

**CONSTRUCTING A SCALE TO MEASURE PREGNANT WOMEN'S
EXPECTATIONS OF CHILDBIRTH:
LITERATURE REVIEW AND RESEARCH REPORT**

Submitted by

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DECLARATION

This work has not been submitted for any other degree or to any other institution.

CONSTRUCTING A SCALE TO MEASURE PREGNANT WOMEN'S EXPECTATIONS OF CHILDBIRTH

Abstract

Section 1: Literature Review

This review explores the recent research on the nature of fear of childbirth with a focus on methods of assessment and psychological intervention. Using defined criteria, thirty-five articles were identified for review. Fear of childbirth was shown to have implications for the emotional well being of women both in the antenatal and postnatal period. A number of personal and social factors were reported to influence fear. Fear of childbirth was found to be a distinct dimension of anxiety and therefore measures of general anxiety lack validity. Studies investigating the impact of psychological interventions to treat childbirth fear show initial promise however methodological flaws limit conclusions. Findings are explored in relation to implications for women in the UK.

Section 2: Research Report

The expectations of childbirth that women develop during pregnancy are reported to influence the actual experience of childbirth. Existing measures of childbirth expectations have limited robustness and cultural validity for pregnant women in the UK. The aim of this study was to develop a reliable and valid English-language based scale to measure pregnant women's expectations of childbirth. Items were generated via exploratory interviews with members of the target population. An initial version of the scale was developed and piloted with a large sample of pregnant women. Questionnaire data was subjected to item analysis and principal components analysis revealed six underlying factors. A final version of the scale was developed and initial assessment of internal reliability and validity were carried out.

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Research Report

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**A LITERATURE REVIEW OF THE CURRENT UNDERSTANDINGS
OF FEAR OF CHILDBIRTH, WITH A FOCUS ON ASSESSMENT
AND TREATMENT**

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A LITERATURE REVIEW OF THE CURRENT UNDERSTANDINGS OF FEAR OF CHILDBIRTH, WITH A FOCUS ON ASSESSMENT AND TREATMENT

1. Abstract

This paper aims to review the current knowledge concerning the nature of fear of childbirth and its implications for the emotional well-being of pregnant women in the antenatal and postnatal period. Particular attention will be paid to current methods of assessment and psychological intervention studies for treating fear of childbirth. A selective review was undertaken of the studies focusing on the understanding of fear of childbirth from the perspective of women themselves. They were critically evaluated based on their methodology and contribution to the subject area. Clinical implications and future directions for research are also discussed. The studies suggest that there is commonality in the content of women's fears relating to childbirth although there may be important cultural differences. Fear of childbirth was found to be a distinct dimension of pregnancy anxiety and therefore assessment tools assessing childbirth-related anxiety specifically are needed. The majority of studies have relied on idiosyncratic methods of assessment that lack psychometric robustness. Psychological intervention studies for treating fear of childbirth show initial promise in terms of withdrawal of request for caesarean section but they lack the methodological rigour needed to draw robust conclusions. In conclusion, fear of childbirth seems to have important implications for childbirth outcomes, however, a reliable and valid assessment tool is needed before the implications and factors that influence childbirth fear of women in the UK can be reliably explored.

Keywords: fear of childbirth; assessment; psychological intervention; pregnant women

1.1 Aim

The aim of this literature review is to provide an overview of the current knowledge base regarding the nature of fear of childbirth and to critically appraise existing assessment measures and treatment studies of fear of childbirth. Papers will be evaluated based on their contribution to the understanding of this field and their methodological rigour. Particular attention will be paid to implications for childbirth services in the UK

1.2 Search strategy

Papers were identified and selected following systematic searches using the following computerised databases; PsycINFO, PsycARTICLES, British Nursing Index and OvidMEDLINE ® via OVID. Databases were searched with the terms: childbirth; (labo* or delivery or birth or pregnan*); “fear or anxi*”; (assessment or measurement) and (“treat* or psychol* intervention). Search terms were combined and forty papers were identified. A manual search of the reference section of papers was also conducted to identify further relevant references.

Papers from 1990 – 2009 were selected to ensure that findings were grounded in current health care practices. It is known that antenatal and childbirth processes of care have gone through changes over time. Papers were included in this review if they were published in English, described the nature of fear of childbirth during the antenatal period, or reviewed assessment measures or treatment studies of fear of childbirth. Key papers published prior to 1990 were included. This review focussed on the understanding of fear of childbirth from the perspective of the pregnant woman herself and therefore studies purely investigating the perceptions of staff and caregivers were excluded. Five papers were excluded due to not meeting the inclusion criteria, leaving 35 papers. A review by Saisto

and Halmesmäki was published in 2003, however, this paper did not provide a detailed review of assessment methods. See Table 1 for summary of 35 papers

Table 1. Papers included in this review

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Areskog et al. (1982)	Sweden	To compare using an interview versus a questionnaire to identify women with significant fear of childbirth in late pregnancy	139 pregnant women in 3 rd trimester	Cross-sectional survey	The results of using an interview and a questionnaire to gain information about the nature of fear of childbirth corresponded well.
Bewley et al. (2002)	UK	To discuss how services in the UK could respond to fear of childbirth		Commentary paper	The paper highlights that fear of childbirth is a key issue underpinning requests for C.S. Vivid debate in literature regarding patient choice
Czarnocka et al. (2000)	UK	To identify prevalence and predictors of PTSD symptoms following labour	264 women post-partum	Within participants design	Childbirth fear is a possible risk factor for developing PTSD following labour
Eriksson et al. (2006a)	Sweden	To describe how intense fear of childbirth is experienced.	20 women, post-partum with experience of intense fear	Qualitative exploratory study	Ways of coping with fear were found to be: avoidance, processing and help-seeking. The health care environment needs to be conducive to sharing fear.
Eriksson et al. (2006b)	Sweden	To explore the content of childbirth-related fear	308 women post-partum	Cross-sectional survey	The labour and delivery process was the most frequently reported fear. An element of fear is located in the health-care system

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Fairbrother et al. (2007)	Canada	To examine obstetric and psychological predictors of postpartum depression and PTSD	127 low-risk, nulliparous pregnant women	Prospective case-series	Pre-natal fear of childbirth did not predict PTSD or symptoms of depression
Fenwick et al. (2008)	Australia	To describe the reasons behind Australian women's request for C.S	14 women who had requested C.S	Qualitative	Childbirth fear was a main factor underpinning women's requests for C.S
Fisher et al. (2006)	Australia	To understand how social context impacts on women's fear of childbirth	22 women with fear of childbirth	Qualitative, exploratory study	Fear of childbirth has social and personal dimension and is both a prospective and retrospective phenomena
Geissbuehler et al. (2002)	Switzerland	To examine the intensity and nature of childbirth fear among pregnant women across the 2 nd to 3 rd trimester	8528 pregnant women	Cross-sectional survey	The most frequent fears were fear for the child's health and fear of pain
Halvorsen et al. (2008)	Norway	Assess effect of counsellor attitude on request for C.S	86 pregnant women with fear of birth and concurrent request for C.S	Cohort study	'Coping' attitude was significantly associated with withdrawal of request for C.S.
Hofberg et al. (2003)	UK	To review the relationship between pregnancy and psychiatric disorders, and examine outcomes for women and their babies		Literature review	Death from suicide is the leading cause of maternal death. Fear of childbirth can be classified as 'Tokophobia'

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Huizink et al. (2004)	Netherlands	To assess the structure of pregnancy anxiety through factor analysis	230 nulliparous pregnant women	Psychometrics – factor analysis	A three-factor model of pregnancy anxiety was proposed: fear of giving birth, fear of bearing a disabled child, concern about one's appearance.
Johnson et al. (2002)	UK	To identify whether fear of childbirth can predict the occurrence of emergency C.S	443 pregnant women >32 weeks gestation	Prospective, between-group comparison	Fear of childbirth in 3 rd trimester is not associated with mode of delivery in UK sample
Laursen et al. (2008)	Denmark	To describe the association between fear of childbirth and social, demographic and psychological factors	30 480 healthy nulliparous women	Cross-sectional survey	Women with few psychological and social resources were more likely to experience fear of childbirth. The prevalence of fear was stable during the study period
Levin (1991)	USA	To assess the factor structure of the Pregnancy Anxiety Scale	266 women postpartum	Questionnaire development	A three-factor model fit the 10-item scale: anxiety about being pregnant, childbirth and hospitalization
McCourt et al. (2007)	UK	To review the literature on the decision making behind women's request for elective C.S		Literature review	Fear of childbirth is a factor underpinning women's request for C.S. Women's preference for C.S ranged from 0.3 – 14%
Melender (2002a)	Finland	To describe the experience of fear and to identify factors associated with it.	329 pregnant women	Cross-sectional survey	Specific fears related to childbirth, child and mother's health and staff. Causes of fear alarming information and previous experience. Fear manifested as symptoms of stress.
Melender (2002b)	Finland	To describe causes and coping strategies of childbirth fear	20 women, 2-3 days postpartum	Qualitative	The main source of fear was previous experience and knowledge. Knowledge can both cause and decrease fear.

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Nerum et al. (2006)	Norway	To assess if request for C.S can be changed through crisis-oriented counselling	86 pregnant women with fear of childbirth and request for planned C.S	Cohort study	86% withdrew request for C.S and prepared for vaginal delivery after receiving counselling
Nilsson et al. (2009)	Sweden	To describe women's lived experience of fear of childbirth	8 pregnant women (24-37 wks gestation) seeking help for fear of childbirth	Qualitative study	Key fears were: pain and responses from staff. Fear impacts on women's confidence to give birth.
Rouhe et al. (2009)	Finland	To examine fear of childbirth according to parity, gestational age, and obstetric history	1400 unselected pregnant women attending maternity clinic	Cross-sectional survey	Severe fear of childbirth was associated more with nulliparous women, in later pregnancy and with history of C.S
Ryding et al. (1998)	Sweden	To examine the association between fear of childbirth during the 3 rd trimester and subsequent delivery by emergency C.S	1981 pregnant women at 32 wks gestation	Case-control study	Fear of childbirth during the 3 rd trimester may increase risk of emergency C.S
Ryding (2003)	Sweden	To study childbirth experience of women who had received midwifery led counselling for fear of childbirth	53 women, postpartum matched for parity and mode of delivery	Case-control study	Women who received treatment experienced delivery as more frightening than reference group
Saisto et al. (2001)	Finland	Evaluate effects of intensive cognitive therapy versus conventional counselling, compared to TAU on fear of childbirth	176 pregnant women with fear of childbirth and request for planned C.S	R.C.T	62% changed original request for C.S after receiving cognitive intervention and counselling

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Saisto et al. (2003)	Finland	To review literature of fear of childbirth		Narrative review	Severe fear of childbirth affects 6-10% of pregnant women and is the motivating factor for 7-22% of CS births.
Saisto et al. (2006)	Finland	Assess group psychoeducation and relaxation in treating fear of childbirth	102 pregnant women with severe fear of childbirth	Case series	More requests for C.S were withdrawn in treatment group. Intervention was well received and rated as helpful
Serçekuş et al. (2007)	Turkey	To describe fears associated with childbirth and reason for these fears	19 nulliparous pregnant women who were fearful of childbirth	Qualitative-interview based	Key causes of fear were: information, experience, environment and staff. Key cultural differences were highlighted, compared to western European women.
Sjögren (1997)	Sweden	Assess cost-effectiveness and obstetric outcome relative to treatment as usual for pregnant women with fear of childbirth.	100 pregnant women requesting C.S due to fear of childbirth with matched reference group	Case series	50% reduction in request for C.S after psychosomatic support. Obstetric outcomes were similar to those of reference group. Cost of psychological therapy was compensated by saving in reduction of C.S
Sjögren (1998)	Sweden	To investigate how women with severe fear of childbirth remembered birth after treatment, compared to references. To understand experience of women who withdrew request for C.S	72 women post partum who had received psychosomatic support for fear of childbirth. Matched reference group	Case-control	Women who had received treatment remembered the pregnancy as a less positive experience than the reference group

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Waldenström et al. (2006)	Sweden	To establish prevalence of fear of childbirth and its relationship with subsequent C.S rates.	2662 pregnant women	Prospective study – between group comparison	Combination of fear of childbirth and counselling may increase rates of elective CS
Wijma et al. (1998)	Sweden	To develop a questionnaire to measure fear of childbirth.	196 pregnant women at 32 wks gestation	Questionnaire design	The development of the W-DEQ seems to measure the psychological construct of fear of childbirth. The tool shows good reliability and initial construct validity
Wijma et al. (2002)	Sweden	To develop a scale to measure fear during labour and delivery	Initial study – 92 women in labour 2 nd study – 45 women in labour	Questionnaire design	The DFS is a 10-item scale hic can be administered in 60-90 seconds during labour. The scale shows good reliability.
Wiklund et al. (2007)	Sweden	To investigate reasons for request for C.S in first time mothers	91-C.S on request 266- control group	Prospective cohort study	Women requesting C.S. were significantly more fearful of childbirth. Specific fears: lack of support, loss of control and health of baby.

First Author (Year)	Place	Aim	Sample characteristics	Design	Main findings
Zar et al. (2002)	Sweden	To investigate the prevalence of extreme fear of childbirth and anxiety disorders in women during late pregnancy	613 pregnant women	Cross-sectional survey	2.4% fulfilled criteria for phobia-like fear. Presence of anxiety disorders was related to fear of childbirth.
Zar et al. (2001)	Sweden	To investigate the possible Trait and State aspects of fear of childbirth	162 pregnant women	Prospective study – between group comparison	Fear of childbirth comprises a large part of Trait anxiety

Abbreviations: C.S: Caesarean section

W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire

DFS: Delivery Fear Scale

PTSD: Post Traumatic Stress Disorder

2. Introduction

Approximately 90% of women will become pregnant at least once in their lives (Bewley and Cockburn, 2002). It is natural and common for pregnant women to experience a degree of anxiety regarding childbirth as it is unpredictable, painful and poses risks to the health of both mother and child (Bewley & Cockburn, 2002). Despite obstetric practices becoming safer, pregnant women still experience fears regarding childbirth (Geissbuehler & Eberhard, 2002; Bewley & Cockburn, 2002; Walsh, 2002). A study investigating the birth experience of primiparous women found that women who were realistically fearful and knowledgeable about childbirth had the most positive experience (Crowe & Von Baeyer, 1989). However, it is highlighted in the literature that a subset of pregnant women experience a fear of childbirth that is so severe that they request a caesarean section to manage the fear and avoid labour (Saisto & Halmesmäki, 2003; Zar, Wijma & Wijma, 2002). Some women may also delay or avoid becoming pregnant because of fear of childbirth (Czarnocka & Slade, 2000).

Fear of childbirth has been highlighted as an important construct and clinical problem in Scandinavia. Subsequently specialist 'fear of childbirth' services, known as Aurora services have been developed to support pregnant women who are fearful of childbirth. The goal of these teams is to support pregnant women to manage their fears and to facilitate a satisfactory delivery (Ryding et al., 2003). These teams are usually led by experienced midwives, who are supported by an obstetrician, psychologist and social worker (Waldenström, Hildingsson & Ryding, 2006). There are very few studies investigating fear of childbirth in women from the UK. This review will begin by exploring the nature of fear of childbirth, including its influences and implications. A review of the assessment methods

of fear of childbirth with then be undertaken and will conclude with an exploration of the research studies investigating psychological interventions for fear of childbirth.

3. Current understanding of the nature of fear of childbirth

No operational definition of fear of childbirth exists in the literature. This is highlighted by the different terms used to describe the construct, which include; fear of childbirth, fear of vaginal delivery, fear of labour and childbirth-related anxiety.

There have been attempts to define fear of childbirth more specifically. A construct called 'tokophobia' has been described in the psychiatry literature, which defines a phobic state characterised by the dread and avoidance of childbirth. Two subcategories exist; primary tokophobia, which occurs in women prior to their first pregnancy and secondary tokophobia, which is the avoidance of further pregnancies (Hofberg & Ward, 2003). Zar et al. (2002) in a study exploring the relationship between anxiety disorders and fear of childbirth found that 2.4% of their sample of pregnant women in gestational week 32 fulfilled DSM-IV criteria for a phobia-like fear of childbirth. They proposed that extreme fear of childbirth could be reconceptualised as 'childbirth phobia'. Both of these definitions seem to be in their infancy and it is the broader based construct of fear of childbirth that has been more widely researched.

3.1 Contents of fear of childbirth

A body of literature exists regarding the nature and content of childbirth-related fears. A review paper by Saisto and Halmesmäki (2003) proposed that fear of childbirth can be conceptualised as incorporating biological, psychological and social factors. They grouped papers together and concluded that the most common fears in relations to childbirth were:

fear of pain, fear of being incapable of giving birth and fear of future parenting responsibilities. Factors found to be influencing fear of childbirth were previous childbirth experience, previous psychiatric history and social support.

Studies exploring the nature of fear of childbirth, not included in the last review will now be considered. In a study by Geissbuehler and Eberhard (2002), the intensity and nature of childbirth-related fears were investigated in 8000 pregnant women (Swiss German speakers) across the second and third trimester. They found that the most frequent fears reported were: fear for the baby's health, fear of pain and fears about medical interventions. The large sample size of this study is a particular strength. The study utilised a postal questionnaire that asked a range of pregnancy and birth related questions of which two were specifically related to childbirth. These asked about the intensity of birth-related fear on a four-point scale (not afraid to very afraid) and the nature of fear, with ten possible options. There were no details given on how this questionnaire was developed or on how options for the response scale were generated which questions the reliability and validity of this methodology.

The majority of studies investigating the nature of fear of childbirth have relied on quantitative methods. However, recently a small number of qualitative studies have been published which allow the lived experience of fear of childbirth to be investigated. One such study by Nilsson and Lundgren (2007), found that fear of childbirth consisted of four elements; feelings of danger, feeling trapped, not being good enough and loneliness. A key finding was that 'fear' affects the woman's confidence in her ability to give birth. Eriksson, Westman and Hamberg (2006) explored the content of childbirth-related fear in Swedish women (N = 308). This was a postal study which asked women to respond to an

open ended question; “Please give a short description of what worried you or what you feared in the face of childbirth”. Content analysis of responses was indexed according to six categories; the childbirth process, (of which fear of pain was most prevalent) the health of the baby, own capabilities and reactions, own health and responses from health care staff. The data was collected retrospectively with a mean time of 1.5 years after delivery. This methodology may be influenced by the actual experience of birth and is open to memory bias although the authors report that previous research by Sjögren (1998) shows that women’s memory for fear related to childbirth is good according to verification with medical records, however, it was unclear what the details of these medical records were. In order to verify the accuracy of recalled fears it is necessary to conduct prospective longitudinal studies with data relating to the contents of fear to be collected both in the antenatal and post-natal period.

A further study by Fisher, Hauck and Fenwick (2006) explored the content of Western Australian women’s fear of childbirth. Key dimensions of fear were found to be: pain, losing control, the unknown, information and the health of the baby. The qualitative design was appropriate, as the understanding of fear of childbirth was in its infancy in this cultural context. An additional qualitative study investigated the nature and causes of fear of childbirth among 19 nulliparous pregnant women in Turkey (Serçekuş & Okumuş, 2007). This study is important, as the majority of previous research has been carried out in Western women. The nature of women’s fears were related to labour pain, problems during labour, healthcare staff attitudes and sexuality. The findings of this study were similar to the most common fears reported by Melender (2002a) and Saisto and Halmesmäki (2003) however, concerns not previously reported in the research concerned the maternity ward atmosphere and sexuality. Also, the role of husbands did not feature in interviews; the

reasoning given for this was that husbands are not present during childbirth in Turkey (Serçekuş & Okumuş, 2007). These findings highlight that although there may be a large degree of commonality in the nature and causes of childbirth fears, there may also be key cultural and contextual differences. This suggests that it is important to carry out further research with different cultural groups, as results may not be generalisable across cultures or service contexts.

In summary, studies indicated that the nature and content of women's fears regarding childbirth are multidimensional. There appears to be some overlap in the content of fear - in particular fear of pain. Both qualitative and quantitative methodologies have been utilised to explore fear, allowing in-depth understanding of the lived experience of childbirth fear. Also the emergence of large-scale studies is promising in terms of allowing the confident interpretation of findings, however, the methodological rigour of these studies needs addressing before results can be generalised. Weaknesses of note are in relation to sampling bias and recruitment. It is highlighted that Nilsson and Lundgren (2009) recruited pregnant women who were already seeking support for their fear of childbirth, and half of the participants in the study by Eriksson et al. (2006) had received counselling for their childbirth fear, which is likely to have influenced their perceptions of fear. In addition the assessment methods used to detect fear of childbirth vary between studies and lack psychometric robustness. An important finding is that an element of fear is located within the health care system itself, which has implications for service delivery. There are currently no papers on the nature of fear of childbirth from the perspective of women living in the UK, which is a significant gap in understanding this issue further.

4. Prevalence of fear of childbirth

A number of studies have attempted to assess the prevalence of fear of childbirth. Geissbuehler and Eberhard (2003) found that 5.3% of their sample of 8000 German speaking Swiss women reported experiencing fear of childbirth. Zar et al. (2002) found that 11% of their sample (N =506) experienced fear of childbirth. Waldenström et al. (2006) reported that at least 10% of pregnant women in Sweden experience fear of childbirth, defined as expressing very negative feelings towards childbirth. Most recently Laursen, Hedegaard and Johansen (2008) conducted a population-based study in Denmark (N = 30 480). This is the largest study of its kind and found that 7.6% of healthy nulliparous women expressed fear of childbirth. Prevalence was stable across the study period (1997 – 2003). No data currently exists on the prevalence of fear of childbirth in the UK.

In summary, establishing true prevalence rates has been made difficult due to the small sample sizes of studies, however, it is promising that there has been one population based study. However, the lack of consistency both in assessment methods and the definition of 'fear of childbirth' make comparison between studies problematic. Similarly the point at which fear was assessed varied between studies. It has been suggested that the prevalence of fear is not stable across gestational stages (Laursen et al., 2008). Studies have mainly relied on questionnaires or single items developed for sole purpose, of which the reliability and validity have not been established. Only the study by Zar et al. (2002) used the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) which has undergone psychometric study (Wijma, Wijma and Zar, 1998). Assessment methods will be considered in a later section.

5. Factors that influence fear of childbirth

5.1 Parity

The influence of parity on the intensity of fear of childbirth is controversial. Areskog, Uddenberg & Kjessler (1981); Geissbuehler & Eberhard (2002); Melender (2002a); Rouhe, Salmela-Aro, Halmesmäki & Saisto (2009) report that significant childbirth-related fear is more intense in primiparas than multiparas. However, a review paper by Saisto and Halmesmäki (2003) reported that the intensity of fear is similar between groups, although the basis of this claim was unclear. It is difficult to draw clear conclusions from results due to the lack of consistency in assessment methodologies employed. The questions Melender (2002a) used to assess the relationship between parity and fear of childbirth were based on qualitative interviews carried out with women post-partum. This retrospective method may have introduced memory bias for extreme responses.

The *source* of fear has been explored according to parity; Rouhe et al. (2009) and Melender (2002a) found that in multiparas, previous obstetric history in terms of caesarean section was more common in women with severe fear of childbirth. In primiparous women, the source of fear was negative stories from others and alarming information (Melender, 2002a). However, in some women the source of fear was beliefs about childbirth, but with no clear origin (Melender, 2002b).

5.2 Gestation

Rouhe et al. (2009) reported that severe fear of childbirth was more common in women beyond 21 weeks gestation. In addition to looking at parity, Laursen et al. (2008) also found that fear was not stable within pregnant women across gestation, with a similar number of women who were fearful at the beginning of pregnancy who were no longer

fearful and vice versa. The majority of studies have investigated fear in late pregnancy, however this finding suggests that the course of fear varies between pregnant women and therefore warrants individualised assessment across the stages of pregnancy. This has particular implications for treatment. They also found that low educational level, young age, unemployment and lack of social network influenced fear of childbirth. The large scale nature of this study (N = 30 480) is a definite strength, however, it is noted that 50% of eligible women were not supported by their GP to participate, which may mean this sample, although large, may not be representative of the population. This was a telephone based interview study, however, two different interviewers conducted interviews and it was not clear whether there was an interview schedule. This may have affected the reliability of data collection. In addition fear of childbirth was assessed by the response 'A lot' in relation to the question 'are you anxious about the course of the upcoming delivery. Single question assessment methods may be problematic in terms of assessing their reliability

5.3 Antenatal Support

Social support was found to be an important factor by both Nilsson and Lundgren (2009) and Eriksson et al. (2006) who conducted qualitative studies in Sweden. They found that a supportive relationship between the pregnant woman and her midwife and support from her social network were found to influence levels of fear of childbirth. A study by Fisher et al. (2006) investigated pregnant women in Western Australia had a similar finding. They concluded that fear of childbirth had both social and personal dimensions and that understanding the key dimensions of the nature of fear has important implications for developing antenatal support.

5.4 Attendance at birth preparation classes

Geissbuehler and Eberhard (2002) also investigated whether birth preparation classes influenced birth fears; the results showed that experiencing 'no fear' and 'intense fear of childbirth' was significantly higher in pregnant women who attended birth preparation classes compared to those that did not. However, a study by Melender (2002a) found that fear of childbirth was significantly more common in primiparous women who had not attended antenatal classes compared with women that had. It is difficult to draw conclusions from this data as it is not reported what levels of fear were, prior to attendance and therefore the result cannot be attributed to the effect of attending the class as it could be that the women attending classes were experiencing higher level of anxiety at the outset. To investigate the direction of this relationship it is necessary to measure levels of childbirth fear both pre and post attendance at birth preparation classes. It was unclear what the specific components of these classes were and in order to investigate the true effect of birth preparation classes on the intensity of childbirth fear it is necessary to carry out studies with more rigorous controls. Both Melender (2002b) and Serçekuş & Okumuş (2007) reported that knowledge can both be a cause of fear but it can also decrease fear, suggesting that individualized assessment needs to be carried out before information is given.

6. Coping with fear of childbirth

Eriksson et al. (2006) described how fear of childbirth was experienced, communicated and dealt with, by a sample of 20 Swedish women. Dealing with fear was categorized into three groups: evading, processing and seeking help. The women were found to employ cognitive strategies such as positive self-talk and selectively attending to positive information to cope with fear. Women reported that being shown understanding by staff is a necessary precondition to being able to disclose fear. Melender (2002b) collected data through semi-

structured interviews with 20 Finnish women and found that women coped with their fear through talking, writing and seeking information and help. Both Melender (2002b) and Eriksson et al. (2006) relied on retrospective accounts of women's experience of fear of childbirth and methods of coping; interviews were carried out at least 1 year after the birth and some women in Eriksson et al's study had received counselling for their fear. These issues are likely to have influenced women's accounts of their experience of fear. Neither study provided information regarding the reliability of their qualitative analysis method.

It has also been suggested that fear may be so difficult to cope with, that it leads to the desire to avoid childbirth altogether and a subsequent request may be made by the women for a caesarean section (CS) (Ryding, 1991; Ryding, 1993).

7. The implications of fear of childbirth.

7.1 Mode of delivery

A key implication of fear of childbirth is its relationship with CS. The CS rates are reported to have dramatically risen in the UK (Johnson & Slade, 2002). The National Sentinel Caesarean Section Audit reported that the overall CS rate was 21.5% in England and Wales (NICE, 2004). A recent review paper based on 17 research articles on elective CS and decision making by McCourt et al. (2007) concluded that fear of childbirth was a factor underpinning pregnant women's requests for CS. The authors highlight that a limitation of many studies is that previous obstetric history was not controlled for; an important factor which may influence the decision for a CS. An additional Australian study by Fenwick et al. (2008) supported McCourt et al's conclusions; they investigated the reasons for requesting CS in the absence of medical indicators in nulliparous women. They found that the motivation for CS was a means of alleviating fear regarding vaginal delivery. A

methodological issue with this research was that the sample of 14 women in this qualitative study were recruited up to five years after the birth and therefore, as with previous studies, retrospective accounts of fears may have been biased by the childbirth experience.

Wiklund, Edman and Andolf (2007) conducted a Swedish cohort study to investigate the reasons for requesting CS in 357 first time mothers. They used a prospective design and had a control group planning a vaginal delivery. They found that women requesting CS were significantly more fearful regarding childbirth, with specific fears relating to lack of support in labour, loss of control and the health of the baby.

There is a body of research suggesting that childbirth fear could be a possible motivating factor behind pregnant women's requests for CS, where there is no medical indication. However, in order to accurately investigate the relationship between fear of childbirth and request for caesarean section it is necessary to conduct further well controlled, prospective studies. .

Emergency Caesarean section

A Swedish study by Ryding et al. (1998) found that women experiencing fear of childbirth during pregnancy were at an increased risk of a labour concluding in an emergency CS compared to controls. Johnson and Slade (2002) did not find a similar association in a sample of women in the North of England. A recent study by Fenwick, Gamble, Nathan, Bayes and Hauck (2009) found that high antenatal fear in Australian women was associated with emergency caesarean section, however, after controlling for parity and foetal compromise the association disappeared. All three studies used the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ; Wijma, Wijma & Zar, 1998), however, it

was recognised that discrepancy in findings might be due to cross-cultural differences in the understanding of fear and the cultural validity of the assessment measure utilised.

7.2 Fear of childbirth and post-natal emotional well being

In a large prospective study by Söderquist, Wijma, Thorbert and Wijma (2009) in Sweden, it was found that women with severe fear of childbirth in late pregnancy, were at an increased risk of developing post-traumatic stress as well as depression. However, in a similar study by Fairbrother and Woody (2007) carried out in Canada, this association was not found. The discrepancy in results could be due to the difference in sample size; the study by Söderquist et al. (2009) had a sample size of (N=1224) compared to (N=127) in Fairbrother and Woody's study and therefore the latter study may have lacked power. The issue of assessment is again highlighted; both studies utilised the WDEQ to measure antenatal fear of childbirth, however, it has been suggested that the tool may lack cultural validity in non-Swedish samples. Women who experience a traumatic birth may develop fear of childbirth, which can lead to the avoidance of further pregnancies (Czarnocka & Slade, 2000). Also understood as secondary tokophobia (Hofberg & Ward, 2003).

8. Theoretical understanding of fear of childbirth.

Attempts have been made to develop a theoretical understanding of fear of childbirth. Melender (2002) used Rachman's definition of fear, this states that fear consists of three main components; the subjective experience of fear, physiological changes caused by fears and the avoidance of fear-inducing stimuli. In relation to childbirth, fear may lead to the request for CS in order to avoid the fear-inducing stimulus, which is childbirth. Apart from this study, it appears that no other attempts have been made to link fear of childbirth with established theories of fear. Wijma et al. (1998) proposed operationalizing the construct of

fear of childbirth according to Lazarus' theory of stress and coping (Lazarus, 1982). This theory states that cognitions regarding childbirth determine how women react to environmental stressors and mediate the development and maintenance of anxiety. Their research therefore focused on understanding pregnant women's appraisals of forthcoming childbirth, as they are relevant for the experience of delivery. Zar et al. (2001) proposed that women who fear childbirth have a childbirth experience that mirrors their fear, therefore they described the fulfilment of negative expectations as a 'vicious cycle'. Relating fear of childbirth to well-established cognitive theories has important implications for clinical practice in terms of the development of treatments, however, more thorough investigation of the aetiology of childbirth-related fear is needed and the underlying factors that influence its experience. Further research is needed to confidently determine the theoretical underpinnings of childbirth fear.

9. Assessment of fear of childbirth

The literature reviewed so far has highlighted that a number of factors may influence the development of fear of childbirth, which in turn has important implications for women during pregnancy, childbirth and in the post-natal period. However, a limiting factor in drawing conclusions from the evidence is the lack of consistency and reliability of assessment methods.

9.1 Pregnancy anxiety measures

The earliest measure designed to measure specific fears and worries related to pregnancy was the Pregnancy Anxiety Scale (PAS) Burstein et al. (1974). The PAS consisted of 25 items with a dichotomous (true/false) response code. Levin (1991) followed up this work and assessed the factor structure of the PAS. Data collected retrospectively after childbirth

suggested a three-factor structure: 'anxiety about being pregnant', 'anxiety about childbirth' and 'anxiety about hospitalization'. It is important to point out that health care practices have changed and women in the UK no longer spend numerous days in hospital after giving birth, without medical indication. The PAS is therefore likely to lack cultural validity for pregnant women currently in the UK and the importance of assessment measures that are firmly grounded in existing care practices is highlighted.

Huizink, Mulder, Robles de Medina, Visser and Buitelaar (2004) proposed a three-factor model of pregnancy anxiety reflecting; 'fear of giving birth', fear of bearing a handicapped child' and 'concern about one's appearance'. Childbirth fear has been suggested to be a specific dimension of pregnancy anxiety (Standley et al., 1979; Levin, 1991; Huizink et al., 2004). Accordingly it has been highlighted that assessment tools developed for measuring general anxiety may underestimate pregnancy-specific anxiety. The use of generalised anxiety measures for measuring fear of childbirth has been clearly critiqued in the literature (Huizink, 2004; Levin, 1991; Saisto & Halmesmäki, 2003). This literature review will therefore focus on reviewing measures developed for assessing fear of childbirth specifically.

9.2 Specific fear of childbirth measures

The earliest available measure assessing fear of childbirth specifically is the 'Fear of childbirth' questionnaire (FDQ) developed by Areskog, Kjessler and Uddenberg (1982). The questionnaire consisted of 19 items relating to aspects of childbirth fear, however it is unclear what methodology was used to generate these items and the content validity of this scale is unknown. The FDQ has good internal reliability in terms of $\alpha = 0.76$, however information on its validity is not available. In addition the use of a dichotomous response

scale (Yes/No) has been noted as somewhat problematic as it decreases sensitivity to measurement (Levin, 1991).

The Pregnancy Related Anxieties Questionnaire-Revised (PRAQ-R; Huizink, 2000) was developed by confirmatory factor analysis of the Pregnancy Related Anxieties Questionnaire (PRAQ) originally developed by Van Den Bergh (1990). This scale contains 10 items in total, with the 'fear of birth' subscale consisting of three items relating to pain, childbirth experience and control. It is suggested that scales with such few items can lack reliability (Kline, 2000). However, it was reported that Cronbach's alpha's for each subscale were all $>.76$ indicating acceptable internal reliability. There was no data available regarding the validity of this scale (Huizink, Robles de Medina, Mulder, Visser, & Buitelaar, 2003).

It is noted that Wijma et al's delivery fear scale (DFS) is different from other fear of childbirth measures as it assesses fear during childbirth, rather in the antenatal period (Wijma, Alehagan & Wijma, 2002). The DFS consists of 10 items that can be administered at any moment during childbirth, taking approximately 60-90 seconds to complete. The DFS was reported to have acceptable psychometric properties for a scale in the early stages of construction, however, in terms of its clinical utility it is not suitable for identifying women who are fearful of childbirth during pregnancy.

The most widely used tool for assessing fear of childbirth specifically in the antenatal period is the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) (Wijma et al., 1998). This questionnaire consists of two scales, version A which measures expectancies of labour and birth, administered at 32 weeks gestation and version B that

measures actual experiences, administered within two hours of delivery. The W-DEQ was shown to have good internal consistency and split-half reliability of $>.87$. The development of this questionnaire was based on the idea that expectations of childbirth during the antenatal period, are relevant for pregnant women's appraisals of childbirth in situ. This was in accordance to Lazarus' theory of stress and coping (Lazarus, 1982). In terms of content validity, the scale items were generated through accounts of two experts' clinical experience, which Wackerbarth, Streams and Smith (2002) suggest may overlook important constructs. Construct validity as assessed by correlating the W-DEQ with pre existing measures revealed that the WDEQ taps into the anxiety domain, however, leaving enough variance for the measurement of another dimension.

The W-DEQ has been used in a number of Swedish and Finnish studies, however, there is only one study that has tested it in a sample of pregnant women in England (Johnson & Slade, 2002). They found that the W-DEQ contained four underlying distinct factors rather measuring a single construct of childbirth fear, these were: 'fear', 'lack of positive anticipation' and the degree to which women anticipate 'isolation' and 'riskiness'. They also reported that a number of items needed further investigation, as they did not load onto any factor when the W-DEQ was subjected to principal components analysis. On closer inspection it was unclear as to the meaning of a number of the translated items. This questions the cultural validity of the W-DEQ in an English speaking population.

In summary, it seems that there is a role for measures assessing fear of childbirth specifically, as they provide a rather more genuine assessment of childbirth-related fear than measures of general pregnancy anxiety. There is a lack of information on the methodologies used to generate items for existing scales, which questions their content

validity. Also information regarding construct and concurrent validity of measures is scarce. It has been highlighted that scales may not be valid across cultures and therefore there is a need for a valid and reliable measure that can accurately identify women in the UK who are fearful of childbirth.

Clearly there are reservations about the accuracy of measurement of childbirth fear however there are a small number of studies that have investigated the influence of psychological interventions on fear of childbirth

10. Psychological interventions for fear of childbirth.

During pregnancy, drug treatments are usually avoided due to side effects and possible complications (Saisto & Halmesmäki, 2003) and therefore this review will focus on psychological interventions.

Sjögren and Thomassen (1997) employed a case-series design of 100 Swedish women with severe fear of childbirth. They found that receiving psychosomatic support resulted in a 50% reduction in maternal requests for CS. Similar outcomes were also found by Ryding (1993) albeit with a smaller sample (N=28). In both studies it was unclear what the specific nature of the therapy was, and according to what criteria childbirth fear was assessed. In Sjögren and Thomassen's study it would have been beneficial to have details of the 30% of women who refused psychosomatic support and the 30% who received therapy but still requested an elective CS.

Sjögren (1998) conducted a further study and found that women who had been fearful of childbirth and received psychosomatic support (N=72) remembered pregnancy less

positively than matched controls ($p=.02$) although memories for the experience of childbirth were similar between groups. Data for this study was collected retrospectively and therefore is open to bias in terms of memory recall. A further limitation in this study was that the method of psychological intervention was not standardised; it was tailored to the individual, which limits conclusions.

Nerum, Halvorsen, Sorlie & Oian (2006) studied 86 Norwegian pregnant women who had a fear of childbirth and had a concurrent request for a planned CS. The intervention consisted of individual crisis-oriented counselling alongside routine antenatal care, social work input was also offered where necessary. The aim of the study was to help participants to want to give birth vaginally and they found that 86% of the study sample changed their request for a CS and prepared for a vaginal delivery. It was unclear how many women had originally requested CS prior to the intervention. Long-term follow up revealed that women were satisfied with the support they received and their choice of mode of delivery. It is of value that women were asked to evaluate their treatment. However, a limitation in this study was that the severity of childbirth fear was assessed according to non-standard criteria developed by the researcher, which questions the reliability of the methodology. Similarly to Sjögren (1998), the content of psychological therapy varied between individuals, which again limit conclusions.

The studies reviewed so far have indicated positive outcomes, in terms of withdrawal of CS. However, a study by Ryding, Persson, Onell and Kvist (2003) found that women ($N=53$) who had received counselling by midwives for fear of childbirth reported experiencing a more frightening experience of childbirth-related to delivery than the comparison group. This finding suggests that the model of therapy may be important and

that specific interventions for managing fear may be needed rather than counselling. It is also noted that data regarding childbirth experiences was collected 1-14 months post-partum and that version B of the WDEQ (Wijma et al. 1998) has only been validated for use up to two hours after delivery.

There has been one randomised control trial conducted by Saisto et al. (2001) with 176 pregnant Finnish women who were assigned to cognitive therapy or treatment as usual (involved counselling). They found that 62% of women who had originally requested a caesarean section due to fear of childbirth opted for a vaginal delivery after receiving cognitive therapy. They were also found to have a shorter labour. The findings suggest that cognitive therapy can influence both withdrawal of requests for caesarean section and the childbirth experience. A criticism of this study was that there was no untreated control group, making attributing positive outcomes to treatment alone inappropriate. The authors highlight that some women in the conventional treatment group also received additional cognitive therapy, which limits conclusions.

The majority of studies have focused on the reduction in CS as a primary outcome of fear of childbirth treatment studies. However, Saisto, Tovainen, Salmela-Aro & Halmesmäki (2006) suggest that it is also important to address psychological outcomes such as perceived fear and adjustment during pregnancy.

Waldenström, Hilingson and Ryding (2006) found that counselling was effective in enabling women to have a more positive birth experience. However, it was also associated with an increase in the rate of elective CS. It seems evident from the literature that some services actively encourage vaginal delivery (Nerum et al. 2006) whereas others prioritise a

rewarding childbirth experience irrespective of mode of delivery (Ryding et al. 2003). This may be an important factor influencing women's decision-making rather than the effectiveness of psychological interventions.

This issue was highlighted by Halvorsen, Nerum, Sorlie and Oian (2008) who conducted a study comparing counselling delivered by two midwives who communicated either a 'coping attitude' or an 'autonomy attitude'. A 'coping attitude' was described as promoting vaginal birth as the safest mode of delivery and communicating a belief in the woman's ability to overcome emotional obstacles. An 'autonomy attitude' was defined as communicating the benefits of vaginal delivery, however emphasis was placed on the woman's right to choose her mode of delivery. At the midpoint of the study the midwife who had an 'autonomy attitude' was coached in the principles of 'coping attitude' and switched to this orientation. This was associated with a significant increase in the proportion of women withdrawing their request for a caesarean from 77% to 93%.

The treatment studies reviewed so far have investigated the impact of individual therapy on fear of childbirth. Saisto et al. (2006) investigated group psychotherapeutic support and relaxation to treat women fearing childbirth with a concurrent request for CS. The intervention consisted of five weekly group psychotherapeutic sessions of 120 minutes, led by a psychodynamic therapist with additional relaxation exercises incorporated. The results revealed that the intervention had a positive impact on mode of delivery as a significantly greater number of requests for CS were withdrawn in the experimental group compared to the control group ($p < .05$). It is important to note that 30% of women refused to engage with group intervention and therefore it may not be an acceptable form of therapy to a significant proportion of women. Outcome was measured in terms of withdrawal of CS

however, there was no report of outcome in terms of intensity of fear of childbirth.

Participants reported that sessions were 'helpful' on a visual analogue scale, however, a more specific measure of outcome would have added weight to this finding.

In summary, studies have proposed that psychological interventions for fear of childbirth may have a positive impact in terms of reducing the number of requested caesarean sections and lead to childbirth being experienced more positively. However, there is no outcome data on the effect of the intervention on levels of childbirth fear, which the intervention is supposed to be targeting. Unfortunately due to a number of methodological weaknesses, doubt is cast on the validity of findings. Firstly, it was unclear whether the sample sizes of studies were large enough to allow confident interpretation of findings since there were no reports of any power calculations having been carried out. In addition, it is only possible to distinguish the theoretical framework of the therapy undertaken in a few studies (Halvorsen et al., 2008; Saisto et al., 2001; Saisto et al., 2006). It is also noted that treatments were not manualised and thus varied between individuals, therefore rendering the work unreplicable. The majority of studies recruited women from clinical populations. They were already involved with fear of childbirth services and therefore samples may not be representative of the general population of women who fear childbirth. Finally the lack of consistency and detail in assessing fear of childbirth limits the assessment of outcome and comparison across studies. As of yet, there does not appear to have been any studies investigating psychological interventions for fear of childbirth in the UK.

11. Conclusions and recommendations.

In summary, this review has demonstrated that fear of childbirth is a specific dimension of pregnancy anxiety and can possibly influence the emotional well-being of a subset of

women, both in the antenatal and postnatal period. In general the quality of the studies identified varied widely, and the presence of definitional and methodological issues created difficulties in drawing clear inferences.

Studies exploring the contents of women's childbirth-related fears have found that the most common fears, of which 'pain' is specifically identified, are possibly shared across cultures. However, a number of key differences have been identified suggesting that results pertaining to fear of childbirth may not be generalisable across cultures. Qualitative studies have also begun to emerge, which describe the lived experience of childbirth fear from the perspective of women. These findings suggest that fear of childbirth has both personal and social dimensions and has the potential to cause distress.

A number of factors that may influence the severity of childbirth fear have been identified in the literature, although there is no clear consensus regarding these. There are a number of methodological weaknesses highlighted in studies, of which lack of power and consistency in assessment are particularly highlighted. The latter makes comparison between studies problematic. It is noted that the emergence of two large-scale studies is a positive addition to the research field (Geissbuehler & Eberhard, 2003; Laursen et al., 2008)

The majority of research reviewed has been carried out in Scandinavia, with one study relating specifically to fear of childbirth having been conducted in the UK (Johnson & Slade, 2000). The generalisability of findings is limited for women in the UK, due to the specificity of sampling and recruitment. It is suggested that in order to explore the construct of fear of childbirth for women in the UK, it is necessary to carry out research with samples of the target population.

A review of the small number of existing tools to measure fear of childbirth highlighted the lack of psychometric data available in scale development literature. The WDEQ (Wijma et al., 1998) was reported to have acceptable internal reliability, although the content and cultural validity of the tool is questionable for use with women in the UK.

A small number of studies have explored psychological interventions for treating fear of childbirth. Results indicated that there was a reduction in the number of requests for CS, however, due to the methodological weaknesses in study design it was not possible to attribute outcome to treatment alone. Case series designs are the most vulnerable to bias and randomised controlled trials (RCT) are seen as the gold standard in terms of robust research evidence. Saisto et al. (2001) conducted the only RCT in the field, however, there was no untreated control group. The results are therefore tentative and should be viewed with caution.

The nature of psychological treatment is highlighted as important, as it is indicated in the literature that midwifery led-counselling (Ryding et al., 2003) and birth preparation classes (Geissbuehler & Eberhard, 2003) can actually increase women's fear. Information can increase fear and therefore care must be taken to investigate efficacy of treatments before they are rolled out.

Before healthcare services in the UK can begin to effectively address fear of childbirth, there needs to be a reliable and valid assessment tool capable of identifying it accurately. It is suggested that fear of childbirth is a significant factor underpinning maternal requests for

CS (McCourt et al., 2007). The literature suggests that fear of vaginal delivery is sometimes hidden by the term 'caesarean on maternal request' (Saisto & Halmesmäki, 2003).

A number of studies highlight the possible monetary savings in terms of the reduction in the number of CS's performed which off set the cost of therapeutic input (Sjögren & Thomassen, 1997; Sjögren, 1998). UK clinical practice guidelines on CS, recommend that women requesting CS due to a fear of childbirth should be offered counselling, cognitive behavioural therapy is specifically mentioned (NICE, 2004). However, based on the evidence reviewed for this paper, the efficacy of specific psychological interventions for fear of childbirth are inconclusive and are unlikely to generalise to women in the UK.

Attempts have been made to develop a theoretical understanding of the mechanism of fear of childbirth. Established fear and anxiety theories have been proposed, however, there appears to be insufficient evidence to confidently accept any of these. A debate in the literature exists regarding moves to give the construct of fear of childbirth more credence, highlighted by its psychiatric classification of 'Tokophobia' (Hofberg & Ward, 2003). However, Walsh (2002) claims that this classification pathologises fear and midwifery specific practices could address childbirth fear through normalising pain and vaginal childbirth.

In their commentary responding to the fear of childbirth, Bewley and Cockburn (2002) highlight the importance of the early identification of pregnant women who are fearful of childbirth and their prompt referral for treatment. However, caution must be taken before changes to services are made without clear research evidence to support the efficacy of treatments for fear of childbirth. More rigorous research evidence is needed; indicating that

stronger multidisciplinary working between Midwifery, Obstetrics and Clinical Psychology might be worthwhile.

In order to provide effective and appropriate antenatal care for women in the UK, it is necessary to understand the nature and source of women's childbirth-related fear. Gaining an understanding of the degree of fear of childbirth in all pregnant women may be a useful starting point for future prospective studies. The review has highlighted the lack of a reliable and valid assessment measure to accurately identify fear of childbirth in women in England, which is a precursor to exploring the nature and content of fear and beginning to develop effective psychological interventions.

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**CONSTRUCTING A SCALE TO MEASURE PREGNANT WOMEN'S
EXPECTATIONS OF CHILDBIRTH:
RESEARCH REPORT**

WORD COUNT - 10142

1. Abstract

Women develop varying expectations of childbirth during pregnancy. In particular women who have adverse expectations of childbirth were found to have poorer psychological childbirth outcomes. The aim of this study was to develop a reliable and valid English language based scale to measure pregnant women's expectations of childbirth. Items were generated via semi-structured interviews with 18 pregnant women, to explore their expectations of the forthcoming childbirth. Content analysis was used to analyse interview data and scale items were written based on the constructs extracted. An initial 85-item version of the Pais-Slade Expectations of Childbirth Scale (PSECS) was developed and administered to a general population sample of pregnant women via the post along with the State Trait Anxiety Inventory (STAI: Spielberger, Gorsuch & Lushene, 1983). The questionnaires were completed by 148 women (25% response rate). The resultant data was subjected to item and principal components analysis revealing the PSECS contained six underlying factors. The final version of the PSECS was reduced to 51 items and was found to have acceptable internal reliability, content and construct validity, with a moderate, positive correlation with the STAI. The PSECS shows promising psychometric robustness and has potential as both a research and clinical tool in exploring the content of childbirth expectations. In terms of its utility it is suggested that the scale could be used in its entirety, or as individual subscales indicate good internal reliability they could be used independently to provide a briefer measure. The methodological limitations as well as implications for further research are discussed.

Keywords: childbirth, expectations, fear, questionnaire development, psychometrics.

2. Introduction

Women develop detailed expectations of childbirth during pregnancy (Gibbins & Thomson, 2001). Several studies have found that these expectations can affect women's evaluation of their birth experience (Hauck, Fenwick, Downie & Butt, 2007; Gibbins & Thomson, 2001; Green, Coupland & Kitzinger, 1990, Slade, MacPherson, Hume & Maresh, 1993; Stolte, 1987).

Studies investigating the contents of childbirth expectations have found that expectations vary significantly between women; with some pregnant women expecting it to be challenging but worthwhile and others frightening and a threat (Hallgren, Kihlgren, Norberg & Forslin, 1995). Similarly, Fenwick, Hauck, Downie and Butt (2005) identified themes relating to both positive and negative outlooks towards birth, indicating that positive and negative expectations co-exist suggesting that childbirth expectations are multi-dimensional. In addition they confirmed that some women's negative expectations were shaped by fear and in particular concerns about the pain of labour.

Review papers by Hodnett (2002) and Lally, Murtagh, Macphail and Thomson (2008) concluded that personal expectations of pain in childbirth were a key factor in evaluating childbirth experience. Lally et al (2008) found that the majority of studies show that women underestimate the intensity of pain they will experience in childbirth and that these unrealistic expectations may lead to women being inadequately prepared for labour. The relationship between pregnant women and health-care professionals has been highlighted as an influential factor in the development of expectations of childbirth (Hodnett, 2002). It has been shown to be a moderating factor in the development of fear, but also has the potential

to mediate perceptions of childbirth when expectations were not achieved (Hauck et al. 2007). Goodman, Mackey and Tavakoli (2004) found that expectations of personal control were strongly associated with childbirth satisfaction, which is supported by Slade et al. (1993) and Waldenstrom, Borg, Olsson, Skold and Wall (1996). Other factors reported to be influential in the formation of childbirth expectations are public and private discourses of childbirth and stories from female relatives (Fenwick et al., 2005).

The relationship between childbirth expectations and experiences

A number of studies have attempted to investigate the relationship between expectations and experiences of labour, however with differing outcomes. Studies by Green et al. (1990) and Slade et al. (1993) are of particular value as they investigated the relationship prospectively. Previous studies have relied on retrospective reports of expectations, which are likely to be influenced by the birth experience (Stole, 1987; Waldenstrom et al., 1996). Slade et al. (1993) conducted a prospective study in a city in the north of England to investigate the correlation between pregnant women's expectations, experiences and satisfaction with labour. They found that positive emotional expectations were strong predictors of positive emotional experiences and that negative expectations were essentially paralleled by experience. Green et al. (1990) highlighted that there is common discourse in the literature that women with high expectations of childbirth will be disappointed, however in their prospective study of 825 women from the South of England, they found that high expectations did not have negative implications, however women with low expectations were likely to have poorer psychological outcomes. Studies by Goodman et al. (2004) and Hauck et al. (2007) reported women whose expectations were achieved are more likely to be satisfied with birth, highlighting the importance of realistic expectations. It has been found that a lack of congruence between expectations and experiences

negatively influences the childbirth experience, with unfulfilled expectations leading to a more negative birth experience (Fenwick et al., 2005). Unmet childbirth expectations were also reported to be a predictor of childbirth being perceived as traumatic (Soet, Brack & Dilorio, 2003).

The literature highlights the importance of comprehensive assessment of the contents of pregnant women's childbirth expectations. Hodnett (2002) reported that personal expectations were the most influential factor in the rating of satisfaction with birth experience. In particular the identification of women with unrealistic expectations of childbirth during pregnancy would be beneficial as they seem to have important implications not only for how childbirth is viewed but also post-natal emotional well-being. It is suggested that supporting women to develop more realistic expectations could lead to a more fulfilling childbirth experience (Fenwick et al., 2005; Goodman et al., 2004; Hallgren et al., 1993; Stolte, 1987).

Expectations of childbirth and fear

The literature exploring the content of pregnant women's expectations of childbirth has identified that for a subset of women, childbirth is viewed with trepidation (Hallgren et al., 1995). A key dimension of women's negative expectations of childbirth is fear. Fear of childbirth has been predominantly researched in Scandinavia. Wijma, Wijma and Zar (1998) made an explicit link between childbirth expectations and fear of childbirth. They advocated the exploration of the content of childbirth expectations as a valid means of identifying pregnant women who are fearful of childbirth. They used Lazarus' stress and coping theory, which proposes that the appraisals a woman develops regarding childbirth are relevant for her experience, as cognitions determine stress reactions and mediate the

development and maintenance of anxiety (Lazarus, 1982). Zar, Wijma and Wijma (2001) proposed that women who fear childbirth have a childbirth experience that mirrors their fear, therefore they described the fulfilment of negative expectations as a 'vicious cycle'.

Measuring pregnant women's childbirth expectations.

It has been highlighted that the exploration of pregnant women's childbirth expectations would be of clinical utility. Existing quantitative studies have been questionnaire-based. Green et al. (1990) used a questionnaire to gather information about childbirth expectations related to pain relief, medical interventions and social-behavioural aspects, however there was no information provided regarding how this questionnaire was developed or any sample questions provided. It was unclear whether the psychometric properties of this tool had been assessed. Slade et al. (1993) assessed the expectations of emotional, medical and control aspects of labour via a number of descriptors with a visual analogue response scale. Items for the emotional section were developed from unstructured interviews with 12 pregnant women in the late stages of pregnancy and medical and control items were developed in conjunction with a panel of experts. This contributed to the content validity of the measure, however there were no details regarding reliability or construct validity. Similarly, Waldenström et al. (1996) used their own questionnaire, but there were no details regarding the development of this. The limited information means that results are not replicable and the lack of psychometric robustness of assessment methodology questions the reliability and validity of results.

In 1998, Wijma, Wijma and Zar developed the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ). This consists of two scales, version A which measures expectations of labour and birth, administered at 32 weeks gestation and version B, which

measures actual experiences, administered within two hours of delivery. The development of this scale was based on Lazarus's theory (Lazarus, 1982). Wijma, Wijma and Zar (1998) proposed that version A of the scale measured the construct of childbirth fear through the assessment of childbirth expectations. The W-DEQ was shown to have both good internal consistency and split-half reliability of $>.87$. However, there are a number of weaknesses of the questionnaire: items for the pilot scale were only generated through accounts of two experts' clinical experience, which affects the content validity of the questionnaire. Research suggests that gaining views directly from the target population generates a measure that is firmly grounded in personal experience. Wackerbarth, Streams and Smith (2002) claim that post hoc analyses of instruments that employed only literature reviews and expert opinion to generate items often neglect key constructs and therefore interviews with members of the target population should be conducted in order to ensure the relevance and appropriateness of items.

Johnson and Slade (2002) used the English translated version of the W-DEQ with a sample of pregnant women in the North of England and factor analysis suggested that rather than measuring a single construct of fear of childbirth it actually measured four distinct domains: 'fear', 'lack of positive anticipation' and the degree to which women anticipate 'isolation' and 'riskiness'. They also report that a number of items needed further investigation, as they did not load when the W-DEQ was factor analysed. On closer inspection some of the translated items from Swedish into English did not appear to be meaningful. This questions the utility of the W-DEQ in an English speaking population and supports the development of a questionnaire to measure childbirth expectations that is firmly grounded in the language and culture of the population for whom it is intended for, ensuring good cultural validity.

Fear of childbirth

Exploring childbirth expectations during the antenatal period had been proposed as a means of identifying women who are fearful of childbirth. A body of literature exists focusing on the fear element of childbirth expectations. A review paper by Saisto and Halmesmäki (2003) proposed that fear of childbirth can be conceptualised as incorporating biological, psychological and social factors. The most common fears in relations to childbirth were: fear of pain, fear of being incapable of giving birth and fear of future parenting responsibilities. Factors found to be influencing fear of childbirth included previous childbirth experience, previous psychiatric history, information and social support. These factors were found by grouping papers, however as yet there is no clear consensus regarding the theoretical underpinnings of fear of childbirth.

Fear of childbirth and mode of delivery

For some pregnant women their cognitive appraisals of childbirth may be so negative that it may influence their mode of delivery. A key implication of childbirth fear in the literature is its relationship with request for caesarean section (CS). Fear can be so intense that it leads to a desire to avoid vaginal delivery in order to alleviate fear (McCourt, 2007). Saisto and Halmesmäki (2003) suggest in their review that fear of childbirth may account for 7-22% of caesarean section births in the United Kingdom. Ryding, Wijma, Wijma & Rydhström (1998), in a Swedish sample found that women whose labour had concluded in an emergency caesarean section scored significantly higher on the W-DEQ; they had more negative expectations of childbirth compared to controls. Johnson and Slade (2002) found that this did not generalize to a UK sample. It is unclear whether this discrepancy in findings may be due to the lack of cultural validity of the W-DEQ or cultural variation

between Swedish and English samples and the effect of socially constructed norms of the expectations and experiences of childbirth.

Psychological interventions for fear of childbirth.

There are a small number of studies that have begun to investigate psychological interventions for women who are fearful of childbirth.

Nerum, Halvorsen, Sorlie & Oian (2006) found that 69% of women who had originally requested a CS due to fear of childbirth withdrew their request and went on to have a vaginal delivery following psychological input. These women were also found to have long-term satisfaction with their decision. Saisto, Salmela-Aro, Nurmi, Kononen & Halmesmäki (2001) conducted a randomised control trial comparing intensive Cognitive Behaviour Therapy based treatment with usual care and found that only 67% rather than 82% of women requested caesarean section. This suggests that cognitive therapy could be effective however a methodological flaw in this study was that there was no untreated control group, therefore outcomes cannot be confidently attributed to treatment alone. Saisto et al. (2001) found that women who received therapeutic input did not reduce their request for caesarean section but were more satisfied with their experience of childbirth than controls. Interestingly, a study by Ryding, Persson, Onell & Kvist (2003) found that women who had received counselling by midwives for fear of childbirth reported experiencing a more frightening experience of childbirth related to delivery than the comparison group. This suggests that midwifery led counselling may not be effective in itself and it may be necessary to deliver specifically tailored cognitive psychological interventions to challenge negative appraisals of childbirth. This body of work could link in

with researchers suggesting that health care staff should assist pregnant women to develop realistic appraisals of childbirth (Fenwick et al., 2005).

2.1 Study Rationale

It has been highlighted that the exploration of pregnant women's expectations in the antenatal period could potentially identify women at risk of having a negative birth experience and within this, women who are fearful of childbirth. Existing measurement tools may lack content and cultural validity and therefore the development of a psychometrically robust instrument based in the English language would make a useful contribution both clinically and as a research tool. Studies have suggested that unrealistic or negative expectations of childbirth are associated with less satisfaction with the childbirth experience and it is proposed that pregnant women should be assisted to develop realistic and positive expectations of childbirth. Studies utilising cognitive behaviour therapy may be effective in challenging women's unrealistic cognitive appraisals of childbirth, however before the outcome of interventions can be confidently determined it is necessary to have a reliable and valid measure to accurately assess pregnant women's expectations of childbirth.

2.2 Research Aim

Given the apparent clinical need to understand women's appraisals of childbirth, this study aimed to develop a brief, reliable and valid tool to measure childbirth expectations suitable for pregnant women in the UK – the Pais-Slade Expectations of Childbirth Scale (PSECS).

The development of this scale was based on the various stages of test construction suggested by Rust and Golombok (1989) on designing a person-based questionnaire.

Instrument development is an iterative process and it is therefore necessary to start off with more items than are finally desired (Rust & Golombok, 1989). The aim was for the final questionnaire to consist of 20 – 30 items and therefore the initial questionnaire required approximately 60 items.

Stage one - Items relating to childbirth expectations were generated via semi-structured interviews with members of the target population in order to ensure the relevance and appropriateness of items (Wackerbarth et al., 2002). This methodology ensures that the final questionnaire will be firmly grounded in the experience of the population it is intended for and contributes to content validity (Willig, 2001). For the purpose of item generation we are purely interested in the content of what pregnant women say and are not concerned with drawing conclusions from the data, therefore a descriptive content analysis was employed to analyse interview data (Krippendorf, 1980). Questionnaire items corresponding to these content areas were written to develop the initial version of the questionnaire.

Stage two - This initial version of the scale was piloted with a large sample of pregnant women and the underlying factor structure was explored. Scale analysis led to the refinement of items and a final version of the scale was developed. Lastly, initial assessment of the internal reliability and construct and concurrent validity of the measure was carried out.

3. Method

Stage one – Exploratory interviews for item generation

3.1 Participants

A total of eighteen pregnant women completed the semi-structured interview. The mean age of the sample was 31.72 years, ranging between 17 – 39 years. The mean gestation was 28.22 weeks, ranging between 10 – 38 weeks and seven women (38.9%) had not given birth before. Fifteen pregnant women were recruited from midwifery-led community clinics, two from consultant-led clinics and one pregnant women had been through the birth after-thoughts service indicating a previous traumatic birth. In addition three further participants reported having previous difficult births however had not received any formal support to cope with this. Participants were recruited from community clinics across the city in order to include socio-economic, cultural and educational diversity and to ensure heterogeneity of the sample. Further demographic details of the sample are shown in Table 1.

Table 1. Background characteristics of sample at Interview stage

	N	%
Occupation		
Employed	16	88.9
Unemployed	2	11.1
Marital status		
Married	9	50
Living with partner	7	38.9
Single	2	11.1
Partner's occupation		
Employed	17	94.4
Unemployed	1	5.6
Qualifications		
GCSE	3	16.7
NVQ	3	16.7
Degree	9	50
Postgraduate	2	11.1
Other	1	5.6
Parity		
Nulliparous	7	38.9
Parous	11	61.1
Medical complications		
Yes	7	38.9
No	11	61.1
Ethnicity		
White British	16	88.9
Asian or Asian British	1	5.6
Other	1	5.6

3.2 Measures

Interview schedule (Appendix 7) Data for items was generated through the use of semi-structured interviews. This interview approach allows the exploration of topics of interest identified by the researcher but also permits the interviewer to improvise questions to extend answers (Arksey & Knight, 1999). The interview schedule aimed to elicit thoughts, feelings and expectations in relation to childbirth. This is in line with the work carried out by Wijma et al. (1998) that cognitive appraisals of childbirth are an important indicator of childbirth experience. Informants were also asked specifically about concerns, as a

potential clinical use of the questionnaire is to highlight pregnant women who are fearful of childbirth.

A sentence completion task, which is a technique used in a clinical context to elicit cognitions about the negative cognitive triad, that is, beliefs about self, others and the world was also included in the interview schedule. This technique was developed by Padesky (1994) and involves asking the client to finish a number of sentences such as 'I am', 'others are', 'others see me as', 'the world is' and 'the future is', and giving instructions to not edit their answers. This method was adapted to make it suitable for eliciting cognitions regarding pregnant women's expectations of childbirth.

The interview schedule was piloted with a member of the study population in order to assess its clarity and whether it was fit for purpose. On the basis of this, a prompt asking respondents to focus on 'expectations' rather than 'hopes' was included. Data from the pilot interview was not included in the final analysis.

Demographics questionnaire (Appendix 8). Respondents were asked a number of background/demographic questions in order to help identify the characteristics of the person being interviewed. These included: age, education, occupation and pregnancy details and helped locate respondents in relation to other people (Patton, 2002).

3.3 Procedure

A Consultant Obstetrician or Midwife leading the antenatal clinic approached women meeting the inclusion criteria, which was all pregnant women over 16 years of age who were: 1) under the care of Sheffield Teaching Hospitals NHS Trust, 2) due to have a

vaginal delivery and 3) proficient enough in the English language to complete an interview regarding their expectations of childbirth.

Women who were interested in participating were then given a study Information Sheet (Appendix 9) and asked to give their written consent (Appendix 10). All interviews were carried out at participants' homes and lasted approximately forty minutes and were audio taped ready for transcribing. Demographic information was collected at the beginning of the interview as a means of easing respondents into the interview situation and building rapport. This information was continuously reviewed in order to ensure participant heterogeneity. This ensured that the full range of expectations was sampled, leading to good content validity of the questionnaire. Developing a set of questions that covered the key aspects of interest enhanced the validity of data collection. The sampling technique utilised ensured that all points of view were appreciated (Arksey & Knight, 1999). Reliability was maximised by limiting variations in interviewing practice and following the format of the schedule.

Ethics

The Chief Investigator conducted all of the interviews and was experienced in interviewing patients and in managing distress. Prior to the interviews commencing, the researcher again explained the purpose of the interview and details of the study and the limits of confidentiality. Clear guidance was given on managing potential disclosures of malpractice or if distress was highlighted. Interviewees were given the option of receiving a summary of the results of the study, as a matter of good practice and to ensure the credibility of the research. Ethical approval for this study was obtained from the North Sheffield Research Ethics committee (Appendix 3). Sheffield Teaching Hospitals NHS Trust provided Research and Development approval for this study (Appendix 4).

3.4 Qualitative analysis

The data analysis was conducted in parallel with data collection, which allowed the emergence of content areas to be monitored. When conducting qualitative research, the sample size is based on a balance between feasibility in terms of research and the quality of data. In this study, data collection was stopped when no new information emerged from additional informants, known as redundancy (Patton, 2002).

The interviews were analysed using content analysis (Krippendorff, 1980). This method of analysis usually refers to the analysis of text, and attempts to identify patterns and meaning in a volume of qualitative material. A systematic guide was developed for analysing the data generated from the semi-structured interviews. This provided a framework for indexing the data and retrieval of content relating to the topic of interest (Arksey & Knight, 1999). Transcripts were read and information relating to expectations, fears and concerns regarding labour and birth were extracted. Care was taken not to lose too much data through combining constructs to develop themes, as an aim of this study was to develop a questionnaire that is firmly grounded in the language and experience of the women it is developed for. A total of 135 constructs were initially identified from the transcripts and a table was constructed highlighting those participants that endorsed that construct (Appendix 11).

Table 2 shows which constructs were combined due to duplication and comprehensiveness, and the new combined theme. A total of 50 constructs were deleted, leaving 85 constructs. Items for the questionnaire were then written based on these remaining individual constructs. Five category areas emerged after content analysis, which were: expectations of staff, environment, partner, labour and birth and items were written according to these.

Table 2. Table of collapsed themes

Original themes	Collapsed theme
<ul style="list-style-type: none"> -Staff will be responsive to my needs. -Staff will follow my wishes -Staff will not listen to my requests 	<ul style="list-style-type: none"> } Staff will not respect my wishes.
<ul style="list-style-type: none"> -Staff will make assumptions about my ability to deal with labour. -Staff will assume I know what I am doing 	<ul style="list-style-type: none"> } Staff will assume I know what to do when I am in labour.
<ul style="list-style-type: none"> -Staff will offer me reassurance -Staff will motivate me to carry on through labour 	<ul style="list-style-type: none"> } Staff will motivate me to get through labour
<ul style="list-style-type: none"> -Staff will be adequately trained -Staff will tell me what I need to do when I am in labour -I trust staff to make the right decision for me 	<ul style="list-style-type: none"> } Staff will have the right training to provide good care for me
<ul style="list-style-type: none"> -I will be provided with a relaxing environment -The ward will be pleasant 	<ul style="list-style-type: none"> } The ward will be a relaxing environment
<ul style="list-style-type: none"> -My partner will get in the way -My partner will irritate me 	<ul style="list-style-type: none"> } I will find my partner annoying
<ul style="list-style-type: none"> -My partner will not get to me in time -I will be left alone 	<ul style="list-style-type: none"> } I worry my partner will be late for the birth
<ul style="list-style-type: none"> -Partner will try hard to support me -Partner will encourage me not to give up 	<ul style="list-style-type: none"> } My partner will do their best to support me
<ul style="list-style-type: none"> -Partner will be traumatised -Partner will be scared 	<ul style="list-style-type: none"> } My partner will find childbirth traumatic
<ul style="list-style-type: none"> -Partner will help me relax -Partner is knowledgeable about childbirth 	<ul style="list-style-type: none"> } My partner will know how to help me
<ul style="list-style-type: none"> -Labour will be challenging -Labour will be very difficult 	<ul style="list-style-type: none"> } Labour will be very difficult

-Labour is scary -I will be scared/frightened of going into labour	} Labour will be scary
-Labour will be too long -Labour will be slow -Labour will be too quick	} I worry about the length of labour
-Worry about needing emergency surgery -Something will go wrong-medical complication	} I worry I will need emergency surgery
-My expectations are realistic -I lack knowledge -I feel knowledgeable about labour -I feel prepared	} I know all I need to know about labour
-I will not be able to physically cope with labour -I will not be able to emotionally cope	} I will have the stamina to cope with labour
-I will need an epidural -I will need drugs to cope with pain -I will manage without pain relief	} I will need medication to manage the labour pain
-I will not be able to accomplish a natural delivery -Baby will be too big for me to give birth naturally	} I will not be able to give birth naturally
-I will feel like a mother when I give birth -I will not bond with the baby -Maternal feeling will not kick in	} My maternal feelings will not kick in
-When I give birth I will feel nervous -When I give birth I will feel apprehensive -When I give birth I will feel stressed	} I will be anxious
-When I give birth I will be overwhelmed -Aware of emotions	} I will be overwhelmed with emotion

Exclusion

Information pertaining to expectations in relation to the period after the birth was excluded, as the study was exclusively interested in the childbirth process. The aim of the analysis stage was to include the widest range of expectations and therefore the procedure for extraction erred on the side of inclusivity. Constructs were recorded using participants' own words as much as possible so that the final measure was firmly grounded in the language and views of the women it is intended for.

Reliability of data analysis

To assess the consistency of data analysis an additional member of the research team examined the categories and indexing procedure, as a means of establishing the trustworthiness of the findings. Another researcher, who followed the procedure for analysis, also independently rated a sample of transcripts. There was a high degree of inter-rater agreement (87%) suggesting that the guide for analysis was clear and robust. Barbour (2001) suggests that involving the research team in analysis of interview transcripts improves the rigour and quality of research.

3.5 Development of the initial version of the PSECS.

Instrument development is an iterative process therefore it was necessary to start off with more items than was desired for the final questionnaire. Rust and Golombok (1989) suggest that at least twice as many items should be used as needed. The aim was for the final questionnaire to consist of approximately 30 items and therefore a pool of 85 items was sufficient. This allows those items that are most discriminating and reliable to be selected for the final scale (Kline, 2000). Instructions were given asking participants to respond to items according to their feelings over the past month and a five-point Likert-style response

scale was employed ranging from “Strongly Agree” to “Strongly Disagree” (Likert, 1932). This five-point response format was chosen as it enabled respondents to meaningfully differentiate between options and express themselves adequately (Rust & Golombok, 1989). Items were written in a clear and specific way in order to counter social desirability and extreme responses. Items were also worded both positively and negatively in order to counter acquiescence. Attention was paid to the readability and comprehensiveness of items and the use of double negatives was avoided (Kline, 2000).

Face Validity

The questionnaire was checked for clarity and ease of completion with five women across a range of stages of pregnancy and feedback was incorporated into the development of the initial version of the questionnaire. This was a convenience sample identified by the Chief Investigator through the process of snowballing. In addition a panel of five professionals: a Consultant Obstetrician, a Clinical Psychologist, a Midwife, a Research Midwife and a Governance Co-ordinator assessed all questionnaire items. All were involved in the care of pregnant women and acted as expert reviewers to check the face and content validity of the items generated. This allowed us to capitalize on the advantages of multidisciplinary insight and to increase conceptual development (Barry, Britten, Barber, Bradley & Stevenson, 1999). Individuals were invited to comment on the clarity of items, instructions, layout and the response format. They also assessed whether they felt that the domain of childbirth expectations was adequately covered, which contributed to content validity. Minor modifications were made to the wording of items and instructions, based on feedback given resulting in the development of the initial version of the Pais-Slade Expectations of Childbirth Scale (PSECS) (Appendix 12).

Stage Two – Pilot study of the PSECS

3.6 Participants

A total of 151 completed questionnaire booklets were returned. Three respondents had omitted to answer more than 10% of the questions and were excluded from the study as a means of quality control. A sample of 148 remained and gave a response rate 25%.

The mean age of the sample of participants was 31.36 years, ranging from 19 – 45 years.

The mean gestation was 23.38 weeks, ranging from 14 – 31 weeks. Additional demographic details of this can be found in Table 3.

Table 3. Background characteristics of sample at pilot stage

	N	%
Occupation		
Employed	97	65.5
Unemployed	48	32.4
Sick leave	1	0.6
Marital status		
Married	94	63.5
Living with partner	41	27.7
Single	11	7.4
Other	2	1.4
Qualifications		
GCSE	33	22.3
A level	12	8.1
NVQ	29	19.6
Degree	31	20.9
Post-graduate	25	16.9
Other	10	6.8
Partner's occupation		
Employed	124	83.8
Unemployed	14	9.5
No. of children		
0	2	1.3
1-2	127	85.5
3-4	14	9.5
5-7	5	3.4
Pregnancy history		
Miscarriage	51	34.5
Stillbirth	4	2.7
Termination	13	8.8
Current pregnancy		
Medical Complications	43	29.1
Planned caesarean section	19	12.8
Ethnicity		
White	139	93.9
Asian or Asian British	6	4.1
Black or Black British	3	2.0

According to the Antenatal booking data of the service in which this research was completed (April 2008 to March 2009) the pilot stage sample was representative of the population on all characteristics apart from parity (data obtained through personal communication, May 2009).

Only 1.3% of respondents had not given birth before which meant that it was not possible to analyse responses according to parity. This issue will be explored further in the discussion section.

3.7 Measures

Demographics questionnaire (Appendix 6) Participants were asked to give details of their; gestation, age, occupation, marital status, partner's occupation, education, parity, pregnancy medical history, thoughts relating to childbirth and ethnicity

Initial version of the Pais-Slade Expectations of Childbirth Questionnaire (PSECS)

(Appendix 12). A questionnaire developed based on the items generated from interviews with pregnant women from the first stage of this study.

State Trait Anxiety Inventory (STAI: Spielberger, Gorsuch & Lushene, 1983) (Appendix 5). The STAI is a commonly used questionnaire for measuring subjective anxiety. It is a standardised self-report measure with a total of 40 items, separated into two scales of 20 items each: the State scale measures anxiety which is considered to be transient and situation specific and the Trait scale measures anxiety which is more stable and said to be a personality construct. The STAI has been shown to discriminate between healthy controls and patients with anxiety indicating that the scale has good construct validity. It has also been shown to be reliable with median alpha coefficients for the State Anxiety and Trait Anxiety to be .92 and .90 respectively. The STAI has been used in pregnant samples and shown to correlate highly with antenatal and anxiety measures (Austin, Tully & Parker, 2007).

3.8 Procedure

Questionnaire booklets were sent to 600 pregnant women over the age of 16 years who were between 13 and 36 weeks gestation. This time frame was chosen as at 13 weeks gestation, the main risk of loss of pregnancy has passed and after 36 weeks some of the sample may have been lost to delivery. All participants were registered at one hospital site in Sheffield. Questionnaire booklets were sent via post containing; a covering letter from the hospital department (Appendix 13), information sheet, (Appendix 14), initial version of the PSECS (Appendix 12), the *State Trait Anxiety Inventory* (STAI: Spielberger, Gorsuch & Lushene, 1983) (Appendix 5) and a background questionnaire (Appendix 6).

Questionnaires were returned via a freepost system and responses were anonymous.

Plan of statistical analyses

All data was analysed using SPSS for Windows version 14.0. Initial item analysis was carried out to check the facility and discrimination of individual items (Rust & Golombok, 1989). The remaining items of the PSECS were analysed using Principal Components Analysis to understand the underlying scale structure (Tabachnick & Fidell, 1999). Initial assessment of internal consistency was carried out to develop a final version of the scale and the construct and concurrent validity of the final PSECS was assessed.

4. Results

4.1 Scale Analysis

Scale analysis is an iterative process with the aim of selecting the best items for the final version of the questionnaire. Items are therefore subjected to a stringent evaluation process (Rust & Golombok, 1989). Items from the PSECS questionnaire were first analysed for facility and discrimination in order to understand the way in which they operated.

The mean, standard deviation and distribution for each item were explored. Items with a mean close to the extreme value of the response scale (either 1 or 5) or with a small standard deviation were deemed to not be adequately discriminating between respondents and were deleted. An additional check was made by looking at the distribution of responses and if there was <5% of responses in either the 'agree' or 'disagree' direction the item was deleted. As a result 18 items were deleted through this process, leaving 67 items. A number of items were also reversed scored so that all responses were operating in the same direction, so that higher scores indicated more negative expectations of childbirth (Table 4)

Table 4. Responses to the initial version of the PSECS

Item	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)	Mean	S.D
Staff will listen to what I ask for*	56 (38)	80(54)	9 (6)	2 (1)	1 (0.7)	1.73	.70
Staff will assume I know what to do when I am in labour†	11(7.5)	35(24)	26 (18)	60 (41)	14 (10)	3.21	1.14
Staff will have the right training to provide good care for me*	77 (52)	56(38)	11 (7)	2(1)	2 (1)	1.62	.80
I trust that staff will make the right decision for me	55 (37)	64(43)	20 (13)	8 (5)	1(0.7)	1.89	.88
I expect there will not be enough staff on duty†	17 (11)	38(26)	51 (34)	30 (20)	77 (7)	2.86	1.10
Staff will help me to relax	24 (16)	90(61)	20 (14)	14 (10)	0	2.16	.81
Staff will offer me emotional support	27 (18)	72(49)	33 (23)	15 (10)	1 (0.7)	2.26	.90
Staff will leave me on my own†	3 (2)	45(30)	41 (28)	43 (29)	16 (11)	3.16	1.04
Staff will be patient with me*	27 (18)	89(60)	29 (20)	3 (2)	0	2.05	.68
Staff will not treat my partner with respect*†	2 (1)	4 (3)	13 (9)	74 (50)	55 (37)	4.19	.81
Staff will motivate me to get through labour*	52 (35)	78(53)	13 (9)	5 (3)	0	1.80	.74
Staff will not respect my wishes†	2 (1)	11 (7)	18 (12)	70 (43)	47 (32)	4.01	.93
Staff will be interested in me	28 (19)	75(51)	29 (20)	13 (9)	3 (2)	2.24	.93
Staff will not offer me adequate pain relief†	0	8 (5)	19(13)	75 (51)	46 (31)	4.07	.81
The labour ward will have space for me	30 (20)	58(40)	46 (31)	11 (8)	2 (1)	2.30	.93
I will get the amount of privacy I want on the labour ward	28 (19)	57(39)	35 (24)	22 (15)	5 (3)	2.45	1.07
The labour ward will be a relaxing environment	22 (15)	47(32)	34 (23)	37 (25)	7 (5)	2.73	1.14
My partner will help me relax*	62 (42)	69 (47)	14 (10)	2 (1)	1 (0.7)	1.72	.75
My partner will not be able to cope seeing me in pain†	5 (3)	18 (12)	21 (14)	77 (52)	27 (18)	3.70	1.02
My partner will find childbirth traumatic†	7 (5)	17 (12)	27 (18)	71 (48)	26 (18)	3.62	1.05
My partner will do their best to support me*	90 (61)	50 (34)	5 (3)	2 (1)	1 (0.7)	1.47	.69
My partner will feel helpless†	13 (9)	42 (28)	35 (24)	48 (32)	10 (7)	3.00	1.11
My partner will panic†	6 (4)	13 (9)	27 (18)	70(47)	32 (22)	3.74	1.03
My partner will know how to help me	19 (13)	61 (41)	47 (32)	19 (13)	2 (1)	2.49	.92
I will find my partner annoying†	7 (5)	17 (12)	42 (28)	54 (37)	28 (19)	3.53	1.07
I worry my partner will be late for the birth	7 (5)	12 (8)	10 (7)	59 (40)	60 (41)	4.03	1.11

Table 4. Responses to the initial version of the PSECS

Item	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)	Mean	S.D
I worry that labour will be extremely painful [†]	40 (27)	59 (40)	11 (7)	35 (24)	3 (2)	2.34	1.17
I worry about the length of my labour (either too long or too short)	40 (27)	65 (44)	16 (11)	25 (17)	2 (1)	2.22	1.07
My body will fail me during labour [†]	10 (7)	18 (12)	35 (24)	70 (47)	15 (10)	3.42	1.05
I will not be able to give birth naturally [†]	11 (7)	19 (13)	41 (28)	60 (41)	16 (11)	3.99	7.94
I will have the stamina to cope with labour	21 (14)	78(53)	31 (21)	15 (10)	3 (2)	2.33	.91
I will not be able to cope with the pain [†]	14 (10)	31 (21)	34 (23)	57 (39)	12 (8)	3.15	1.13
I will need medication to manage the labour pain	37 (25)	44 (30)	45 (30)	15 (10)	7 (5)	2.40	1.11
I will not get the pain relief I want [†]	5 (3)	8 (5)	32 (22)	80 (54)	23 (16)	3.73	.91
I know all I need to know about labour	14 (10)	48 (32)	39 (26)	40 (27)	7 (5)	2.85	1.07
I am emotionally strong enough to cope with labour	32 (21)	78(53)	27 (18)	12 (8)	0	2.14	.84
I will feel vulnerable [†]	6 (4)	50(34)	31 (21)	53 (36)	8 (5)	3.05	1.04
I will be hysterical [†]	1 (0.7)	7 (5)	19 (13)	74 (50)	46 (31)	4.07	.83
Labour will be very comfortable*	3 (2)	2 (1)	26 (18)	71 (48)	46 (31)	4.05	.85
I will feel extremely anxious when in labour [†]	12 (8)	32(22)	46 (32)	46 (32)	11 (8)	3.08	1.08
Labour will be lovely	1 (1)	8 (5)	25 (17)	63 (43)	50 (34)	4.02	.92
I will be very worried when I am in labour [†]	10 (7)	39 (26)	39 (26)	45 (30)	15 (10)	3.11	1.11
Labour will be horrible [†]	8 (5)	26 (18)	44 (30)	61 (41)	9 (6)	3.25	.10
Labour will be worthwhile*	101 (69)	36 (25)	8 (5)	1 (0.7)	1 (0.7)	1.40	.69
Labour will be very difficult [†]	28 (19)	64 (43)	40 (27)	15 (10)	1 (0.7)	2.30	.92
Labour will be exhausting* [†]	51 (35)	73(49)	17 (12)	6 (4)	1 (0.7)	1.87	.82
Labour will be scary [†]	24 (16)	54(37)	26 (18)	37 (25)	6 (4)	2.64	1.15
Labour is unknown [†]	29 (20)	28(19)	23 (16)	43 (29)	24 (16)	3.03	1.39
Labour will be complicated [†]	8 (5)	23(16)	81 (55)	32 (22)	4 (3)	3.01	.84
In labour I will be looking forward to meeting my baby*	107(72)	27(18)	7 (5)	5 (3)	2 (1)	1.43	.84
I will lose control during labour [†]	6 (4)	28(19)	33 (22)	66 (45)	15 (10)	3.38	1.03
I will lose my temper [†]	5 (3)	19(13)	29 (20)	69 (47)	26 (18)	3.62	1.03
I will embarrass myself [†]	6 (4)	41(28)	21 (14)	66 (45)	14 (10)	3.28	1.09
I will be able to have the labour I want	9 (6)	54(37)	65 (44)	18 (12)	2 (1)	2.66	.82
I will feel I have cheated if I need pain relief [†]	1 (0.7)	54(37)	65 (44)	18 (12)	2 (1)	4.02	.95
I will feel physically exposed during labour [†]	16 (11)	42(28)	23 (16)	58 (39)	9 (6)	3.01	1.17
I will be fully aware of everything during labour	6 (4)	46(31)	51 (35)	41 (28)	4 (3)	2.94	.93

Table 4. Responses to the initial version of the PSECS

Item	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)	Mean	S.D
I will get to the hospital in time	17 (12)	79(55)	40 (28)	8 (6)	1 (0.7)	2.29	.77
I will need emergency surgery†	20 (14)	43(29)	36 (24)	38 (26)	11 (7)	2.84	1.17
I will be worried about the health of my baby†	34 (23)	72(49)	19 (13)	23 (16)	0	2.21	.97
I will get the privacy I want	11 (8)	65(44)	45 (31)	23 (16)	3 (2)	2.61	.91
I will be too tired to appreciate the birth†	1 (0.7)	23(16)	52 (35)	62 (42)	10(7)	3.39	.85
I will feel calm during labour	8 (5)	31(21)	60 (41)	35 (24)	14 (10)	3.11	1.02
I worry about trauma to my body†	10 (7)	40(27)	34 (23)	55 (37)	9 (6)	3.09	1.08
My body will be hurt during labour†	19 (13)	57(39)	35 (24)	30 (20)	7 (5)	2.66	1.09
I will feel excited when I give birth	70 (47)	56(38)	9 (6)	11 (7)	2 (1)	1.78	.95
I will be scared when I give birth†	29 (20)	59(40)	20 (14)	36 (24)	4 (3)	2.51	1.14
I will be relieved when I give birth*	63 (43)	68(46)	10 (7)	7 (5)	0	1.74	.79
I will be anxious when I give birth†	32 (22)	60(41)	26 (18)	26 (18)	3 (2)	2.37	1.07
I will feel like a mother when I give birth	71 (48)	50(34)	16 (11)	8 (5)	2 (1)	1.78	.94
I will be tired when I give birth*†	82 (55)	55(37)	6 (4)	4 (3)	1 (0.7)	1.56	.76
I will cry when I give birth	43 (29)	45(30)	45(30)	14 (10)	1 (0.7)	2.22	.10
It will be an amazing experience*	62 (42)	57(39)	24 (16)	3 (2)	2 (1)	1.82	.87
I will be out of control when I give birth†	2 (1)	13 (9)	36 (24)	67 (45)	30 (20)	3.74	.93
I will be elated when I give birth	52 (35)	46(31)	38 (26)	9 (6)	3 (2)	2.09	1.02
I will be angry when I give birth*†	0	2 (1)	15(10)	59 (40)	72 (49)	4.36	.72
I will embarrass myself when I give birth†	2 (1)	12 (8)	39 (26)	62 (42)	33 (22)	3.76	.94
I will feel happy when I give birth*	91 (62)	46(31)	9 (6)	1 (0.7)	1 (0.7)	1.48	.70
I will be relieved that pregnancy is over	52 (35)	51(35)	26 (18)	18 (12)	1 (0.7)	2.09	1.04
I will be overwhelmed with emotion	56 (38)	42(28)	41 (28)	9 (6)	0	2.02	.95
I will be relieved that baby is healthy*	120(81)	25(17)	2 (1)	0	1 (0.7)	1.22	.53
I will be an emotional wreck†	8 (5)	15(10)	35 (24)	60 (41)	29 (20)	3.59	1.08
My maternal feelings will not kick in†	3 (2)	6 (4)	22 (15)	61 (41)	56 (38)	4.09	.93
I will be proud when I give birth*	100(68)	37(25)	9 (6)	1 (0.7)	1 (0.7)	1.42	.70

* - item deleted

† - item reversed

4.2 Principal Components Analysis

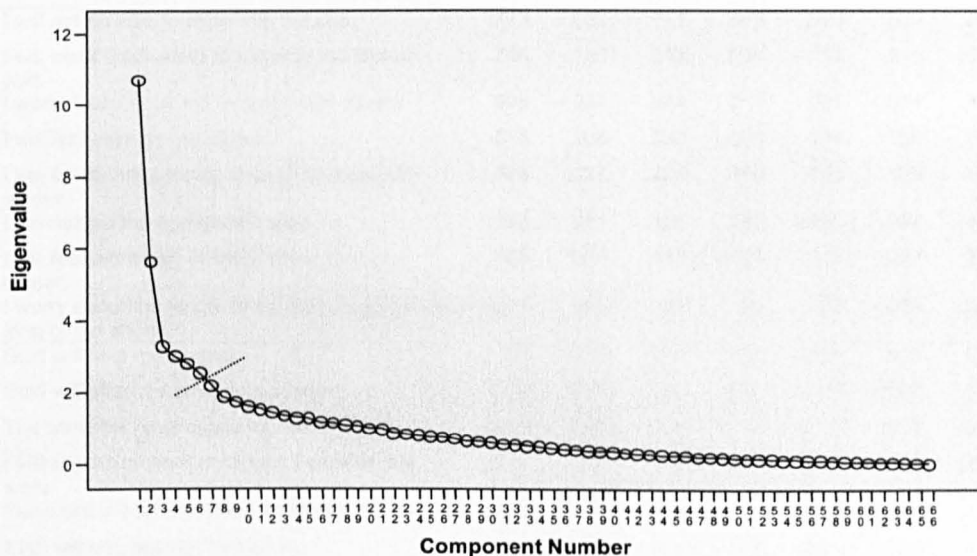
A principal components analysis (PCA) was carried out on the remaining 67 items of the PSECS. This method enabled the exploration of the underlying scale structure of the PSECS through the identification of the main constructs possibly underpinning childbirth expectations (Kline, 2000).

The Kaiser-Meyer-Olkin statistic suggested that the sample size of 148 was adequate for PCA (.63). Also a sample size of less than 100 is said to be adequate when all communalities are above .6 which they were in this case (MacCallum, Widaman, Zhang & Hong, 1999). Inspection of the correlation matrix between the 67 items also suggested that PCA was feasible, as there were a reasonable number of correlations above .3 (Kline, 2000). Bartlett's test for sphericity indicated that the null hypothesis that the variables were uncorrelated could be confidently rejected ($p < .001$).

The unrotated PCA found 21 factors with eigenvalues greater than 1.0 (Kaiser-Guttman criterion), which accounted for 74.66% of the variance. Cattell (1978) reports that in large matrices the Kaiser-Guttman criterion overestimates the number of factors.

However further examination of Cattell's Scree test (Figure 1) suggested that six factors should be extracted, decided by retaining the components before the levelling off.

Figure 1. Scree plot from the Principal Components Analysis, showing eigenvalues and six factors extracted.



The total variance accounted for by the first six factors was 42.52%. Although a higher factor solution may have accounted for a greater proportion of the variance it was decided that a six- factor solution gave a clearer picture.

An unrotated 'factor plot' of the loadings of the 67 variables on the six factors revealed a moderate number of cross-loadings, indicating a complex structure. Only variables with factor loadings greater than .4 were interpreted as recommended by Tabachnick and Fidell (2006). The PCA was re-run with an orthogonal rotation, using the varimax method that suggested a very near simple structure (variable loadings of $>.4$ onto only one factor), which is desirable. Table 5 illustrates factor loadings, communalities and the items that constitute each factor after orthogonal, varimax rotation.

Table 5. Factor Matrix showing factor loadings and communalities (h^2) with orthogonal, varimax rotation

Items	Components						h^2
	F1	F2	F3	F4	F5	F6	
I will not be able to cope with the pain	.775	-.062	.141	.076	.070	.020	.635
I will need medication to manage the labour pain	.744	-.136	.032	.068	-.115	-.016	.590
I worry that labour will be extremely painful	.699	-.034	.084	.211	.091	-.091	.558
I will feel calm during labour	.583	.086	.330	.249	.199	.188	.593
I am emotionally strong enough to cope with labour	.578	.117	.231	.142	.180	.100	.464
I will not get the pain relief I want	.532	.231	.131	.153	-.151	.207	.443
I will feel extremely anxious when I am in labour	.526	-.001	.513	-.085	.316	-.007	.647
I worry about the length of my labour (either too long or too short)	.477	-.005	.199	.172	.167	-.019	.326
Staff will help me to relax	.036	.810	.050	-.006	.021	.083	.668
Staff will offer me emotional support	.070	.741	.068	.042	-.008	.097	.571
The ward will have space for me	-.056	.690	-.091	.113	.041	.030	.502
I will get the amount of privacy I want on the ward	-.241	.623	.129	.081	.019	-.049	.473
The ward will be a relaxing environment	-.235	.620	.166	.087	-.034	.077	.483
Staff will not respect my wishes	.129	.616	-.094	-.028	.061	.016	.410
Staff will be interested in me	-.018	.614	-.035	.132	-.069	.130	.418
Staff will leave me on my own	-.036	.595	-.185	.218	.140	-.068	.462
Staff will not offer me adequate pain relief	.253	.589	.131	-.086	.026	.055	.462
I expect that there will not be enough staff on duty	.107	.557	-.020	-.083	-.010	.000	.329
I trust that staff will make the right decision for me	.004	.478	-.051	-.158	-.014	.257	.320
I will get the privacy I want	-.063	.464	.166	.294	-.226	.046	.387
Labour will be scary	.395	-.029	.631	.073	.315	-.021	.660
Labour will be complicated	.138	.032	.625	.113	.300	.128	.530
I worry I will need emergency surgery	.055	.040	.599	.118	.111	-.060	.393
I will be anxious when I give birth	.228	-.050	.590	.033	.129	-.257	.486
I will be scared when I give birth	.196	-.120	.553	.090	.170	-.290	.480
I will not be able to give birth naturally	.182	-.031	.534	.247	-.054	.140	.403
Labour is unknown	-.074	-.071	.525	.179	.084	-.091	.333
I will be very worried when I am in labour	.418	.054	.504	-.016	.331	.118	.555
I know all I need to know about labour	-.152	.107	.495	.088	-.020	-.023	.288
My body will fail me during labour	.376	.049	.485	.261	-.068	.140	.471
I will be able to have the labour I want	.051	.240	.416	.163	-.126	.214	.322
I will be worried about the health of my baby	.104	.054	.382	.217	.081	-.026	.241
I will be out of control when I give birth	.033	.122	.084	.695	.115	.013	.520
I worry I will embarrass myself during labour	.356	.046	.122	.652	.050	-.110	.583
I will embarrass myself when I give birth	.199	.090	.116	.629	.231	-.145	.532
I will be too tired to appreciate the birth	.017	.087	.047	.591	.045	.250	.423

Table 5 continued. Factor Matrix showing factor loadings and communalities (h²) with orthogonal, varimax rotation

Items	Components						h ²
	F1*	F2	F3	F4	F5	F6	
I worry I will lose control during labour	.370	.245	.177	.581	.139	.079	.592
I will be an emotional wreck when I give birth	.097	-.042	.177	.550	.347	-.041	.467
I worry about trauma to my body	-.018	-.139	.259	.518	-.109	.175	.397
My body will be hurt during labour	.182	-.069	.212	.517	-.104	-.012	.360
I will feel physically exposed during labour	.034	.018	.272	.411	.031	.027	.246
I will be hysterical during labour	.367	.069	.057	.390	.284	.014	.376
My partner will panic	.106	.023	.107	.060	.755	.017	.596
My partner will find childbirth traumatic	.025	-.106	-.030	.252	.677	.086	.542
My partner will not be able to cope seeing me in pain	.203	-.087	.092	.022	.671	-.027	.509
I will find my partner annoying	-.006	.157	.079	-.049	.590	.029	.382
My partner will feel helpless	.036	-.098	.142	.131	.560	-.023	.363
My partner will know how to help me	.089	.190	.229	-.134	.455	.400	.481
Labour will be horrible	.397	.123	.111	.267	.418	.225	.481
I will feel excited when I give birth	-.162	.114	.005	.080	.150	.752	.634
I will be overwhelmed with emotion when I give birth	-.016	.017	-.070	-.093	-.018	.716	.526
I will feel like a mother when I give birth	.039	.159	.078	.182	.088	.655	.502
I will be elated when I give birth	.232	-.097	.084	-.109	.313	.629	.576
I will cry when I give birth	-.044	.119	-.276	-.039	-.108	.556	.414
My maternal feelings will not kick in when I give birth	.204	.104	.062	.309	.037	.446	.353
I will be fully aware of everything during labour	.080	.079	.015	.303	-.228	.351	.281
labour will be lovely	.283	.048	.080	.171	.150	.285	.222
I will have the stamina to cope with labour	.309	.041	.073	.201	.115	.106	.167
I will be relieved that the pregnancy is over	-.280	.144	.149	-.077	-.204	.130	.186
I will feel I have cheated if I need pain relief	-.260	.071	.208	.169	.096	.108	.165
I will get to the hospital in time	-.186	.014	.098	.043	-.030	.142	.067
Staff will assume I know what to do when I am in labour	-.010	.225	-.356	.051	.047	-.233	.237
I will feel vulnerable during labour	.111	.092	.329	.191	.006	.224	.216
I worry that I will lose my temper during labour	.339	.065	-.042	.286	.387	.102	.363
Labour will be very difficult	.306	.020	.256	-.008	.356	.063	.290
I worry my partner will be late for the birth	-.172	.212	.179	.013	.234	.034	.162

*Factor labels: F1 coping and robustness to pain
 F2 staff responsive to needs
 F3 fear
 F4 out of control and embarrassed
 F5 perception of partner's coping
 F6 positive anticipation of birth

The factor matrix indicated that two items: 'I will feel extremely anxious when I am in labour' and 'I will be very worried when I am in labour' cross-loaded onto factors one and three. On further examination, the item 'I feel extremely anxious when I am in labour' statistically loaded equally on both factors, but conceptually fitted better onto factor three. The item 'I will be very worried when I am in labour' was kept in factor three as it loaded more heavily onto this factor. The item 'I will get the privacy I want' was deleted from factor two, as it seemed to be a duplicate of 'I will get the amount of privacy I want on the ward'. Finally 'labour will be horrible' was deleted from factor six, as it did not fit conceptually with the other items, which were all about expectations of birth partner. Eleven items did not load onto any factor and all except 'I worry that I will lose my temper during labour' also had low communalities (<.3). These items were therefore excluded. These items can be seen in the last section of Table 5. This left a total of 54 items organised into six factors.

Labelling of subscales

For the remainder of this report the factors will now be referred to as 'subscales' in order to reflect their underlying meaning.

Subscale one (F1) consisted of seven items and accounted for 8.33% of the variance. Items relating to managing labour such as 'I will not be able to cope with the pain' and 'I will not get the pain relief I want' were combined to produce a scale labelled *coping and robustness to pain*

Subscale two (F2) accounted for 8.05% of the variance and consisted of 11 items covering expectations of the staff and hospital environment such as 'Staff will offer me emotional

support' and 'The ward will be a relaxing environment'. These items were combined to produce a scale of *staff responsive to needs*.

The third subscale (F3) accounted for 7.57% of the variance. There were 13 items in this scale relating to the adverse emotional responses to childbirth such as 'Labour will be scary' and 'I will be anxious when I give birth'. Items were combined to produce a scale labelled *fear*.

The fourth subscale (F4) contained 10 items and accounted for 6.83% of the variance and related to social persona. Items such as 'I will feel physically exposed during labour' and 'I worry I will lose control during labour' were combined to produce a scale labelled *out of control and embarrassed*.

Subscale five (F5) accounted for 6.33% of the variance and consisted of five items. These items related to expectations of the childbirth partner such as 'My partner will not be able to cope seeing me in pain' and 'My partner will panic'. These items were combined to produce a scale of *perceptions of partner's coping*.

The sixth subscale (F6) contained 6 items relating to the immediate aftermath of birth. These items accounted for 5.52% of the variance and contained items such as 'I will be overwhelmed with emotion' and 'I will feel excited'. This scale was labelled '*positive anticipation of birth*'

4.3 Reliability of the PSECS

The reliability of the subscales was analysed by computing the internal consistency for each subscale using Cronbach's Alpha. This is a measure of the extent to which each item is measuring the same construct (Kline, 2000). Item-subscale analysis indicated that the internal consistency was high in subscale two (*staff responsive to needs*) $\alpha = .86$, subscale four (*out of control and embarrassed*) $\alpha = .81$ and subscale five (*perception of partner's coping*) $\alpha = .77$. Deletion of any of the subscale items would not provide any meaningful change in alpha. Also all 'Corrected Item-Total Correlations' were above .3 indicating that the items are adequately correlated to the construct in which they are supposed to be measuring.

Item analysis of subscale three (*fear*) indicated that the largest improvement in alpha, from .85 to .86 was obtained by deleting the items 'I will be able to have the labour I want' and 'I know all I need to know about labour'. Therefore these two items were deleted from the subscale. In addition, the deletion of the item 'labour is unknown' would also have increased alpha, however this item was retained as the construct of 'uncertainty of labour' was highlighted as important in the content analysis. The item 'I will cry' was deleted from subscale six (*positive anticipation of birth*) as it resulted in an increase of alpha from .76 to .77

The internal consistency reliability of the final PSECS as measured by Cronbach's coefficient alpha was .89, placing it in the high reliability category ($\alpha > .08$) (Nunnally & Bernstein, 1994). There was no indication the deletion of any items would result in a meaningful increase on this criterion.

4.4 Final version of the PSECS

The remaining items were reviewed in order to assess whether the final item set reflected the content of the original item pool from the exploratory interviews. This was a means of assessing the content validity of the PSECS. It was concluded that important constructs from the domain of expectations of childbirth were still covered and it was not necessary for additional items to be included. Items were also inspected for redundancy and duplication. The final version of the PSECS consisted of 51 items (Appendix 15) At the subscale level, all six subscales were significantly correlated with the PSECS total score ($p = .01$) (Table 6).

4.5 Validity of the final PSECS

In order to ensure the construct validity of the PSECS, it was necessary to assess it against other theoretically established measures (Klein, 2000). It was hypothesized that there would be a modest positive correlation (.3-.5) between the PSECS and the STAI as negative expectations would have some concordance with anxiety regarding childbirth. The construct validity of the PSECS was assessed by calculating Pearson's correlation coefficient (r) between full-scale PSECS scores and the State and Trait subscales of the STAI (Table 6).

The full-scale PSECS score had a modest positive correlation with State anxiety ($r = .43, p = .000$) and Trait anxiety ($r = .38, p = .000$) revealing that the PSECS is positively related to general anxiety as measured by the STAI.

Table 6. Intercorrelations between PSECS subscales, full-scale PSECS and STAI subscales

Subscales		2.Staff responsive to needs	3.Fear	4.Out of control & embarrassed	5.Partner's coping	6.Positive anticipation of birth	Full scale PSECS	State anxiety	Trait anxiety
1.Robustness to pain	Pearson Correlation	.006	.545(**)	.472(**)	.305(**)	.162	.699(**)	.301(**)	.280(**)
	Sig. (2-tailed)	.942	.000	.000	.000	.050	.000	.000	.001
2.Staff responsive to needs	Pearson Correlation		-.066	.082	.067	.191(*)	.384(**)	-.034	-.059
	Sig. (2-tailed)		.436	.328	.421	.021	.000	.684	.488
3.Fear	Pearson Correlation			.484(**)	.361(**)	.076	.739(**)	.466(**)	.380(**)
	Sig. (2-tailed)			.000	.000	.362	.000	.000	.000
4.Out of control & embarrassed	Pearson Correlation				.267(**)	.167(*)	.724(**)	.265(**)	.226(**)
	Sig. (2-tailed)				.001	.045	.000	.001	.007
5.Partner's coping	Pearson Correlation					.216(**)	.564(**)	.338(**)	.356(**)
	Sig. (2-tailed)					.009	.000	.000	.000
6.Positive anticipation of birth	Pearson Correlation						.398(**)	.188(*)	.252(**)
	Sig. (2-tailed)						.000	.024	.002
Full scale PSECS	Pearson Correlation							.431(**)	.380(**)
	Sig. (2-tailed)							.000	.000
State anxiety	Pearson Correlation								.827(**)
	Sig. (2-tailed)								.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *fear* subscale (F3) had the highest correlation with state anxiety ($r = .47$). This is logical conceptually as the construct of fear is related to anxiety.

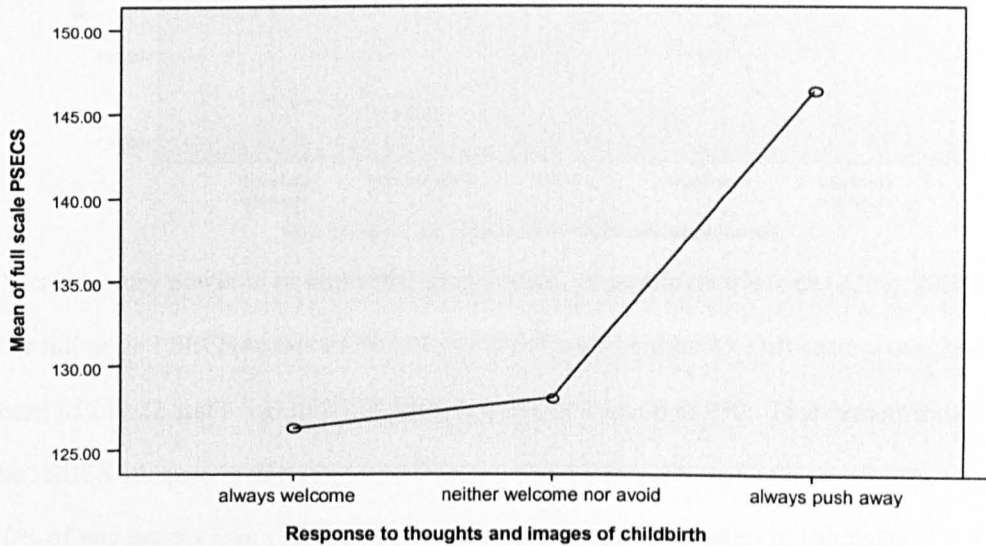
The *staff responsive to needs* subscale (F2) was not significantly correlated with any of the other subscales. It was also negatively correlated with the State and Trait anxiety subscales. Consequently, this subscale links the least conceptually with the other subscales. However it is important that this domain be included to ensure content validity as these subscale items correlated with the PSECS total score.

The *coping and robustness to pain, fear and out of control and embarrassed* subscales were all modestly significantly correlated with each other ($.47 < r < .55$) (Table 6) This indicates that they could be combined to produce an 'expectations of self in childbirth' scale.

As an assessment of concurrent validity the PSECS was correlated with question 11 of the demographic questionnaire (Appendix 6). This is a measure of subjective stress, which asked respondents about their experience of thoughts and images in relation to childbirth. It was hypothesized that women who push thoughts away would show more negative expectations of childbirth. It is suggested in the literature that women who are fearful of childbirth may use avoidance as a means of responding to this (Eriksson, Jansson & Hamburg, 2006). Correlational methods demonstrated that the full-scale PSECS score was significantly positively correlated with the product of frequency and experience of thoughts and images of childbirth ($r = .33, p < 0.001$). This suggests that women who had more negative expectations of childbirth were also experiencing more frequent and unpleasant thoughts about childbirth.

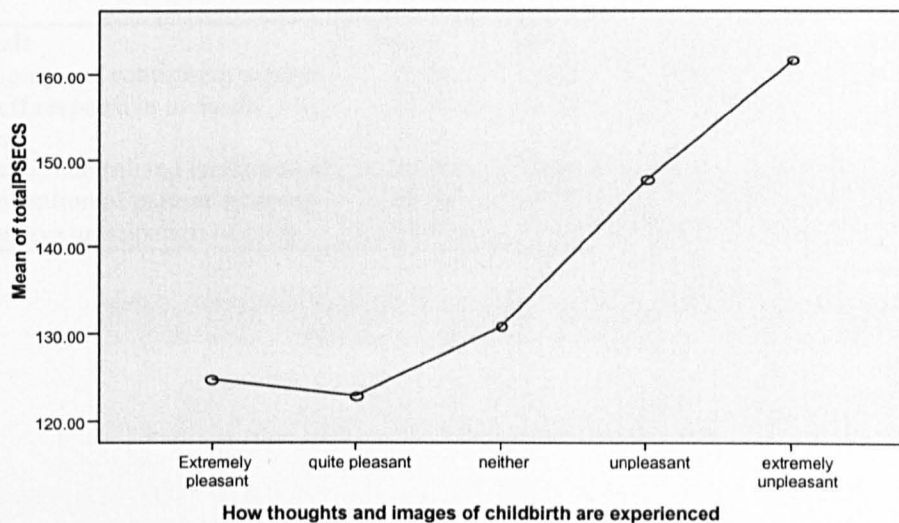
To confirm this finding, ANOVA was used between how women responded to and experience thoughts and images of childbirth and full-scale PSECS scores. The hypothesis that women who had more negative expectations of childbirth were more likely to push thoughts and images of childbirth away was supported ($F_{(2,82)} = 7.32, p < 0.01$) (Figure 2).

Figure 2 Graph to show the relationship between how pregnant women respond to thoughts and images of childbirth and full-scale PSECS scores



There was a significant difference between how thoughts and images of childbirth were experienced and full-scale PSECS scores ($F_{(4,80)} = 6.65, p < 0.01$). Figure 3 reveals that more negative expectations of childbirth are associated with more unpleasant thoughts and images of childbirth.

Figure 3. A graph to show how pregnant women experience thoughts and images of childbirth and its relationship with full-scale PSECS scores



Discriminatory power is an important characteristic of psychometric tests (Kline, 2000).

The full-scale PSECS scores were normally distributed (Figure 4). Full-scale scores had a mean of 130.22 and a S.D of 20.16 and could range from 50 to 250. This demonstrated that the PSECS adequately discriminated between respondents. The cut-off score for the top 10% of this sample was 155.70. See Table 7 for descriptive statistics of subscales

Figure 4. A histogram to show the distribution of full-scale PSECS scores

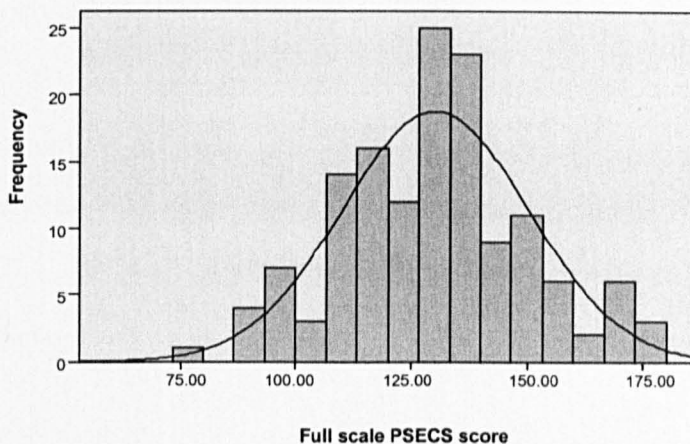


Table 7. Descriptive statistics for PSECS subscales

Subscale	Mean	SD
F1: Coping and robustness to pain	21.41	5.11
F2: Staff responsive to needs	25.95	6.88
F2: Fear	34.44	7.86
F3: Out of control and embarrassed	26.09	6.18
F4: Perception of partner's coping	14.90	4.25
F5: Positive anticipation of birth	9.59	3.47

5. Discussion

The aim of this study was to develop an English language based measure to assess pregnant women's expectations of childbirth. It was hoped that such a tool would enable the accurate identification of pregnant women who have a negative outlook towards childbirth.

Preliminary investigation of the psychometric properties of the scale in terms of its reliability and validity were also assessed.

The development of the PSECS seems to have met its research aims in terms of providing a scale that can be used to understand the range of expectations that women have regarding childbirth. A strength of this study was that items were generated by carrying out qualitative interviews with members of the target population. A decision was made not to consult the literature in addition to the interviews to ensure that the resulting scale would be firmly grounded in the experience of the women it is intended for, resulting in good content validity. The interviews provided rich data in terms of the range and depth of expectations that were generated, indicated by the number of items generated. It is noted that items for an existing tool measuring expectations of childbirth, the W-DEQ, were generated based on interviews with two experts and therefore may lack content validity. Wackerbarth et al. (2002) reported that this methodology may neglect key constructs. Additionally studies have shown that there are cross-cultural differences in the nature of childbirth expectations and therefore questionnaires may not be valid across cultures (Johnson & Slade, 2002; Serçekuş & Okumuş, 2007). This highlighted the need for a scale to be developed within the population it is intended for to ensure cultural validity.

The PSECS was subjected to Principal components analysis, which revealed that it consisted of six dimensions; '*coping and robustness to pain*', '*staff responsive to needs*', '*fear*', '*out of control and embarrassed*', '*perceptions of partner's coping*' and '*positive anticipation of birth*'. This indicated that the content of expectations of childbirth in this sample were not just positive or negative (unifactorial) but related to specific constructs, of which one is 'fear'. This 'fear' subscale is particularly useful, as it has been identified that the WDEQ, an existing measure of fear of childbirth, may lack cultural validity for pregnant women in England.

The dimensions of the PSECS reflected key content areas that have been highlighted in the childbirth expectations literature: pain (Hodnett, 2002; Lally et al., 2008), control (Gibbins & Thomson, 2001; Goodman et al., 2004; Slade et al., 1993), social support from health care staff and partner (Fisher et al., 2006; Hauck et al., 2007; Waldenstöm et al., 1995), fear (Wijma et al., 1998) and positive anticipations of birth (Fenwick et al., 2005). This acts as a further content validity check.

The PSECS appears to have good internal reliability, easily meeting the criterion of an alpha coefficient of .7 for a research instrument (Nunnally & Bernstein, 1994).

As predicted the PSECS showed a modest and positive correlation with both the State and Trait Anxiety subscales indicating that the PSECS does in part, tap into the anxiety domain, providing an assessment of its construct validity. This finding is supported by studies that have found a significant association between negative expectations of childbirth and anxiety (Laursen, Hedegaard & Johansen, 2008; Zar, Wijma & Wijma, 2002). Assessment of concurrent validity indicated that negative expectations were significantly associated with the avoidance of thoughts and images in relation to childbirth. It is highlighted in the

literature that avoidance is a coping mechanism used to manage feelings of anxiety and fear regarding childbirth (Zar et al., 2002). The PSECS was developed in an English-speaking sample, however, both the item generation and piloting stages incorporated women from different ethnic backgrounds. The ethnic diversity of the sample at the pilot stage was representative of the population of women booked in for delivery at the hospital where recruitment took place. This increases the cultural validity of the scale.

It is recognised that the PSECS is longer than originally aimed for, which was a brief scale of approximately 30 items. However, the item set reflected the rich and diverse range of expectations that were generated from the semi-structured interviews. The process of item analysis was purposefully not too stringent as there was awareness that the sample used to pilot the PSECS was not heterogeneous. The selection of items was based on a balance between clinical utility and psychometric robustness, however at this initial stage of test construction, priority was given to the psychometric properties of the scale. Principal components analysis revealed that there were six underlying factors. Kline (2000) indicates that it is necessary to have sufficient numbers of items, as subscales with less than six items can lack reliability. It is recognised that the reliability of questionnaire measures increases with the number of items and that the high reliability of the PSECS is genuine rather than being due to the specificity of the item content (Kline, 2000).

Studies assessing women's expectations of childbirth during pregnancy have mainly done so in the third trimester (Gibbins & Thomson, 2001; Green et al., 1990; Slade et al., 1993). With regard to fear in particular, Laursen et al. (2008) found that the prevalence of fear of childbirth was stable over the course of pregnancy, although it was not stable between pregnant women, with some women being fearful in early pregnancy and some women

developing fear as the impending birth got closer. Ohman, Grunewald & Waldenström (2003) found that fear of childbirth peaked in the first and third trimester, with a pattern of less distress in mid-pregnancy, whereas Waldenström et al. (2006) reported that fear of childbirth tended to rise as pregnancy advanced. These findings suggest that fear of childbirth can possibly affect pregnant women across the stages of pregnancy and therefore it is necessary that a tool to detect women who may be fearful of childbirth needs to be valid across gestational stages.

The PSECS was validated in a sample of women across the second and third trimesters (52.1% and 47.9% respectively). It is clinically important to be able to assess women's childbirth expectations early enough during pregnancy so that there is sufficient time to offer and administer appropriate psychological intervention if needed.

5.1 Theoretical Implications

The development of the PSECS was based on the theory put forward by Lazarus which proposed that cognitive appraisals are influential in determining the reaction to, and coping with stress (Lazarus, 1982). Wijma et al. (1998) suggested that this theory could link to the experience of childbirth in that cognitions regarding childbirth determine how women react to environmental stressors and mediate the development and maintenance of anxiety in relation to childbirth. Gaining an understanding of a pregnant woman's appraisals of childbirth, in terms of expectations, seems to provide an indication of how she will react to the actual process of childbirth. Thus, such a tool as the PSECS may enable researchers to explore the factors that influence the development of negative expectations of childbirth.

5.2 Methodological Limitations

The sample characteristics at the pilot stage were a particular area of concern in this study. To ensure generalisability of findings in test construction it is necessary to have sample heterogeneity (Kline, 2000). Demographics were constantly reviewed at the interview stage and the sample recruited was diverse in terms of background characteristics and was representative of the population that the scale was intended for. The respondents for the pilot postal stage was more problematic as only 1.3% had not given birth before and 1.2% had not been pregnant before. This small proportion meant that it was not possible to draw inferences from the data according to parity, which may be an important influence of childbirth expectations. Therefore it is not possible to say that the PSECS is reliable and valid in primiparous women. Care was taken to ensure that the postal questionnaire was sent to a random sample of pregnant women however as responses were anonymous it is not possible to conclude why there was such a low response rate from primiparous women. A further sampling limitation was that the latest gestation was 31 weeks, indicating that the scale has not been piloted with women in the latest stages of pregnancy. In addition the mean scores on both the State and Trait anxiety subscales (38.65 and 38.52 respectively) indicate levels of general anxiety that were in the normal range. In general, respondents to this study tended to be in mid pregnancy, mean gestation of 23.38 weeks and multiparous. These are both factors that are associated with lower levels of fear, which suggests those women who were most fearful may not have responded.

It is noted that the response rate of 25% was relatively low compared to the 35% which Johnson and Slade (2002) received in a similar population. As with any postal survey, some bias is introduced in terms of the characteristics of those that respond; the resulting sample

are self-selected. It is not possible to make inferences about the expectations of childbirth of the 75% of the sample that did not respond. Due to nature of the sample that responded, deletion of items based on statistical analysis such as PCA and item analysis was not too stringent, as further iterations are required in order to test the scale with a sample more representative of the population.

There is much debate in the literature regarding the necessary sample size for factor analysis techniques with reports ranging from 100 to 300 (Kline, 2000; Tabachnick & Fidell, 2001) This study had a sample size of 148 and whilst this is adequate, ideally there would have been a sample of 200-300, as the reliability of PCA is dependant on sample size (Tabachnick & Fidell, 2001).

It is recognised that a response set may have been induced because items in the initial version of the PSECS were ordered according to categories. Kline (2000) suggests randomly ordering items to counteract a response set. It is highlighted that approximately half of the items in the PSECS were reverse coded and therefore this may have offset the emergence of a response set.

Although the internal consistency reliability of the PSECS was assessed, there was no assessment of the test-retest reliability. Due to the pilot stage of this study being completed anonymously, it was not possible to re-administer the scale.

The assessment of construct validity was limited in this study. Correlation of the PSECS with the STAI revealed that the PSECS taps into the construct of anxiety but did not explain all of the variance, highlighting that it does not measure the domain of anxiety exclusively. Concurrent validity was assessed according to the measure of subjective

stress, however in the absence of a correlation with a benchmark measure of expectations of childbirth, the demonstration of concurrent validity is somewhat subjective (Klein, 2000).

5.3 Clinical Implications

In terms of its clinical utility, the PSECS can be seen as a scale that can capture the range of childbirth expectations but also incorporates a single, brief measure of fear that could be used independently. All the subscales appear robust enough in terms of their internal reliability to be used individually.

It is suggested that the three subscales; '*coping and robustness to pain*', '*fear*' and '*out of control and embarrassed*' could be combined to produce an 'expectations of self' scale thus producing a briefer tool. This could potentially be used as a screening tool to identify women who have negative expectations of childbirth.

The *staff* subscale is indicated as useful, as responses from staff are highlighted in influencing the expectations and experience of childbirth (Gibbins & Thomson, 2001; Hodnett, 2002). The scale could potentially provide an opportunity to assess expectations of the service and compare services over time.

With regard to fear in particular, severe fear of childbirth during pregnancy has been shown to be potential risk factor for post-traumatic stress and depression after childbirth (Wijma, Söderquist & Wijma, 1997). The accurate identification of women with fear of childbirth is also a starting point in beginning to develop effective ante-natal interventions. Saisto and Halmesmaki (2003) reported that fear of childbirth is hidden behind the term 'caesarean

section on maternal request' in the UK. This suggests that there is a group of women that are so fearful that they have a wish to avoid vaginal delivery, which poses increased risk to the woman.

This suggests that a subset of pregnant women may require additional psychological support to cope with the emotional and physical demands of childbirth. Research has indicated that supporting women to foster realistic expectations may have positive outcomes for childbirth experience (Gibbins & Thomson, 2001). This highlights the need for multidisciplinary working between Clinical Psychology, Obstetric and Midwifery teams in developing specific psychological interventions to support pregnant women experiencing distress in relation to childbirth.

5.4 Implications for future research

It is evident that although the PSECS shows initial psychometric robustness in terms of its aims in this study, it is necessary that further work be carried out before its widespread use as a research or clinical tool. Further iterations of the scale are required which may refine the items further and produce a briefer scale.

Of particular importance is the piloting of the PSECS with a large sample of nulliparous women and women in the latter stages of pregnancy in order to establish whether the factor structure is stable across different groups of pregnant women.

The test-retest reliability of the PSECS should also be assessed, however it is indicated in the literature that expectations of childbirth may vary according to gestation and therefore the time delay between administrations should be brief.

It has been reported that some women may avoid pregnancy due to fear of childbirth. In multiparous this may be prompted by a previous negative birth experience, however fear of childbirth is also known to occur in women who have not been pregnant before. Hofberg & Ward (2003) report that this dread and avoidance of childbirth can be specifically conceptualised as secondary and primary tokophobia respectively. It would be of interest to test the psychometric properties of the PSECS in a sample of non-pregnant women

A study by Czarnocka and Slade (2000) found that perceptions of low levels of support from partner and staff regarding childbirth were particularly associated with the development of post-traumatic stress symptoms. The *partner* and *staff* subscales could therefore be used in further research and if these associations were confirmed then it would enhance the clinical utility of the PSECS.

Further research should also focus on ascertaining the predictive validity of the PSECS; whether it is able to predict an appropriate criterion (Kline, 2000). Normative values should also be established in order to determine cut-off scores for caseness, which would ensure the clinical utility of the PSECS. It would also be useful to see how the PSECS correlates with the WDEQ as an additional assessment of construct validity.

6. Conclusion

The development of the PSECS seems to have largely met its research aims in terms of the construction of a measure that assesses pregnant women's expectations of childbirth. The final version of the PSECS demonstrated that the domain of expectations of childbirth is multidimensional, by the tool having six underlying subscales. The PSECS shows initial psychometric robustness in terms of its internal reliability and acceptable content, concurrent and construct validity. The PSECS was developed to be specifically grounded in the English language. Test construction incorporated ethnic diversity, which contributes to the cultural validity of the scale for English speaking women in the UK, although further testing is needed. The PSECS can be used in its entirety but individual subscales show good internal reliability and therefore could be used independently. It is recognised that homogeneity of the sample, in terms of parity used to pilot the PSECS, is a particular limitation of this study. Further investigation concerning the construct validity, predictive validity and the calculation of norm values is necessary before the PSECS can be used as a research tool or in clinical practice. There is also the potential for a briefer version of the scale to be developed.

The PSECS has the potential to measure pregnant women's expectations of childbirth and within this, identify pregnant women in the UK who are fearful of childbirth. This is a starting point in enhancing antenatal care and beginning to develop effective therapeutic interventions for women who have negative expectations and fear childbirth.

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Appendix 1 – Journal approval



Department Of Psychology. Clinical Psychology Unit.

Doctor of Clinical Psychology (DClin Psy) Programme
Clinical supervision training and NHS research training
& consultancy.

Clinical Psychology Unit
Department of Psychology
University of Sheffield
Western Bank
Sheffield S10 2TP UK

Telephone: 0114 2226550
Fax: 0114 2226610
Email: c.harrison@sheffield.ac.uk

28 April 2009

Tara Pais
Third year trainee
Clinical Psychology Unit
University of Sheffield

Dear Tara

I am writing to indicate our approval of the journal(s) you have nominated for publishing work contained in your research thesis.

Literature Review: Journal of Reproductive and Infant Psychology

Research Report: Journal of Reproductive and Infant Psychology

Please ensure that you bind this letter and copies of the relevant instructions to Authors into an appendix in your thesis.

Yours sincerely



Dr Andrew Thompson
Director of Research Training

Journal Details



Journal of Reproductive and Infant Psychology

Published By: Routledge
Volume Number: 27
Frequency: 4 issues per year
Print ISSN: 0264-6838
Online ISSN: 1469-672X

Instructions for Authors

Journal of Reproductive and Infant Psychology welcomes reports of original research and creative or critical review articles which make an original contribution. Articles should not currently be submitted for publication elsewhere.

Topics of interest to the journal include psychological, behavioural, cognitive, affective, dynamic, medical, societal and social aspects of: fertility and infertility; menstruation and menopause; pregnancy and childbirth; antenatal preparation; motherhood and fatherhood; early infancy; infant feeding; early parent-child relationships; postnatal psychological disturbance and psychiatric illness; obstetrics and gynaecology including preparation for medical procedures; psychology of women; nursing, midwifery, neonatal care, health visiting, health promotion and health psychology.

The journal also publishes brief reports, comment articles and special issues dealing with innovative and controversial topics. A review section reports on new books and training material.

All submissions should be made online at the *Journal of Reproductive and Infant Psychology* Manuscript Central site. New users should first create an account. Once a user is logged onto the site submissions should be made via the Author Centre.

Authors should prepare and upload two versions of their manuscript. One should be a complete text, write in the second all document information identifying the author should be removed from files to allow it to be sent anonymously to referees. When uploading files authors will then be able to define the non-anonymous version as "File not for review".

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Professor D.B.A. van den Akker, Department of Psychology, Middlesex University, The Burroughs, Hendon, London, NW4 4BT

Dr. Margaret Redshaw, Social Scientist, National Perinatal Epidemiology Unit, University of Oxford, Oxford, OX3 9LF, UK

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Contributions should be as concise as possible and should not normally exceed 5000 words (3000 words for short reports) or the equivalent lineage including tables and figures. The title should not exceed 15 words. Each paper should

be accompanied by an abstract of not more than 200 words.

Papers are refereed anonymously. Criteria for review include: importance of topic, theoretical and practical relevance, contribution to knowledge, quality of research design and effective interpretation of results.

Style guidelines

Description of the Journal's article style

Description of the Journal's reference style. Quick guide

Please use British spelling (e.g. colour, organise) and punctuation. Use single quotation marks with double within if needed.

If you have any questions about references or formatting your article, please contact authorqueries@tandf.co.uk (please mention the journal title in your email).

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Please open and read the instruction document first, as this will explain how to save and then use the template.

Select the template that is most suitable for your operating system.

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Tables should be typed double spaced on separate pages, or spaced sufficiently to be distinct in the case of small tables. They should be numbered in sequence in arabic numerals and referred to in the text as Table 1 etc. Large tables of more than six lines should be titled in order to make the contents comprehensible independently of the text.

Diagrams, graphs, drawings and half-tone illustrations should be on a separate sheet labelled Figure 1 and so forth. Where possible they should be submitted as artwork ready for photographic reproduction, larger than the intended size. Where more than one figure is submitted, they should as far as possible be to the same scale.

SI units should be used for all measurements. Imperial measurements may be quoted in brackets. Where studies involve small numbers of subjects, both numbers and percentages of groups should be given.

Authors are advised to avoid sexist sentiments and language, except insofar as these form part of a study.

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Page proofs will be sent to the author submitting each article. Correction of typographical errors only will be permitted at this stage. Textual alterations may be charged to authors in exceptional circumstances.

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Exceptions are made for Government employees whose policies require that copyright cannot be transferred to other parties. We ask that a signed statement to this effect is submitted when returning proofs for accepted papers.

Appendix 3 – Ethical approval



National Research Ethics Service

North Sheffield Local Research Ethics Committee

1st Floor Vickers Corridor
Northern General Hospital
Harnes Road
Sheffield
S5 7AU

Telephone: 0114 271 4011
Facsimile: 0114 255 2469

06 November 2008

Miss Tara Pais
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield,
Western Bank
Sheffield
S10 2TN

Dear Miss Pais

Full title of study: Constructing a scale to measure pregnant women's expectations of childbirth
REC reference number: 08/H1308/185

Thank you for your letter of 14 October and e-mail of 05 November 2008, responding to the Committee's request for further information on the above research [and submitting revised documentation].

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation [as revised], subject to the conditions specified below.

Ethical review of research sites

The Committee has designated this study as exempt from site-specific assessment (SSA). The favourable opinion for the study applies to all sites involved in the research. There is no requirement for other Local Research Ethics Committees to be informed or SSA to be carried out at each site.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Appendix 3 – Ethical approval

08/H1308/185

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Management permission at NHS sites ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission is available in the Integrated Research Application System or at <http://www.rdicom.nhs.uk>.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Confidentiality form	3	01 July 2008
Questionnaire: Self Evaluation		
Questionnaire: Background info	3	01 July 2008
Interview Schedules/Topic Guides	3	01 July 2008
Peer Review		12 May 2008
Covering Letter		04 August 2008
Investigator CV		
Application		04 August 2008
Letter of invitation to participant	3	01 July 2008
Response to Request for Further Information		05 November 2008
Participant Information Sheet: Interview Stage	3.2	05 November 2008
Response to Request for Further Information		14 October 2008
Participant Consent Form	3.1	01 September 2008
Participant Information Sheet: Pilot stage	3.1	01 September 2008
Protocol	3.1	01 September 2008

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

The Research Ethics Committee is an advisory committee to Yorkshire and The Humber Strategic Health Authority

The National Research Ethics Service (NRES) represents the NRES directorate within The National Patient Safety Agency and Research Ethics Committees in England

Appendix 3 – Ethical approval

08/H1308/185

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We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nrci.npsa.nhs.uk.

08/H1308/185

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely


Dr C. A. Moore
Chair

Email: april.dagnall@sth.nhs.uk

Enclosures: "After ethical review – guidance for researchers" [SL-AR1 for CTIMPs, SL-AR2 for other studies]

Copy to: Prof Simon Heller, STH R & D Department

Appendix 4 – Research and Development approval

Ref STH15040/AD

Sheffield Teaching Hospitals 

NHS Foundation Trust

10 December 2008

Miss Tara Pais
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
Western Bank
Sheffield
S10 2TN

Dear Tara

Authorisation of project

STH ref: STH15040
Study title: Constructing a scale to measure pregnant women's expectations of childbirth

STH Supervisor (Principal Investigator): Professor Pauline Slade, University of Sheffield
Student Investigator: Miss Tara Pais, University of Sheffield

Sponsor: Sheffield Teaching Hospitals NHS Foundation Trust
Funder: OGN Small Grants Scheme

The Research Department has received the required documentation for the study as listed below:

- | | |
|--|--|
| 1. Sponsorship IMP studies (non-commercial) | NA |
| Sponsorship responsibilities between Institutions | NA |
| Responsibilities of investigators | NA |
| Monitoring Arrangements | NA |
| 2. STH registration document: completed and signed | STH Finance Form,
Professor P Slade, 02
December 08 |
| 3. Evidence of favourable scientific review | University of Sheffield,
Clinical Psychology Unit, 12
May 08 |
| 4. Protocol – final version | V3.1, September 2008 |
| 5. Participant information sheet – final version | |
| - Pilot Stage | V3.1, September 2008 |
| - Interview Stage | V3.2, November 2008 |
| 6. Consent form – final version | V3.1, September 2008 |
| 7. Signed letters of indemnity | NA |
| 8. ARSAC / IRMER certificates | NA |



Chairman: David Stone OBE • Acting Chief Executive: Christopher Welsh

smoke-free
hospitals

Appendix 4 – Research and Development approval

Ref: STH15040/AD

- | | |
|---|---|
| 9. Evidence of hosting approval from STH directorate | STH Finance Form, Mr A Farkas, 02 December 08 |
| 10. Evidence of approval from STH Data Protection Officer | STH Finance Form, Mr P Wilson, 02 December 08 |
| 11. Letter of approval from REC | North Sheffield REC, 08/H1308/185, 06 November 08 |
| 12. Proof of locality approval | NA |
| 13. Clinical Trial Authorisation from MHRA | NA |
| 14. Honorary Contract | NA |
| 15. Associated documents | |
| - Self evaluation questionnaire | Validated |
| - Confidentiality form | V3, July 2008 |
| - Questionnaire - background information for pilot stage | V3, July 2008 |
| - Letter of Invitation to Participant | V3, July 2008 |
| - Interview schedule | V3, July 2008 |
| 16. Signed financial agreement/contract | STH Finance Form, Dr B Zinober, 04 December 08 |

The project has been reviewed by the Research Department and authorised by the Director of R&D on behalf of STH NHS Foundation Trust to begin.

Yours sincerely

Professor S Heller
Director of R&D, Sheffield Teaching Hospitals NHS Foundation Trust
Telephone +44 (0) 114 226934
Fax +44 (0) 114 226937

Appendix 5 – STAI

SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

DIRECTIONS:

A number of statements which people have used to describe themselves given below. Read each statement and then circle the appropriate number of the statement to indicate how you feel *right now*, that is, *at the moment*. There are no right or wrong answers. Do not spend too much on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel secure.....	1	2	3	4
3. I am tense.....	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied.....	1	2	3	4
9. I feel frightened.....	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery.....	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried.....	1	2	3	4
18. I feel confused.....	1	2	3	4
19. I feel steady.....	1	2	3	4
20. I feel pleasant	1	2	3	4

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
21. I feel pleasant	1	2	3	4
22. I feel nervous and restless.....	1	2	3	4
23. I feel satisfied with myself.....	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter.....	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure.....	1	2	3	4
34. I make decisions easily.....	1	2	3	4
35. I feel inadequate	1	2	3	4
36. I am content	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me.....	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests.....	1	2	3	4

Appendix 6 – Background questionnaire for pilot stage

Background information

Constructing a scale to measure pregnant women's expectations of childbirth.

Please complete this form as accurately as possible.

We will not be able to identify you from the information you give, however these details are important for the study, thank you for your time

Please enter today's date __/__/____ Your expected delivery date __/__/____

How many weeks pregnant are you?.....

1. What is your age? Please enter a number into the box

2. What is your occupation?

3. What is your marital status? Please tick a box

Married Living with partner Single Divorced

Other please specify.....

4. If you have a partner, what is their occupation?.....

5. Please indicate your highest level of qualification GCSE A-Level

NVQ Degree Postgraduate

Other please specify

6. How many children do you have of your own (excluding this pregnancy)?

7. Is this your first pregnancy? Yes No

If NO, how many times have you been pregnant before? Please enter a number into the box

Appendix 6 – Background questionnaire for pilot stage

8. Have you experienced any pregnancy, which ended in a miscarriage?
Stillbirth?
Termination?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

If YES, if you wish to give further details please feel free to do so below

.....

9. Have you had any medical complications during your pregnancy? Yes No

If Yes, please could you give details below

.....

10. Is there currently any plan in place for your baby to be delivered by elective caesarean section?

Yes No

11. In the last week have any thoughts or images about childbirth come into your mind?

Yes No *If No please go to question 12.*

If Yes how frequently? several times a day several times a week
 Once a week

(a) How do you respond to these experiences? *Please tick one box*

always welcome them neither welcome nor avoid
 always try to push them away and avoid them

(b) How do you generally experience these thoughts/images?

extremely pleasant quite pleasant neither pleasant nor unpleasant unpleasant extremely unpleasant

Appendix 6 – Background questionnaire for pilot stage

12. What is your ethnic group? Choose one section from A to E, then select the appropriate option

A. White

White British White Irish

Any other white background please →
Write in

B. Mixed

White and Black Caribbean White and Asian White and Black African

Any other Mixed background please →
Write in

C. Asian or Asian British

Indian Pakistani Bangladeshi

Any other Asian background please →
Write in

D. Black or Black British

Caribbean African Any other Black background please →
Write in

E. Chinese or other ethnic group

Chinese Any other please →
Write in

Please now quickly check back from the beginning of the booklet and make sure that you have not missed any questions out.

Please now return this booklet in the freepost envelope provided

Thank you very much for your time
And good luck in the future!

Appendix 7 – Interview schedule

Constructing a scale to measure pregnant women's expectations of childbirth

(START TAPE RECORDER)

1. Can you start by telling me about the thoughts and feelings that you have right now in relation to your forthcoming labour and birth?

2. Have these changed over the course of your pregnancy?

Have your thoughts and feelings changed from week to week/ month to month.

3. What expectations, if any, do you have of the labour and birth?

Expectations, rather than what women may want

How do you expect others to provide care for you?

4. How do you expect you will feel the moment you give birth?

5. What worries or concerns (if any) do you have about the labour and birth?

Sentence completion task

I am going to read you the start of a sentence. I would like you to finish the sentence with whatever comes into your mind and please do not edit your answers

1. Childbirth is.....

2. Labour will be.....

3. When I give birth I will be

4. When I am in labour others will see me as.....

5. When I give birth others will see me as.....

Appendix 8 - Demographic information for interview

Interview Number

today's date _/ _/ _

expected delivery date _/ _/ _

gestation _/ _/ _

1. What is your age?

2. What is your occupation?

3. What is your marital status?

Married Living with partner Single Divorced

Other please specify.....

4. If you have a partner, what is their occupation?.....

5. Please indicate your highest level of qualification GCSE A-Level
NVQ

Degree Postgraduate Other please
specify.....

6. How many children do you have of your own (excluding this pregnancy)?

7. Is this your first pregnancy? Yes No

If NO, how many times have you been pregnant before? Please enter a number into
the box

8. Have you attended 'birth after thoughts'? Yes No

Appendix 8 - Demographic information for interview

9. Have you had any medical complications during your pregnancy? Yes No

If Yes, please could you give details below

.....
.....
.....
.....

10. Is there currently any plan in place for your baby to be delivered by elective caesarean section?

Yes No

11. What is your ethnic group? *Choose one section from A to E, then select the appropriate option*

A. White

White British White Irish

Any other white background please →
Write in

B. Mixed

White and Black Caribbean White and Asian White and Black African

Any other Mixed background please →
Write in

C. Asian or Asian British

Indian Pakistani Bangladeshi

Any other Asian background please →
Write in

D. Black or Black British

Caribbean African Any other Black background please →
Write in

Appendix 8 - Demographic information for interview

E. Chinese or other ethnic group

Chinese Any other please write in



Personal data –to be kept separate from the data set.

Interview number

Name

Address

.....
.....
.....
.....
.....

Tel: Number

Appendix 9 – Information sheet for interview

'Hospital headed paper'

Constructing a scale to measure pregnant women's expectations of childbirth.

INFORMATION SHEET

You are being invited to take part in a research project. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read this information carefully and please ask if anything is not clear and or you would like further information.

What is the purpose of the study?

We know that pregnant women have a range of expectations about labour and birth. This research aims to develop a questionnaire to assess pregnant women's expectations of their forthcoming labour and birth. We hope that this study will help us to accurately identify those women who may benefit from further support leading up to labour and giving birth, and will contribute to enhancing the antenatal service that can be offered to pregnant women.

Why have I been chosen?

You have been chosen because you are a pregnant woman under the care of Sheffield Teaching Hospitals NHS Foundation Trust. I will be interviewing approximately 20 women.

Do I have to take part?

No, you are free to refuse to join the study and may withdraw at any time or choose not to answer certain questions. You will receive the same quality of care from the hospital if you choose to take part or not.

What will be involved if I agree to take part in the study?

I would like to talk to you to find out about your thoughts and feelings about childbirth. This will involve me asking you a small number of questions and will take approximately 20 - 30 minutes. I would like to tape record the interview in order to make sure I properly remember what you have told me.

When and where will the interviews take place?

I will arrange to meet you another time at your convenience to complete the interview. This can be here at the clinic or at your home.

What are the possible disadvantages and risks of taking part?

It is possible that the interview topics may highlight some particular concerns about your labour and birth. If these were distressing for you and with your agreement I would notify your midwife.

What are the possible advantages of taking part?

Appendix 9 – Information sheet for interview

We cannot promise that the study will help you but the information we get from the study will help us to enhance the antenatal service offered to pregnant women in the future.

What if there is a problem?

If you wish to complain or have any concerns about the way you have been approached or treated during the course of this study, please contact the chief investigator Tara Pais in the first instance. Alternatively you can contact the supervisor of the work, Prof. Pauline Slade, Tel: 0114 2226568. If you remain unhappy and wish to complain formally, you can do this through the normal NHS complaints procedure. Details can be obtained from the hospital. In the event that something does go wrong and you are harmed during the research and this is due to someone's negligence then you may have grounds for legal action or compensation against Sheffield Teaching Hospitals but you may have to pay for your legal costs.

Will the information obtained in the study be confidential?

All information about you will be handled in confidence. If however, during the course of the interview you reveal that you have been mistreated by a health care professional then we have a duty of care to investigate this. All audiotapes and transcripts will be anonymised and securely locked away. This data will only be accessible to members of the research team and representatives from regulatory authorities that may want access to make sure that the study is being carried out correctly. All audiotapes will be destroyed in September 2009 when the study has ended. No names will be mentioned in any of the reports of the study. We may use direct quotes in reports but we will ensure that individuals cannot be identified from these details. If you would like to receive a summary of the results, then please indicate this on the consent form (along with your address).

Who is organising and funding the research?

This study is being completed as part of a Doctorate in Clinical Psychology. It has been developed jointly with the University of Sheffield, Clinical Psychology Unit and the Obstetrics and Midwifery departments, Jessops Wing, Sheffield Teaching Hospitals, NHS Foundation Trust; who are jointly funding the research. The researchers conducting this study are not being paid any extra for it.

Who has approved the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well-being and dignity. This study has been approved and given favourable opinion by the North Sheffield Research Ethics Committee and received scientific approval from the University of Sheffield, Clinical Psychology Unit.

What if I would like further information?

Please contact the Chief Investigator: Ms Tara Pais, Trainee Clinical Psychologist. Clinical Psychology Unit, Dept of Psychology. University of Sheffield. SHEFFIELD S10 2TN. E-mail: pcp06tp@sheffield.ac.uk

Appendix 9 – Information sheet for interview

You can also leave a telephone message on 0114 2226650 and the Chief Investigator will return your call

Thank you for taking part in this study!

You will receive the information sheet and a copy of the signed consent form to keep

Appendix 10 – Consent form for interview

Study number: STH15040

Participant identification number:

CONSENT FORM

Title of project – Constructing a scale to measure pregnant women's expectations of childbirth.

Name of researcher – Tara Pais, Trainee Clinical Psychologist, University of Sheffield

Please initial box

- 1. I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.
- 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.
- 3. I understand that relevant sections of my medical notes and data collected during the study, may be looked at by individuals from regulatory authorities or from a representative of Sheffield Teaching Hospitals NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.
- 4. I understand that the interview will be tape-recorded and that audiotapes and transcripts will be locked away and accessible only by members of the research team.
- 5. I agree to take part in the above study
- 6. Do you wish to receive a summary of the final results of this study Yes/No

If Yes, please write your address on the bottom of this form.

Name of patient

Date

Signature

Researcher

Date

Signature

Address of patient (only if she wants a copy of the study results)

.....
.....
.....

1 copy for patient and 1 copy for research

Appendix 11: Extracted constructs from interviews

Participant number	1	2	3	4	6	8	9	10	11	12	13	14	15	17	18	19	20	21
Staff																		
Staff will be responsive to my needs	43	27 403 427 427									59							
Staff will follow my wishes											57 58			30				
Staff will make assumptions about my ability to deal with childbirth											66 72							
Staff will assume I know what to do when in labour				23														
Staff will not respect me															21			
staff will offer me reassurance/motivate				31							67							
Staff will be adequately trained	62 97	22 55			46 47												69 71	
Staff will tell me what I need to do when I am in labour				27 30														
I trust staff to make the right decision for me	34 105				38							66	129					
I trust that the ward will be adequately staffed/understaffed	67	21 28 28 59 227	99		43 45 46 104	54 55			21							69		
Staff will help me to relax/stop me panic				31			26											
Staff will support me through childbirth	62 67	5 13	96 98 99	27	91					20			89 92			71	66 67	
staff will do a good job									23 33									
Motivate me to carry on through labour	126																	
Staff will be disinterested in me		227																
Staff will not offer me adequate pain relief																		
Staff will not listen to my requests		31 93				87												
Staff will abandon me/leave me on my own		9 20 44 45 65				53												
Staff will be patient with me											65 74							
Staff will be rude to my partner													84					
Labour ward environment																		
Provided with a relaxing environment	44 46							29										
Ward will be pleasant			102															
Ward will have capacity for me																		
privacy	44																	
nervous about giving birth in hospital					89													
Partner																		
My partner will get in the way							35									78		
Partner will not be able to cope seeing me in pain	143 145				57				31		77	37						
Partner will find childbirth traumatic												37						
Partner will irritate me																77		
Partner will try hard to support me																76 83		
Partner will support me during labour	50 58 59		37	36		70			27		82						82 86	
Partner will feel helpless		434									79							

The numbers in the cells of Appendix 11 refer to the line numbers in the transcript where that construct was endorsed

Appendix 11: Extracted constructs from interviews

Participant number	1	2	3	4	6	8	9	10	11	12	13	14	15	17	18	19	20	21
Partner will help me relax	55						28		34									
Partner will panic/remains relaxed	56								27						30			
partner will be scared									28									
Partner is knowledgeable about childbirth/ lacks knowledge	36				68						80							
Concerned partner wont be there for the duration of labour															71	79		
Partner will encourage me not to give up when I am in labour															80			
I will be left alone – partner wont be able to get to me in time.		42					33											
Expectations of labour																		
Length of labour labour will be, very long.....very short	31	41	89	18		13	19								18			
Very painful.....painfree	3 108 152	403			45 77		4		11						18			
A traumatic experience																		
labour will be fine			20															
I am confident that my body can cope with labour	17 17 110										8 10 17	64						
I will not be able to give birth naturally																		
I will need drugs to cope with the pain																		
Lack confidence that I can cope – physically cope/emotionally cope																		
I am confident that I can cope with the pain.																		
Baby will be too big for me to give birth naturally																		
I lack knowledgeable re: pain management				13	80				57									
Confused by conflicting information																		
I feel prepared for labour			68 74			49												
Mentally prepared to cope with demands of labour											40							
I feel knowledgeable about labour/lack knowledge e.g mixed messages	48 90		84	13	60 87 96			39							20			
Looking forward/excited.....dreading					26		16		3				51					
feel anxious/nervous	57	3 131 131 132		13	36 89 114		3	3 3	3 3 9					5 11 11 64	3	44	3 15	8
labour will be horrible									11									
labour will be worthwhile	86										50			36	8			
labour will be challenging																		5
labour will be very difficult	8																45	19
labour will be exhausting																	46	
labour is scary	108	3 3	15											3	13			
Avoid thinking about childbirth					24		5							9 85 7 44 44	59			
I will take it as it comes									4		3 10							57
Labour is unknown/ I know what to expect		26		3		8	45 46	12						37	3 4 11 21 65		46	5 46
Uncomfortable.....very comfortable								5				42						

The numbers in the cells of Appendix 11 refer to the line numbers in the transcript where that construct was endorsed

Appendix 11: Extracted constructs from interviews

Participant number	1	2	3	4	6	8	9	10	11	12	13	14	15	17	18	19	20	21
Very Worried.....not at all worried						26	6						3 4 23 32			58	49	8
Straightforward.....complicated							19											
Very frightened/scared of going into labour		39 40																
Calm/quiet											42							21
I will be able to cope with the demands of labour													30				44 45	
Labour will be lovely													31					
Out of control/lose control		24				87		61								37		19
When in labour I will panic						12										58		
If I have an epidural I will feel like I have cheated			30															
I will need an epidural													36					
My expectations are realistic			87															
Unsure about method of pain relief																		
I will manage without pain relief				43														
I will be alert during the labour during labour I will be 'out of it'		35 38 76																
feel Exposed						87 92 93												
feel Vulnerable						91												
I will be hysterical						91												
I will not be able to have the labour I planned for													61					
I will cope better on my own																87		
Expectations of birth																		
When I give birth I will feel.....?																		
Excited		388		39	4	78			37							3 5	28 78 91 93	
happy				39														
overjoyed	86												105					
pleased		389																
Shocked	74																	
Nervous/anxious		389			4 72											4		
Apprehensive	25											6 8						
Scared	70																	
Stressed																		
Feel like a mother	77																	96
Overwhelmed				39												99		
Aware of emotions													17 153					
Amazing experience																		
Worthwhile																		
Tired/exhausted	159 160 162						48		37							100		

The numbers in the cells of Appendix 11 refer to the line numbers in the transcript where that construct was endorsed

Appendix 11: Extracted constructs from interviews

Participant number	1	2	3	4	6	8	9	10	11	12	13	14	15	17	18	19	20	21
Coping	164 164																	
In control/lose control	164																	
Elated					72 72						92							
Get angry																		
I will embarrass myself																		
Relieved		437	104			76	37		37					47	32	100	100	27
proud													143					
I will cry when I give birth																95		
Relieved pregnancy is over											44							
Alert so I can bond with baby				44 45														
Will be an emotional wreck																99		
overwhelmed by childbirth	82																	
relieved that baby is healthy														40				
Worries/concerns																		
Not manage to get to the hospital in time	96																	
Something will go wrong – medical complications	104												126					
Maternal feelings won't kick in – bonding					72													
Not be able to cope with the pain			89		77													
I won't be able to accomplish a natural (vaginal) delivery.			109				45				37	4 47				45		
			111															
Health of the baby					40		37										96 100	10 35
																	101	51
Amount of pain				42		84	44		15									36
Worried whether I will get the pain relief I will want			22											34				
Cord getting stuck around the baby								43										
Needing emergency surgery								44										
Needing a c-section			110									47						
If I can cope with labour																		
Labour will be too quick																		
Trauma to my body because of labour										43					38			
Lack of privacy																		58
about becoming a mother	70 76																	
worried because cant predict when I go into labour		53 142																
		145																
too tired to appreciate birth					73	19												
I will be alone						19												
worried labour will be too long	142																	
worried I will scream/lose temper							48 50											

The numbers in the cells of Appendix 11 refer to the line numbers in the transcript where that construct was endorsed

Appendix 12 – Initial version of PSECS

Expectations of childbirth scale – Initial Version

We know that pregnant women have different expectations of childbirth. Here is a list of statements describing feelings and expectations about childbirth that you may or may not have.

Instructions

- Please try and be as honest as you can in responding to each statement.
- Try not to think about it too much as we are interested in your first answer.
- **Please read each statement carefully and circle the number that best describes how much you have agreed with it over the last month.**

Please answer **how you expect** your labour and birth will be, rather than how you hope it will be.

The following questions are about your expectations of staff on the labour ward when you are in labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. Staff will listen to what I ask for.....	1	2	3	4	5
2. Staff will assume I know what to do when I am in labour.....	1	2	3	4	5
3. Staff will have the right training to provide good care for me..	1	2	3	4	5
4. I trust that staff will make the right decision for me.....	1	2	3	4	5
5. I expect there will not be enough staff on duty.....	1	2	3	4	5
6. Staff will help me to relax.....	1	2	3	4	5
7. Staff will offer me emotional support.....	1	2	3	4	5
8. Staff will leave me on my own.....	1	2	3	4	5
9. Staff will be patient with me.....	1	2	3	4	5
10. Staff will not treat my partner with respect.....	1	2	3	4	5
11. Staff will motivate me to get through labour.....	1	2	3	4	5
12. Staff will not respect my wishes.....	1	2	3	4	5
13. Staff will be interested in me.....	1	2	3	4	5
14. Staff will not offer me adequate pain relief.....	1	2	3	4	5

Please turn over

Appendix 12 – Initial version of PSECS

The labour ward environment

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. The labour ward will have space for me.....	1	2	3	4	5
2. I will get the amount of privacy I want on the labour ward.....	1	2	3	4	5
3. The labour ward will be a relaxing environment.....	1	2	3	4	5

The following questions are about your expectations of your birth partner (this can be anyone who will be there with you) during your labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. My partner will help me relax.....	1	2	3	4	5
2. My partner will not be able to cope seeing me in pain.....	1	2	3	4	5
3. My partner will find childbirth traumatic.....	1	2	3	4	5
4. My partner will do their best to support me.....	1	2	3	4	5
5. My partner will feel helpless.....	1	2	3	4	5
6. My partner will panic.....	1	2	3	4	5
7. My partner will know how to help me.....	1	2	3	4	5
8. I will find my partner annoying.....	1	2	3	4	5
9. I worry my partner will be late for the birth.....	1	2	3	4	5

Appendix 12 – Initial version of PSECS

The following questions ask about your expectations of your labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. I worry that labour will be extremely painful.....	1	2	3	4	5
2. I worry about the length of my labour (either too long or too short).....	1	2	3	4	5
3. My body will fail me during labour.....	1	2	3	4	5
4. I will not be able to give birth naturally.....	1	2	3	4	5
5. I will have the stamina to cope with labour.....	1	2	3	4	5
6. I will not be able to cope with the pain.....	1	2	3	4	5
7. I will need medication to manage the labour pain.....	1	2	3	4	5
8. I will not get the pain relief I want.....	1	2	3	4	5
9. I know all I need to know about labour.....	1	2	3	4	5
10. I am emotionally strong enough to cope with labour.....	1	2	3	4	5
11. I will feel vulnerable.....	1	2	3	4	5
12. I will be hysterical.....	1	2	3	4	5
13. Labour will be very comfortable.....	1	2	3	4	5
14. I will feel extremely anxious when in labour.....	1	2	3	4	5
15. Labour will be lovely	1	2	3	4	5
16. I will be very worried when I am in labour.....	1	2	3	4	5
17. Labour will be horrible.....	1	2	3	4	5
18. Labour will be worthwhile.....	1	2	3	4	5
19. Labour will be very difficult.....	1	2	3	4	5
20. Labour will be exhausting.....	1	2	3	4	5
21. Labour will be scary.....	1	2	3	4	5
22. Labour is unknown.....	1	2	3	4	5
23. Labour will be complicated.....	1	2	3	4	5
24. In labour I will be looking forward to meeting my baby.....	1	2	3	4	5
25. I worry I will lose control during labour.....	1	2	3	4	5
26. I worry that I will lose my temper.....	1	2	3	4	5

Please turn over

Appendix 12 – Initial version of PSECS

The following questions ask about your expectations of your labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
27. I worry I will embarrass myself.....	1	2	3	4	5
28. I will be able to have the labour I want.....	1	2	3	4	5
29. I will feel I have cheated if I need pain relief.....	1	2	3	4	5
30. I will feel physically exposed during labour.....	1	2	3	4	5
31. I will be fully aware of everything during labour.....	1	2	3	4	5
32. I will get to the hospital in time.....	1	2	3	4	5
33. I worry I will need emergency surgery.....	1	2	3	4	5
34. I will be worried about the health of my baby.....	1	2	3	4	5
35. I will get the privacy I want.....	1	2	3	4	5
36. I will be too tired to appreciate the birth.....	1	2	3	4	5
37. I will feel calm during labour.....	1	2	3	4	5
38. I worry about trauma to my body.....	1	2	3	4	5
39. My body will be hurt during labour.....	1	2	3	4	5

Appendix 12 – Initial version of PSECS

Part 2.

These questions ask about how you expect you will feel at the time you give birth

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. I will feel excited.....	1	2	3	4	5
2. I will be scared.....	1	2	3	4	5
3. I will be relieved.....	1	2	3	4	5
4. I will be anxious.....	1	2	3	4	5
5. I will feel like a mother.....	1	2	3	4	5
6. I will be tired.....	1	2	3	4	5
7. I will cry.....	1	2	3	4	5
8. It will be an amazing experience.....	1	2	3	4	5
9. I will be out of control.....	1	2	3	4	5
10. I will be elated.....	1	2	3	4	5
11. I will be angry.....	1	2	3	4	5
12. I will embarrass myself.....	1	2	3	4	5
13. I will feel happy.....	1	2	3	4	5
14. I will be relieved that pregnancy is over.....	1	2	3	4	5
15. I will be overwhelmed with emotion.....	1	2	3	4	5
16. I will be relieved that baby is healthy.....	1	2	3	4	5
17. I will be an emotional wreck.....	1	2	3	4	5
18. My maternal feelings will not kick in.....	1	2	3	4	5
19. I will be proud.....	1	2	3	4	5

Thank you for your time so far

Please check that you have not missed out any questions before beginning the next section.

Please turn over

Appendix 13 – Covering letter from hospital department

Check this box if you are a patient of the NHS. The NHS is a charity and we are pleased to see you here.

Sheffield Teaching Hospitals 
NHS Foundation Trust

Dear

You are being invited to take part in a research study that is being carried out by the Jessop Wing, Sheffield Teaching Hospitals NHS Foundation Trust and the Clinical Psychology Unit, University of Sheffield. Tara Pais who is a trainee clinical psychologist is the chief investigator for the work

The study is called; Constructing a scale to measure pregnant women's expectations of childbirth.

We know that pregnant women have varying expectations about childbirth. Our aim to develop a questionnaire that can accurately assess these expectations so that we can identify pregnant women who may benefit from further support leading up to labour.

You have been chosen to take part in this study as you are a pregnant woman under the care of the Jessop Wing, Sheffield Teaching Hospitals, NHS Foundation Trust. We have sent this questionnaire pack to 600 pregnant women in total, as we are interested in understanding the different expectations of as many pregnant women as possible. This will help us to develop a questionnaire that is reliable.

Before you decide whether you would like to take part, please take the time to read the 'participant information sheet' on the next page that will provide further details about this study.

If you choose to take part, we do not ask you to provide your personal details. This means that your responses are anonymous and we will not know who you are. To ensure that your answers are confidential we do not ask you to sign a consent form but assume that by completing the questionnaires you agree to take part in the study.

If you agree to take part, **please take a few minutes now or over the next few days** to complete the questionnaire booklet and send it back to us in the free post envelope provided.

If for any reason it is now inappropriate for you to be sent this letter, please accept our apologies.

Thank you for taking the time to read this information

Yours Sincerely

Dr Fiona Fairlie
Consultant in Obstetrics and Gynaecology

Constructing a scale to measure pregnant women's expectations of childbirth.

INFORMATION SHEET

You are being invited to take part in a research project. Before you decide to it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully.

What is the purpose of the study?

We know that pregnant women have a range of expectations about childbirth. This research aims to develop a questionnaire to assess pregnant women's expectations of their forthcoming labour and birth. We hope that this study will help us to accurately identify those women who may benefit from further support leading up to labour and giving birth, and will contribute to enhancing the antenatal service that can be offered to pregnant women.

Why have I been chosen?

You have been chosen because we are interested in understanding the expectations of childbirth of women who are under the care the Sheffield Teaching Hospitals NHS foundation Trust.

What will be involved if I agree to take part in the study?

I would like you to fill in the three questionnaires contained in this pack, the first asks questions about you and your pregnancy, the second asks about your expectations of childbirth and the third about how you have been feeling in general. This should take approximately 10-15 minutes of your time. Please follow the instructions at the top of each questionnaire and then return them completed in the pre-paid envelope provided. If completing the questionnaires raises any issues or concerns for you please contact your midwife for support.

Do I have to take part?

No, you are free to refuse to join the study and may withdraw at any time or choose not to answer certain questions. You will receive the same quality of care from the hospital if you choose to take part or not.

Will the information obtained in the study be confidential?

Anything you write down will be treated in confidence. We do not ask for your name so your participation in this study is anonymous.

Appendix 14 – Information sheet for pilot stage

What are the possible disadvantages of taking part in this study?

We ask that if answering any of the questions highlights any particular worries or concerns about your pregnancy then to contact your Midwife or Obstetrician for further support.

What are the possible advantages of taking part?

We cannot promise that the study will help you but the information we get from the study will help us to enhance the antenatal service we offer pregnant women in the future.

What if there is a problem?

If you wish to complain or have any concerns about the way you have been approached or treated during the course of this study, you should ask to speak to a researcher who will do their best to answer your questions. Please contact, Prof. Pauline Slade, Tel: 0114 2226568. If you remain unhappy and wish to complain formally, you can do this through the normal NHS complaints procedure. Details can be obtained from the hospital.

If you are harmed due to someone's negligence, then you may have grounds for legal action. There are however, no special compensation arrangements in place in case of problems with the research.

Who is organising and funding the research?

This study is being completed as part of a Doctorate in Clinical Psychology. It has been developed jointly with the University of Sheffield, Clinical Psychology Unit and the Obstetrics and Midwifery departments, Jessops Wing, Sheffield Teaching Hospitals, NHS Foundation Trust; who are jointly funding the research. The researchers conducting this study are not being paid any extra for it.

Who has approved the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well-being and dignity. This study has been approved and given favourable opinion by the North Sheffield Research Ethics Committee and received scientific approval from the University of Sheffield, Clinical Psychology Unit.

What if I would like further information?

Please contact the Chief Investigator: Ms Tara Pais, Trainee Clinical Psychologist. Clinical Psychology Unit, Dept of Psychology. University of Sheffield. SHEFFIELD S10 2TN. E-mail: pcp06tp@sheffield.ac.uk

You can also leave a telephone message on 0114 2226650 and the Chief Investigator will return your call.

Thank you for taking part in this study!

Appendix 15 – Final version of PSECS

Pais-Slade Expectations of Childbirth Scale – Final Version

We know that pregnant women have different expectations of childbirth. Here is a list of statements describing feelings and expectations about childbirth that you may or may not have.

Instructions

- Please try and be as honest as you can in responding to each statement.
- Try not to think about it too much as we are interested in your first answer.
- Please read each statement carefully and circle the number that best describes how much you have agreed with it over the last month.

Please answer how you expect your labour and birth will be, rather than how you hope it will be.

The following questions are about your expectations of staff on the labour ward when you are in labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. I trust that staff will make the right decision for me.....	1	2	3	4	5
2. I expect there will not be enough staff on duty.....	1	2	3	4	5
3. Staff will help me to relax.....	1	2	3	4	5
4. Staff will offer me emotional support.....	1	2	3	4	5
5. Staff will leave me on my own.....	1	2	3	4	5
6. Staff will not respect my wishes.....	1	2	3	4	5
7. Staff will be interested in me.....	1	2	3	4	5
8. Staff will not offer me adequate pain relief.....	1	2	3	4	5

Please turn over

The labour ward environment

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. The labour ward will have space for me.....	1	2	3	4	5
2. I will get the amount of privacy I want on the labour ward....	1	2	3	4	5
3. The labour ward will be a relaxing environment.....	1	2	3	4	5

The following questions are about your expectations of your birth partner (this can be anyone who will be there with you) during your labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. My partner will not be able to cope seeing me in pain.....	1	2	3	4	5
2. My partner will find childbirth traumatic.....	1	2	3	4	5
3. My partner will feel helpless.....	1	2	3	4	5
4. My partner will panic.....	1	2	3	4	5
5. My partner will know how to help me.....	1	2	3	4	5
6. I will find my partner annoying.....	1	2	3	4	5

Appendix 15 – Final version of PSECS

The following questions ask about your expectations of your labour

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. I worry that labour will be extremely painful.....	1	2	3	4	5
2. I worry about the length of my labour (either too long or too short).....	1	2	3	4	5
3. My body will fail me during labour.....	1	2	3	4	5
4. I will not be able to give birth naturally.....	1	2	3	4	5
5. I will not be able to cope with the pain.....	1	2	3	4	5
6. I will need medication to manage the labour pain.....	1	2	3	4	5
7. I will not get the pain relief I want.....	1	2	3	4	5
8. I am emotionally strong enough to cope with labour.....	1	2	3	4	5
9. I will be hysterical.....	1	2	3	4	5
10. I will feel extremely anxious when in labour.....	1	2	3	4	5
11. I will be very worried when I am in labour.....	1	2	3	4	5
12. Labour will be scary.....	1	2	3	4	5
13. Labour is unknown.....	1	2	3	4	5
14. Labour will be complicated.....	1	2	3	4	5
15. I worry I will lose control during labour.....	1	2	3	4	5
16. I worry I will embarrass myself.....	1	2	3	4	5
17. I will feel physically exposed during labour.....	1	2	3	4	5
18. I worry I will need emergency surgery.....	1	2	3	4	5
19. I will be worried about the health of my baby.....	1	2	3	4	5
20. I will be too tired to appreciate the birth.....	1	2	3	4	5
21. I will feel calm during labour.....	1	2	3	4	5
22. I worry about trauma to my body.....	1	2	3	4	5
23. My body will be hurt during labour.....	1	2	3	4	5

Please turn over

Appendix 15 – Final version of PSECS

Part 2.

These questions ask about how you expect you will feel at the time you give birth

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. I will feel excited.....	1	2	3	4	5
2. I will be scared.....	1	2	3	4	5
3. I will be anxious.....	1	2	3	4	5
4. I will feel like a mother.....	1	2	3	4	5
5. I will be out of control.....	1	2	3	4	5
6. I will be elated.....	1	2	3	4	5
7. I will embarrass myself.....	1	2	3	4	5
8. I will be overwhelmed with emotion.....	1	2	3	4	5
9. I will be an emotional wreck.....	1	2	3	4	5
10. My maternal feelings will not kick in.....	1	2	3	4	5

Thank you for your time so far

Please check that you have not missed out any questions before beginning the next section.

Please turn over