

3.9 Reliability and validity of the questionnaire

The preliminary exploratory work for the quantitative phase of the investigation involved pilot testing of the men's health during partners' pregnancy questionnaire developed from the interviews in the qualitative phase of the study whose details and overall validation results presented in tables can all be found in (Appendix 10) as well as respondents' commentary and the subsequent amendments made in the light of both. The Cronbach Alpha Coefficient of reliability for the total scale was 0.89 (Reliability Coefficient: Number of cases = 23. Number of items tested = 50. $\alpha = 0.89$). There were 5 physical symptoms (Table 4: See Appendix 10) psychological symptoms (Table 5: Refer Appendix 10) with $\alpha < 0.70$ and these were removed from the study instrument accordingly. There were excellent direct correlations between test/re-test values for the severity and distress of physical symptoms (Tables 6 and 7: Refer Appendix 10) yielding correlation coefficient (r) values in the range of 0.98-0.99, with only a few exceptions. Those for the severity and distress of psychological symptoms (Tables 8 and 9: Refer Appendix 10) gave correlation coefficient (r) values in the range of 0.92-0.99. P-values were very small in the range of 0.002-0.001 with the majority being 0.001. Mann-Whitney U test revealed no statistically significant differences in the median severity and distress scores for all physical (Tables 10 and 11: Refer Appendix 10) and psychological symptoms (Tables 12 and 13: Refer Appendix 10) between the test-re-test periods. The range of test/re-test median values for the severity of physical symptoms were 0.35-5.04 and 0.35-5.22, and for their distress 0.39-5.65 and 0.39-5.61. The range of test and re-test median values for the severity of psychological symptoms were 0.17-3.61 and 0.17-3.91 and for their distress 0.17-3.70 and, 0.17 and 3.96. Amendments were then made and the final questionnaire emerged (Refer Appendix 11).

APPENDIX 10

Pilot Questionnaire Men's Health during Partner's Pregnancy Rationale, Description, Procedure and Study Validation Results

**Open Hyperlink for Pilot Questionnaire Men's
Health during Partner's Pregnancy**

[I:\Appendix 10 Pilot Study Questionnaire](#)

Rationale

Many studies investigating the syndrome have not used questionnaires specifically designed to measure its symptoms but have resorted instead to general health questionnaires (Trethowan and Conlon, 1965; 1968, Twiggs, 1987; Longobucco and Freston, 1989; Sizaret *et al*, 1991; Goodman, 1992; Thomas and Upton, 2000). In doing so, it is likely that the specific symptoms of the syndrome and its other characteristics may be overlooked. In addition, the majority of studies do not include symptom severity and distress in their measures. Further impetus for the development and pilot testing of a new questionnaire study instrument for the syndrome emanates from the lack of standardisation of those used in other investigations. This of course makes national and international comparisons of the syndrome notoriously difficult.

Description of the pilot questionnaire and procedure

The item pool for the pilot questionnaire was developed from the data collected in the qualitative study as well as other published literature. The questionnaire contained a total of 50 items. There were 31 questions on physical symptoms relating to 5 anatomical areas, namely gastrointestinal (13), respiratory (5), genitio-urinary (3), oral-dental (3) and musculo-skeletal (2). Five symptoms did not fall into any of the above categories and were classified as miscellaneous e.g. headache, tiredness, lack of energy, feeling unwell and fainting. Nineteen questions on psychological symptoms related to six areas. These included sleeping problems (2), mood disturbances (2), emotional affect (10), motivational level (1), cognitive problems (3) and coping ability (1). There were four response categories. The first of these identified whether study participants has experienced the symptom or not. The second consisted of a 10-point numerical rating scale of its severity. The third also contained a 10-

point numerical rating scale for the level of symptom distress. The fourth was the duration of the symptom specified in days and weeks.

Data collection for the pilot study took place over a period of three months from March 2004 to May 2004 and 23 men (100%) whose partners were pregnant participated. It is important to point out that 14 (61%) of these men had also participated in the qualitative phase of the investigation which meant that they completed the pilot questionnaires after the birth of their infant as opposed to the remaining nine gentleman (39%) who completed it during the pregnancy. All participants were requested to complete the questionnaire repeatedly over two time periods with a time interval of 4 weeks between repeated measures. This time interval between the repeated measures took account of the likelihood of “*practice effects*” where responses may become practised because of familiarity with the questionnaire if the completion periods are too close together (Jupp 2006). Respondents were assured that there were no right or wrong answers and requested not to confer with anyone else in the completion of the questionnaires. They were asked to comment on format, sequencing, wording and clarity, appropriateness and comprehensiveness of the questions as well as any other points they might find inappropriate or difficult. They were also asked to make additional commentary on the clarity of the response option categories. The importance of full repeated completion of the questionnaires was emphasised to respondents. Stamped addressed return envelopes were provided for both questionnaires. Obviously the participants were known to the researcher but their responses were kept anonymous.

Men's Health during Partner's Pregnancy Questionnaire

Introduction

This Appendix relates to Chapter 3 presents the results of the pilot study in two parts with the first part reporting the statistical findings for the reliability and validity of the study instrument all of which are displayed on Tables 4b-13. The second part outlines respondents' commentary of aspects of the questionnaire and the subsequent amendments made in the light of both.

Validation Results of Pilot Study Questionnaire

Table 4b. Cronbach alpha reliability coefficient correlations for physical symptoms of $\alpha < 0.70$ in the pilot study ($n=23$)

Symptoms	Symptom Mean	α
Gastrointestinal		
Nausea	1.96	0.59
Food cravings	1.17	0.57
Genito-urinary		
Difficulty urinating	2.48	0.64
Miscellaneous		
Lack of energy	2.22	0.61
Feeling unwell	2.09	0.61

All of these items were subsequently removed from the amended final questionnaire.

Table 5. Cronbach alpha reliability coefficient correlations for psychological symptoms of $\alpha < 0.70$ in the pilot study ($n=23$)

Symptoms	Symptom Mean	α
Emotional affect		
Over-sleeping	0.74	0.54
Feeling angry	1.17	0.49
Unable to relax	0.70	0.50
Not feeling myself	0.17	0.48

All of these items were subsequently removed from the amended final questionnaire.

Table 6. Spearman's rank order correlation coefficient test for severity scores of physical symptoms in the pilot study (*n*-23)

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Gastrointestinal		
Stomach pains/cramps	0.98	0.001
Heartburn	0.92	0.001
Stomach distension	*	*
Indigestion	0.97	0.001
Nausea	0.99	0.001
Vomiting	0.99	0.001
Constipation	0.99	0.001
Diarrhoea	0.99	0.001
Food cravings	0.99	0.001
Increased appetite	0.87	0.001
Poor appetite	0.61	0.002
Weight gain	0.78	0.001
Weight loss	0.89	0.001
Respiratory		
Frequent colds	0.99	0.001
Cough	0.98	0.001
Sore throat	0.98	0.001
Breathlessness	0.98	0.001
Nosebleeds	*	*

* Statistical analysis not possible as these symptoms were rarely reported.

**Table 6 (Cont.) Spearman's rank order correlation coefficient test
for severity scores of physical symptoms in the pilot study (*n*-23)**

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Genito-urinary		
Difficulty urinating	0.98	0.001
Pain urinating	0.99	0.001
Frequently urinating	0.99	0.001
Oral/Dental		
Tooth pain	0.99	0.001
Sore gums	*	0.001
Mouth ulcers	*	*
Musculo-skeletal		
Back pain	0.99	0.001
Leg pain	0.99	0.001
Miscellaneous		
Headache	*	*
Tiredness	0.99	0.001
Lack of energy	0.99	0.001
Feeling unwell	0.99	0.001
Fainting	*	*

* Statistical analysis not possible as these symptoms were rarely reported.

Table 7. Spearman's rank order correlation coefficient test for distress scores of physical symptoms in the pilot study (*n*-23)

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Gastrointestinal		
Stomach pains/cramps	0.99	0.001
Heartburn	0.97	0.001
Stomach distension	*	*
Indigestion	0.97	0.001
Nausea	0.99	0.001
Vomiting	0.99	0.001
Constipation	0.99	0.001
Diarrhoea	0.99	0.001
Food cravings	0.99	0.001
Increased appetite	0.87	0.001
Poor appetite	0.61	0.002
Weight gain	0.78	0.001
Weight loss	0.89	0.001
Respiratory		
Frequent colds	0.99	0.001
Cough	0.98	0.001
Sore throat	0.98	0.001
Breathlessness	0.98	0.001
Nosebleeds	0.99	0.001

* Statistical analysis not possible as this symptom was rarely reported.

Table 7 (Cont.) Spearman's rank order correlation coefficient test for distress scores of physical symptoms in the pilot study (*n*-23)

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Genito-urinary		
Difficulty urinating	0.99	0.001
Pain urinating	0.99	0.001
Frequently urinating	0.98	0.001
Oral/Dental		
Tooth pain	0.99	0.001
Sore gums	*	*
Mouth ulcers	0.99	0.001
Musculo-skeletal		
Back pain	0.98	0.001
Leg pain	0.99	0.001
Miscellaneous		
Headache	*	*
Tiredness	0.98	0.001
Lack of energy	0.99	0.001
Feeling unwell	0.99	0.001
Fainting	*	*

* Statistical analysis not possible as these symptoms were rarely reported.

Table 8. Spearman's rank order correlation coefficient test for severity scores of psychological symptoms in the pilot study (*n*=23)

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Sleep		
Difficulty sleeping	0.98	0.001
Over-sleeping	0.99	0.001
Mood		
Feeling depressed	0.99	0.001
Mood swings	*	*
Emotional affect		
Feeling annoyed	0.98	0.001
Feeling frustrated	0.99	0.001
Feeling angry	0.98	0.001
Feeling irritable	0.99	0.001
Feeling anxious	0.99	0.001
Feeling stressed	0.99	0.001
Unable to relax	*	*
Restless	0.98	0.001
Preoccupied	*	*
Not feeling myself	*	*
Motivation		
Poor motivation	0.99	0.001

* Statistical analysis not possible as these symptoms were rarely reported.

Table 8 (Cont.) Spearman's rank order correlation coefficient test for severity scores of psychological symptoms in the pilot study (*n*=23)

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Cognition		
Poor memory	0.99	0.001
Poor concentration	0.99	0.001
Distracted	0.99	0.001
Coping		
Unable to cope	0.92	0.001

Table 9. Spearman's rank order correlation coefficient test for distress scores of psychological symptoms in the pilot study (*n*=23)

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Sleep		
Difficulty sleeping	0.93	0.001
Over-sleeping	0.99	0.001
Mood		
Feeling depressed	0.99	0.001
Mood swings	*	*
Emotional affect		
Feeling annoyed	0.92	0.001
Feeling frustrated	0.99	0.001
Feeling angry	0.99	0.001
Feeling irritable	0.99	0.001
Feeling anxious	0.99	0.001
Feeling stressed	0.99	0.001
Unable to relax	0.99	0.001
Restless	0.97	0.001
Preoccupied	*	*
Not feeling myself	0.98	0.001
Motivation		
Poor motivation	0.99	0.001

* Statistical analysis not possible as these symptoms were rarely reported.

**Table 9 (Cont.) Spearman's rank order correlation coefficient test
for distress scores of psychological symptoms in the pilot study (*n*-23)**

Symptoms	Correlation Coefficient (r) between Test-Retest Scores	P-value
Cognition		
Poor memory	0.99	0.001
Poor concentration	0.99	0.001
Distracted	0.99	0.001
Coping		
Unable to cope	0.99	0.001

Table 10. Mann-Whitney *U* test for severity scores of physical symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Gastrointestinal			
Stomach pains/cramps	5.04 (3.25)	5.22 (3.13)	ns
Heartburn	1.35 (2.23)	1.52 (2.23)	ns
Stomach distension	0.52 (1.47)	0.57 (1.65)	ns
Indigestion	1.78 (2.09)	1.91 (2.17)	ns
Nausea	1.96 (2.57)	2.09 (2.64)	ns
Vomiting	2.39 (2.66)	2.39 (2.61)	ns
Constipation	1.30 (2.29)	1.30 (2.38)	ns
Diarrhoea	2.91 (3.10)	3.09 (3.30)	ns
Food cravings	1.17 (2.48)	1.30 (2.76)	ns
Increased appetite	2.00 (2.66)	2.04 (2.82)	ns
Poor appetite	1.52 (2.25)	1.65 (2.48)	ns
Weight gain	1.74 (2.77)	1.83 (3.13)	ns
Weight loss	1.65 (2.48)	1.43 (2.35)	ns
Respiratory			
Frequent colds	1.00 (1.76)	1.13 (2.05)	ns
Cough	1.09 (2.54)	1.09 (2.45)	ns
Sore throat	1.30 (2.46)	1.48 (2.69)	ns
Breathlessness	0.52 (1.95)	0.57 (2.02)	ns
Nosebleeds	0.35 (1.03)	0.35 (1.03)	*

* Statistical analysis not possible as symptoms were rarely reported.

Table 10 (Cont.) Mann-Whitney *U* test for severity scores of physical symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value
	Test	Re-test	(Cut off value = 0.05)
Oral/Dental			
Tooth pain	2.39 (3.88)	2.35 (3.85)	ns
Sore gums	0.61 (1.50)	0.43 (1.24)	ns
Mouth ulcers	0.48 (1.34)	0.48 (1.34)	*
Musculo-skeletal			
Back pain	2.22 (2.91)	2.22 (2.89)	ns
Leg pain	0.91 (1.81)	0.91 (1.81)	*
Miscellaneous			
Headache	0.78 (2.22)	0.78 (2.22)	*
Tiredness	2.61 (2.59)	2.57 (2.57)	ns
Feeling unwell	2.09 (2.76)	2.35 (2.92)	ns
Fainting	0.39 (1.88)	0.39 (1.88)	*

* Statistical analysis not possible as these symptoms were rarely reported.

Table 11. Mann-Whitney *U* test for distress scores of physical symptoms in the pilot study (*n*=23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Gastrointestinal			
Stomach pains/cramps	5.65 (3.35)	5.61 (3.29)	ns
Heartburn	1.70 (2.80)	1.78 (2.76)	ns
Stomach distension	0.65 (1.72)	0.65 (1.72)	ns
Indigestion	1.91 (2.23)	1.78 (2.11)	ns
Nausea	2.65 (3.29)	2.78 (3.45)	ns
Vomiting	3.09 (3.50)	3.09 (3.39)	ns
Constipation	1.70 (3.07)	1.78 (3.07)	ns
Diarrhoea	3.83 (4.03)	3.91 (4.21)	ns
Food cravings	1.35 (2.87)	1.30 (2.84)	ns
Increased appetite	1.22 (1.68)	1.30 (1.82)	ns
Poor appetite	1.83 (2.89)	1.78 (2.75)	ns
Weight gain	1.26 (2.14)	1.48 (2.66)	ns
Weight loss	1.48 (2.63)	1.00 (1.68)	ns
Respiratory			
Frequent colds	1.13 (2.18)	1.26 (2.42)	ns
Cough	1.30 (2.99)	1.26 (2.89)	ns
Sore throat	1.39 (2.57)	1.52 (2.63)	ns
Breathlessness	0.61 (2.21)	0.65 (2.21)	ns
Nosebleeds	0.30 (0.88)	0.39 (1.16)	*

* Statistical analysis not possible as this symptom was rarely reported.

Table 11 (Cont.) Mann-Whitney *U* test for distress scores of physical symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Genito-urinary			
Difficulty urinating	2.87 (3.71)	2.91 (3.97)	ns
Pain urinating	1.74 (3.55)	1.83 (3.70)	ns
Frequently urinating	1.96 (3.40)	1.96 (3.32)	ns
Oral/Dental			
Tooth pain	2.57 (4.09)	2.48 (4.01)	ns
Sore gums	0.39 (1.16)	0.39 (1.16)	*
Mouth ulcers	0.48 (1.34)	0.52 (1.47)	ns
Musculo-skeletal			
Back pain	2.52 (3.39)	2.35 (3.16)	ns
Leg pain	1.52 (2.99)	1.39 (2.82)	ns
Miscellaneous			
Headache	0.83 (2.31)	0.83 (2.31)	ns
Tiredness	2.65 (2.72)	2.61 (2.68)	ns
Lack of energy	2.22 (2.84)	2.30 (2.89)	ns
Feeling unwell	2.48 (3.26)	2.35 (3.09)	ns
Fainting	0.43 (2.09)	0.43 (2.09)	*

* Statistical analysis not possible as these symptoms were rarely reported.

Table 12. Mann-Whitney *U* test for severity scores of psychological symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Sleep			
Difficulty sleeping	3.61 (2.78)	3.91 (2.91)	ns
Over-sleeping	0.74 (1.57)	0.78 (1.65)	ns
Mood			
Feeling depressed	1.74 (2.59)	1.78 (2.69)	ns
Mood swings	0.17 (0.83)	0.17 (0.83)	*
Emotional affect			
Feeling annoyed	0.74 (1.36)	0.74 (1.36)	ns
Feeling frustrated	0.78 (1.51)	0.74 (1.45)	ns
Feeling angry	1.22 (1.86)	1.26 (1.94)	ns
Feeling irritable	0.87 (1.82)	0.91 (1.86)	ns
Feeling anxious	1.17 (2.10)	1.30 (2.34)	ns
Feeling stressed	0.91 (2.19)	0.96 (2.25)	ns
Unable to relax	0.61 (1.62)	0.61 (1.62)	ns
Restless	0.30 (1.02)	0.35 (1.15)	ns
Preoccupied	0.70 (1.61)	0.70 (1.61)	ns
Not feeling myself	0.17 (0.58)	0.17 (0.58)	*
Motivation			
Poor motivation	1.09 (2.21)	1.04 (2.16)	ns

* Statistical analysis not possible as these symptoms were rarely reported.

Table 12 (Cont.) Mann-Whitney *U* test for severity scores of psychological symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Cognition			
Poor memory	1.39 (2.54)	1.48 (2.76)	ns
Poor concentration	1.13 (2.34)	1.17 (2.39)	ns
Distracted	0.78 (2.32)	0.74 (2.26)	ns
Coping			
Unable to cope	0.39 (1.37)	0.65 (2.17)	ns

Table 13. Mann-Whitney *U* test for distress scores of psychological symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Sleep			
Difficulty sleeping	3.70 (3.18)	3.96 (3.05)	ns
Over-sleeping	0.74 (1.66)	0.78 (1.70)	ns
Mood			
Feeling depressed	2.00 (2.95)	2.04 (2.97)	ns
Mood swings	0.22 (1.04)	0.22 (1.04)	*
Emotional affect			
Feeling annoyed	0.61 (1.30)	0.61 (1.23)	ns
Feeling frustrated	0.78 (1.51)	0.83 (1.56)	ns
Feeling angry	1.17 (1.78)	1.22 (1.88)	ns
Feeling irritable	0.87 (1.89)	0.83 (1.75)	ns
Feeling anxious	1.39 (2.58)	1.43 (2.63)	ns
Feeling stressed	0.96 (2.35)	1.00 (2.39)	ns
Unable to relax	0.70 (1.89)	0.65 (1.75)	ns
Restless	0.35 (1.19)	0.35 (1.15)	ns
Preoccupied	0.43 (1.04)	0.43 (1.04)	ns
Not feeling myself	0.17 (0.58)	0.22 (0.74)	ns
Motivation			
Poor motivation	1.22 (2.49)	1.13 (2.34)	ns

* Statistical analysis not possible as this symptom was rarely reported.

Table 13 (Cont.) Mann-Whitney *U* test for distress scores of psychological symptoms in the pilot study (*n*-23)

Symptoms	Median Scores (SD)		P-value (Cut off value = 0.05)
	Test	Re-test	
Cognition			
Poor memory	1.65 (3.11)	1.52 (2.92)	ns
Poor concentration	1.17 (2.53)	1.30 (2.74)	ns
Distracted	0.74 (2.05)	0.70 (1.99)	ns
Coping			
Unable to cope	0.83 (2.74)	0.74 (2.45)	ns

Respondents' commentary on the questionnaire

Fourteen respondents (61%) were critical of the format of the questionnaire indicating that it was lengthy, and portrayed in an inappropriate style. Some symptom descriptors were criticised for being too abstract such as, 'more frequent colds', 'over sleeping' and 'poor motivation'. Other questions required rephrasing such as 'tooth pain' and 'leg pain'. Respondents felt that some items were vague and non-descriptive such as 'lack of energy', 'feeling unwell' and 'not feeling myself'. Their subsequent removal from the questionnaire, or modification, was suggested. The symptom of being 'unable to cope' was questioned in terms of its context. Two questions were described as having similar meaning: 'feeling angry' and 'feeling annoyed'. Shortcomings associated with the response option categories and their lay out were also highlighted. The first of these was that the numerical range from 1-10 for the severity and distress response option categories could not be sub-divided equally between the three descriptors. For example, 'not at all severe' (1-3); 'moderately severe' (4-6) and 'extremely severe' (7-10). Another problem included inconsistencies in the interval/duration of symptoms such as '2-7 days' followed by 2-4 weeks in one step.

Amendments

This is the only pilot study on record to have assessed the reliability and validity of a structured questionnaire to measure the characteristics of the Couvade syndrome within the UK or internationally. The reasons for the dearth of pilot studies on the syndrome in the literature are unclear but concur with Lindquist's (1991) observation that full reports of such studies *per se* are rare within the research literature. Furthermore, pilot studies need to pay more attention to the actual improvements made to the study instrument and not just the statistical estimates of its reliability (Van Teijlingen *et al.* 2001). In keeping with this suggestion this Appendix outlines the amendments made to the questionnaire.

The questionnaire was changed from portrait to landscape format, rephrased and reformatted to reduce its length from 17 to 5 pages. Edwards *et al* (2002) argue that lengthy questionnaires can adversely affect response rate. The questionnaire was also reformatted to enhance its face validity (Oppenheim, 1992) and the instructions for completion were condensed and made simpler. Additionally the language was made simpler in an attempt to make it easier to read and understand. In accommodating this further, symptom medical jargon was avoided or replaced by more simple terms. The symptom descriptors were clarified and rephrased. For example, 'more frequent colds' was reworded to 'more colds than usual' and 'poor motivation' likewise to 'lack of motivation'. Certain symptoms were also rephrased such as "tooth pain" to "toothache" and "leg pain" to "leg cramps". Two questions having similar meaning, "feeling angry" and "feeling annoyed" were changed to include the latter only. "Nausea" was changed to "unable to keep food down" and "feeling depressed" to "feeling low in mood". The symptom of being "unable to cope" was re-defined in terms of its context as "unable to cope with daily life". The response option categories were additionally altered to reflect a more equal distribution of the numerical rating range for the severity and distress of symptoms. For example, 'not at all severe' (1-3); 'moderately severe' (4-6) and 'extremely severe' (7-9). Inconsistencies in the wording of the duration of symptoms from days to weeks was changed to include number of days only.