support as a buffer against life stress. *Journal of Health and Social Behaviour*, 23, 145-159.
- Thoits, P. A. (1983). Dimensions of life events that influence psychological distress. In H. B. Kaplan (Ed.) *Psychosocial Stress: Trends in Theory and Research*. (pp.33-104). New York: Academic Press.
- Thoits, P. A. (1995). Stress, coping and social support processes: Where are we? What next? *Journal of Health and Social Behaviour*. (Extra Issue), 53-79.
- Tilden, V. P. (1983). The relation of life stress and social support to emotional disequilibrium during pregnancy. *Research in Nursing and Health*, 6, 167-174.

References

- Trethowan, W.H. & Conlon, W. F. (1965). The couvades syndrome. *British Journal of Psychiatry*, *111*, 57-66.
- Tucker, G. (1992). (Ed.) *The National Childbirth Trust Book of Pregnancy, Birth and Parenthood*. Oxford: Oxford University Press.
- Wandersman, L., Wandersman, A. & Kahn, S. (1980). Social support in the transition to parenthood. *Journal of Community Psychology*, *8*, (4), 332-342.
- Watson, J. P., Elliott, S. A., Rugg, A. J. & Brough, D. I. (1984). Psychiatric disorder in pregnancy and the first postnatal year. *British Journal of Psychiatry*, *144*, 453-462.
- Wethington, E., McLeod, J. D. & Kessler, R. C. (1987). The importance of life events for explaining sex differences in psychological distress. In R. C. Barnett, L. Biener & G. K. Baruch (Eds.) *Gender and Stress*. (pp.144-156). Free Press: New York.
- Whiffen, V. E. (1988a). Vulnerability to postpartum depression: a prospective multivariate study. *Journal of Abnormal Psychology*, *97*, 467-474.
- Whiffen, V. E. (1988b). Screening for Postpartum Depression. *Journal of Clinical Psychology*, *44*, 367-371.
- Wilhelm, K. & Parker, G. (1994). Sex differences in depression: fact or artefact? *Psychological Medicine*, *24*, 97-111.
- Wilhelm, K., Parker, G. & Dewhurst, J. (1998). Examining sex differences in the impact of anticipated and actual life events. *Journal of Affective Disorder*, *48*, 37-45.

APPENDICES

Appendix 1 Semi-structured Questions

DEMOGRAPHIC SECTION

(Please ✓ as appropriate)

1. What is your age?

18-24 25-29 30-34 35-39 40-45 45+

2. Please describe your ethnic origin.

3. Please describe your current occupation.

PREGNANCY SECTION

1. When is your baby due? (Please state)

Delete as appropriate

2. Have you experienced any stressful events/concerns *related* to your*/your partners pregnancy?(Please state)
.....
.....

3. Have you experienced any stressful events during pregnancy, that were *unrelated* to your*/your partner's pregnancy?(Please state)
.....
.....

FAMILY HISTORY SECTION

Delete as appropriate

1. Have you*/your partner ever experienced a miscarriage or still-birth? (Please state)
.....

2. Do you have any children by a previous partner? (Please state)
.....

WELL-BEING SECTION

1. *In the last six months*, have you consulted with your General Practitioner (GP) regarding a psychological issue/mental health issue?

Yes No

2. *In the last six months*, have you had an appointment with a psychiatrist?

Yes No

3. *In the last six months*, have you been prescribed psychiatric medication?

Yes No

Appendix 2 Perceived Stress Scale¹

PLEASE INDICATE HOW OFTEN YOU HAVE THOUGHT OR FELT A CERTAIN WAY **DURING THE LAST MONTH**. ALTHOUGH SOME OF THE QUESTIONS ARE SIMILAR, THERE ARE DIFFERENCES BETWEEN THEM AND YOU SHOULD TREAT EACH ONE AS A SEPARATE QUESTION. THE BEST APPROACH IS TO ANSWER EACH QUESTION FAIRLY QUICKLY. THAT IS, DON'T TRY TO COUNT UP THE NUMBER OF TIMES YOU FELT A PARTICULAR WAY, BUT RATHER INDICATE THE OPTION THAT SEEMS LIKE A REASONABLE ESTIMATE.
FOR EACH QUESTION CHOOSE FROM THE FOLLOWING OPTIONS:

**0 = NEVER 1 = ALMOST NEVER 2 = SOMETIMES
3 = FAIRLY OFTEN 4 = VERY OFTEN**

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and stressed?
4. In the last month, how often have you dealt with irritating life hassles?
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
6. In the last month, how often have you felt confident about your ability to handle your personal problems?
7. In the last month, how often have you felt that things were going your way?
8. In the last month, how often have you found that you could not cope with all the things you had to do?
9. In the last month, how often have you been able to control irritations in your life?
10. In the last month, how often have you felt that you were on top of things?
11. In the last month, how often have you been angered because of things that happened that were outside of your control?
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?
13. In the last month, how often have you been able to control the way you spend your time?
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

¹ From Cohen, Kamarck & Mermelstein, 1983

Appendix 3 General Health Questionnaire²

THE NEXT SECTION ASKS ABOUT HOW YOUR HEALTH HAS BEEN IN GENERAL. PLEASE ANSWER ALL THE QUESTIONS SIMPLY BY UNDERLINING THE ANSWER, WHICH YOU THINK MOST NEARLY APPLIES TO YOU. REMEMBER THAT THE QUESTIONS ARE ASKING ABOUT PRESENT AND RECENT COMPLAINTS (OVER THE LAST MONTH) NOT THOSE THAT YOU HAD IN THE PAST.

Have you recently (in the last month)....

1. Been able to concentrate on whatever you're doing?	Better Than usual	Same as usual	Less than usual	Much less than usual
2. Lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
3. Felt that you are playing a useful part in things?	More so Than usual	Same as usual	Less useful than usual	Much less useful
4. Felt capable of making decisions about things?	More so Than usual	Same as usual	Less so than usual	Much less than usual
5. Felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
6. Felt you couldn't overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
7. Been able to enjoy your normal day to day activities?	More so Than usual	Same as usual	Less so than usual	Much less than usual
8. Been able to face up to your problems?	More so Than usual	Same as usual	Less so than usual	Much less able
9. Been feeling unhappy and depressed?	Not at all	No more than usual	rather more than usual	Much more than usual
10. Been losing confidence in yourself?	Not at all	No more than usual	rather more than usual	Much more than usual
11. Been thinking of yourself as a worthless person?	Not at all	No more than usual	rather more than usual	Much more than usual
12. Been feeling reasonably happy, all things considered?	More so Than usual	About same as usual	Less so than usual	Much less than usual

² From Goldberg. (1992).

Appendix 4 Edinburgh Postnatal Depression Scale³

PLEASE UNDERLINE THE RESPONSE WHICH COMES CLOSEST TO HOW YOU HAVE FELT IN THE PAST 7 DAYS, NOT JUST HOW YOU FEEL TODAY.

1. I have been able to laugh and see the funny side of things.

As much as I always could
Not quite so much now
Definitely not so much now
Not at all

2. I have looked forward with enjoyment to things.

As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all

3. I have blamed myself unnecessarily when things went wrong.

Yes, most of the time
Yes, some of the time
Not very often
No, never

4. I have been anxious or worried for no good reason.

No, not at all
Hardly ever
Yes, sometimes
Yes, very often

5. I have felt scared or panicky for no very good reason.

Yes, quite a lot
Yes, sometimes
No, not much
No, not at all

6. Things have been getting on top of me.

Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
No, most of the time I have coped quite well
No, I have been coping as well as ever

³ From Cox, Holden & Sagovsky, (1987)

7. *I have been so unhappy that I have had difficulty sleeping.*

Yes, most of the time
Yes, sometimes
Not very often
No, not at all

8. *I have felt sad or miserable.*

Yes, most of the time
Yes, quite often
Not very often
No, not at all

9. *I have been so unhappy that I have been crying.*

Yes, most of the time
Yes, quite often
Only occasionally
No, never

10. *The thought of harming myself has occurred to me.*

Yes, quite often
Sometimes
Hardly ever
Never

Appendix 5 Family Support Scale⁴

PLEASE CIRCLE THE RESPONSE THAT BEST DESCRIBES HOW HELPFUL THE SOURCES OF SUPPORT HAVE BEEN DURING THE LAST MONTH. IF A SOURCE OF HELP HAS NOT BEEN AVAILABLE DURING THIS PERIOD OF TIME, CIRCLE THE NA (NOT AVAILABLE) RESPONSE. THERE ARE TWO BLANK SPACES AT THE BOTTOM FOR YOU TO WRITE IN ANY SOURCES OF SUPPORT NOT ALREADY LISTED. PLEASE USE THE FOLLOWING KEY:

<p>1 = NOT HELPFUL AT ALL 3 = GENERALLY HELPFUL 5 = EXTREMELY HELPFUL</p>	<p>2 = SOMETIMES HELPFUL 4 = VERY HELPFUL</p>
--	--

1. My parents	NA	1	2	3	4	5
2. My partner's parents	NA	1	2	3	4	5
3. My relatives	NA	1	2	3	4	5
4. My partner's relatives	NA	1	2	3	4	5
5. My partner	NA	1	2	3	4	5
6. My friends	NA	1	2	3	4	5
7. My partner's friends	NA	1	2	3	4	5
8. My own children	NA	1	2	3	4	5
9. Other parents	NA	1	2	3	4	5
10. Co-workers	NA	1	2	3	4	5
11. Parent groups	NA	1	2	3	4	5
12. Social groups/clubs	NA	1	2	3	4	5

⁴ From Dunst, Jenkins & Trivette, (1984)

Appendices

13. Place of worship	NA	1	2	3	4	5
14. My family or child's Dr	NA	1	2	3	4	5
15. Prof. helpers (health visitors midwives, district nurse etc)	NA	1	2	3	4	5
16. Prof. agencies (public health, social services, mental health etc)	NA	1	2	3	4	5
17. School/day-care centre	NA	1	2	3	4	5
18. Early intervention	NA	1	2	3	4	5
19. -----	NA	1	2	3	4	5
20. -----	NA	1	2	3	4	5

Appendix 6 Relationship Assessment Scale⁵

PLEASE **CIRCLE** ON THE ANSWER SHEET THE LETTER FOR EACH ITEM, WHICH BEST ANSWERS THAT ITEM FOR YOU.

1. How well does your partner meet your needs?

A	B	C	D	E
Poorly		Average		Extremely well

2. In general, how satisfied are you with your relationship with your partner?

A	B	C	D	E
Unsatisfied		Average		Extremely satisfied

3. How good is your relationship compared to most?

A	B	C	D	E
Poor		Average		Excellent

4. How often do you wish you hadn't begun this relationship?

A	B	C	D	E
Never		Average		Very often

5. To what extent has your relationship met your original expectations?

A	B	C	D	E
Hardly at all		Average		Completely

6. How much do you love your partner?

A	B	C	D	E
Not much		Average		Very much

7. How many problems are there in your relationship?

A	B	C	D	E
Very few		Average		Very many

⁵ From Hendrick, (1988)

Appendix 7 Ethical Approval Letter

Our Ref: pgr/sl/07

23 September 2002

Miss C Summerscales
Trainee Clinical Psychologist
University of Leicester – Clinical Section
Ken Edwards Building
University Road
Leicester



Gwendolen Road
Leicester
LE5 4QF

Tel: 0116 273 1173
Fax: 0116 258 8577
Mini Com: 0116 258 8640
DX 709470 Leicester 12

Dear Miss Summerscales

Re: Gender Differences in Response to the Stressors of Becoming a Parent – our ref 6807

Further to your application dated 29th August 2002, you will be pleased to know that the Leicestershire Research Ethics Committee at its meeting held on the 6th September 2002 approved your application to undertake the above mentioned research.

The committee felt that the importance of shielding the questionnaire response from partners needs to be emphasised. Privacy is essential to this study.

Your attention is drawn to the attached paper which reminds the researcher of information that needs to be observed when ethics committee approval is given.

Yours sincerely

A handwritten signature in black ink, appearing to read "P G Rabey".

**P G Rabey
Chairman
Leicestershire Research Ethics Committee**

(NB All communications relating to Leicestershire Research Ethics Committee must be sent to the Committee Secretariat at Leicestershire, Northamptonshire and Rutland Health Authority. If, however, your original application was submitted through a Trust Research & Development Office, then any response or further correspondence must be submitted in the same way.)

Appendix 8 Letter of Invitation, Information Leaflet and Consent Form

Directorate of Women's & Perinatal Services

Mr. C. R. Stewart – Clinical Director

LETTER OF INVITATION

The Mother and Father Project: Gender differences in response to the stressors of becoming a parent.

I wonder if you would be prepared to assist in a study that is being conducted looking at the experiences of mothers and fathers during pregnancy.

The study only requires you to complete a questionnaire of 62 questions. This should take no longer than 10 minutes. The researcher, Claire Summerscales, will attend Parentcraft Groups to explain more about the study. In the meantime, an information leaflet is enclosed with this letter outlining the study. If you are interested and would like to discuss the study in more detail, you can speak to Claire Summerscales when she attends.

The information that you provide will be strictly confidential. It will be used for research purposes only. If you do not wish to take part in the research you may do so without justifying your decision.

I hope that you will feel able to participate.

Yours sincerely,

**C. R. Stewart
Clinical Director**

Enc: Information leaflet

The Mother and Father Project

Gender differences in response to the stressors of becoming a parent

Principal Researcher: Claire Summerscales (Trainee Clinical Psychologist).
Contact Details: Leicester General Hospital, Department of Medical Psychology,
Hadley House, Gwendolen Road, Leicester LE5 4PW. Telephone: 0116 2584958.

INFORMATION SHEET

I am inviting you to participate in a research project. I am currently completing my training to become a clinical psychologist, at the University of Leicester. As part of my training, I am carrying out "The Mother and Father Project". To help you decide whether you would like to take part in this study, I have included answers to some *frequently asked questions*.

Q1: WHAT IS THE PURPOSE OF THE STUDY?

The study aims to monitor a range of issues that are important to mothers and fathers during the antenatal stages of pregnancy. In particular, the study will focus upon mothers and fathers' *levels of stress, emotional feelings, views about relationships with partners, and the social support that is available* during pregnancy.

Q2: WHY IS IT IMPORTANT TO CARRY OUT THIS STUDY?

There has been a considerable amount of research completed, which has looked at mother's perspectives on becoming a parent. However, studies that have included father's perspectives are limited. This study will help to bring fathers experiences into the picture and identify and recognise stresses and resources available to both *mothers and fathers* during this transitional time. Hopefully, the results will help services to recognise the potential stress that *couples* may experience during pregnancy and support networks that both *mothers and fathers* perceive as helpful, thus emphasising the importance of including fathers and considering their needs within antenatal services, *in addition* to the needs of the mother and child.

Q3: WHAT WILL BE INVOLVED IF YOU TAKE PART IN THE STUDY?

Participation will involve you filling out a booklet of questions about stress, how you are feeling emotionally, your views about your relationship with your partner, and about the social support available to you. **Both members of the couple will be asked to answer the questions; therefore two booklets will need to be completed. The booklet of questions consists of 62 questions and will take approximately 10 minutes to complete. It is requested that couples complete their questions independently of each other.**

I will attend one of your Parentcraft classes. I will ask couples who express an interest in participating, to complete a screening questionnaire. A letter of consent will also be completed. I will write to your GP to confirm that you have agreed to take part. The booklet of questions can be completed and returned at the end of the class or you

can take them home to complete. **Do not worry if your partner cannot attend the classes.** You can take a booklet of questionnaires for your partner to complete. The completed booklets can then be returned to the next class or by post in a pre-paid envelope. If you choose to take the booklets home to complete them, contact details will be noted and a reminder letter will be sent to you to return the completed booklets if they haven't been received within two weeks.

Q4: WILL INFORMATION OBTAINED IN THE STUDY BE CONFIDENTIAL?

It is normal practice for the researcher to inform your GP that you have agreed to take part in this research. All information provided by you will be confidential and will be used for research purposes only. I will retain a list of participants' names and addresses so that reminder letters can be sent if you choose to complete the booklet at home and/or you request feedback about the results of the study. The list will be kept securely within the workplace when not in use. Following data collection all identifiable information will be destroyed. All data will only be kept for as long as is necessary to complete the study.

Q5: WHAT IF YOU ARE HARMED BY THE STUDY?

This study aims to get your views and opinions; it is not designed in any way to interfere with your physical or psychological well-being or medical care. However, if you find yourself troubled by any aspect of the study, please discuss this with me.

Q6: WHAT HAPPENS AT THE END OF THE STUDY?

After taking part in the study, or if you decide not to take part, I will not contact you again. If you would like to receive information about the findings of the study, please speak to me about this.

Q7: WHAT HAPPENS IF YOU DO NOT WISH TO PARTICIPATE IN THIS STUDY OR WISH TO WITHDRAW FROM THE STUDY?

If you do not wish to participate in this study or if you wish to withdraw from the study you may do so at any point without justifying your decision. Your future treatment will not be affected.

The Mother and Father Project

Gender differences in response to the stressors of becoming a parent.

Researcher: Claire Summerscales (Trainee Clinical Psychologist).

CONSENT FORM

This form should be read in conjunction with the Participant Information Sheet.

- ◆ I agree to take part in the above study as described in the **Information Sheet**.
- ◆ I understand that I may withdraw from the study at any time without justifying my decision and without affecting my normal care and medical management.
- ◆ I understand that all the information will be treated as confidential.
- ◆ I understand and agree to my General Practitioner (GP) being informed that I have agreed to participate in this research. My GP's name is (Please state).....
My GP's address is:
- ◆ I understand medical research is covered for mishaps in the same way, as for patients undergoing treatment in the NHS i.e. compensation is only available if negligence occurs.
- ◆ I have read the information sheet on the above study and have had the opportunity to discuss the details with CLAIRE SUMMERSCALES (Principal Researcher) and ask any questions. The nature and the purpose of the study to be undertaken have been explained to me and I understand what will be required if I take part in the study.

Signature

Date.....

(Name in BLOCK LETTERS)

.....

Address:

.....

.....

Appendix 9 Letter to Consultant Obstetricians

Dear Mr/Mrs

RE: THE MOTHER AND FATHER PROJECT: GENDER DIFFERENCES IN RESPONSE TO THE STRESSORS OF BECOMING A PARENT.

I am writing to advise you of the above research study. Between October 2002 and February 2003, I plan to attend Parentcraft Groups that are held at the Leicester General Hospital and the Leicester Royal Infirmary. I will be approaching pregnant women and their partners to see if they would like to participate in the study. Participation will involve completing a questionnaire that will take approximately 10 minutes to complete.

If you have any objections to this plan, please let me know as soon as possible. I can be contacted at the department listed at the top of the letter.

Yours sincerely,

Claire Summerscales.
(Trainee Clinical Psychologist).

Appendix 10 Screening Questionnaire

The Mother and Father Project

Gender differences in response to the stressors of becoming a parent.

COUPLE SCREENING QUESTIONNAIRE

Please answer the following questions by placing YES or NO in the box provided.

* Delete as appropriate

1. Do you already have any children together?

2. Is your pregnancy "assisted" e.g. I.V.F. treatment?

3. Has your consultant advised you that your pregnancy is high risk? I.e. serious health risks for the unborn child or expectant mother.

4. How long have you been living together for? (Please state)

5. Are you both over 18 years of age?

6. Is English your first language?

If NO, please state your first language.....

6.B. If your answer is NO to number 6. Can you speak and read English?

7. Are you currently participating in any other research studies at the Leicester General Hospital or Leicester Royal Infirmary?

Thank you for expressing an interest in taking part in this study.

Please return this form to me and I will check to see whether you can help.

Your help in this study will be greatly appreciated.

Claire Summerscales – Researcher

Appendix 11 Letter to Participant's GP

Dear Dr

Re: Your patient

Study title: The Mother and Father Project: Gender differences in response to the stressors of becoming a parent.

This is to inform you that your patient has recently agreed to participate in the above research study, which is taking place within Women's and Perinatal Services at Leicester General Hospital and Leicester Royal Infirmary Hospital.

If you require any further information please do not hesitate to contact me at the above address.

Yours sincerely,

Claire Summerscales.
(Trainee Clinical Psychologist).

Appendix 12 Reminder Letter

The Mother and Father Project

Gender differences in response to the stressors of becoming a parent.

REMINDER

Dear

A couple of weeks ago, you kindly agreed to participate in a Research Study looking at couples' experiences of pregnancy. I attended one of your Parentcraft classes and gave you a booklet of questions for you to complete and return to me.

I have enclosed a pre-paid envelope with this letter for you to return the completed booklet. If you have already returned the completed booklet in the last few days, please ignore this letter.

If you have decided that you no longer wish to participate in the study, please ignore this letter.

If you are returning the completed questionnaire, thank you for taking the time to complete and return it.

Claire Summerscales
(Researcher).