

Surrogacy: the experiences of surrogate mothers

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BACKGROUND: This study examined the motivations, experiences and psychological consequences of surrogacy for surrogate mothers. **METHODS:** Thirty-four women who had given birth to a surrogate child approximately 1 year previously were interviewed by trained researchers, and the data rated using standardized coding criteria. **Information was obtained on:** (i) reasons for the woman's decision to become a surrogate mother; (ii) her retrospective view of the relationship with the commissioning couple before the pregnancy, during the pregnancy, and after the birth; (iii) her experiences during and after relinquishing the child; and (iv) how others reacted to her decision to become a surrogate mother. **RESULTS:** It was found that surrogate mothers do not generally experience major problems in their relationship with the commissioning couple, in handing over the baby, or from the reactions of those around them. The emotional problems experienced by some surrogate mothers in the weeks following the birth appeared to lessen over time. **CONCLUSIONS:** Surrogate mothers do not appear to experience psychological problems as a result of the surrogacy arrangement.

Key words: experiences/motivations/psychology/surrogacy/surrogate mother

Introduction

The practice of surrogacy, whereby one woman bears a child for another woman, is one of the most controversial procedures in the field of assisted reproduction. Media coverage of surrogacy arrangements has tended to focus on the negative aspects of surrogacy, such as the 'Baby M' case in the United States where the surrogate mother refused to relinquish the child (New Jersey Supreme Court, 1987). There are two types of surrogacy: partial (genetic), and full (gestational). With partial surrogacy, the surrogate mother is also the genetic mother of the child, and conception usually occurs by artificial insemination using the commissioning father's sperm. With full surrogacy, the commissioning couple are the genetic parents of the child and conception takes place at a clinic through IVF.

There has been considerable unease regarding the potentially adverse effects of surrogacy for surrogate mothers. For example, it has been suggested that relinquishing the child may be extremely distressing and may result in psychological problems (British Medical Association, 1996). It has also been feared that the surrogate mother may form a bond with the baby prenatally that would make it particularly difficult for her to hand over the child to the commissioning parents. On the other hand, it has been proposed that surrogate mothers may tend to distance themselves from the unborn baby, believing that the child they carry is not theirs (Ragoné, 1994). Such a detachment may make them more likely to put themselves and the unborn child's health at risk (British Medical

Association, 1996). For those women who do relinquish the child, the risk of post-natal depression, as well as feelings of anger or guilt, may add further strain to the woman's psychological health. Whether or not the commissioning couple was known to the surrogate mother prior to the surrogacy arrangement, and whether or not the surrogate mother is the genetic mother of the child, are also factors that may influence the psychological well-being of surrogate mothers. Furthermore, it has been argued that surrogacy may exploit women from a more economically disadvantaged background (Blyth, 1994), such that women may enter into a surrogacy arrangement because of financial hardship without being fully aware of the potential risks (Brazier *et al.*, 1998).

Other concerns relating to surrogacy include the impact on the surrogate mother's partner, her parents and any existing children. The British Medical Association, in its review of surrogacy practice in the UK, emphasized the importance of partners of surrogate mothers giving their full support during the arrangement and after the birth of the baby. Where the surrogate mother has children of her own, the British Medical Association suggests that children should be informed about the arrangement beforehand, as the disappearance of the baby after the birth may cause them distress (British Medical Association, 1996). It has also been suggested that surrogate mothers may become ostracised or be shunned by disapproving neighbours and friends (Blyth, 1994), which may have an adverse effect on the psychological well-being of some surrogate mothers and their families.

Very little research has been conducted on the experiences of surrogate mothers. Only a handful of studies have included interviews with women about their experiences of surrogacy and their reasons for choosing to be a surrogate mother. From a sample of 19 surrogate mothers, it was found that there were many different reasons for the decision to become a surrogate mother, such as financial gain, enjoyment of pregnancy/childbirth, and obtaining a sense of self worth and value (Blyth, 1994). It was also found that 10 of the 19 surrogate mothers experienced some form of negative response from those around them. The sample consisted of women who were at different stages of the surrogacy process; that is, some women were interviewed whilst pregnant, whereas others had given birth to a surrogate child who had reached school age. All of the women had been recruited through a United Kingdom surrogacy agency, though this may not give a true representation of all surrogate mothers as not all surrogacy arrangements are made through an agency. In some cases, surrogate mothers are relatives or friends of the commissioning couple. An American qualitative study (Ragoné, 1994) also examined the motivations for surrogate mothers deciding to embark upon surrogacy. Ragoné found that payment was not an important motivating factor. Instead, women tended to report more altruistic reasons.

The existing research on the views and experiences of surrogate mothers has tended to examine small, sometimes biased, samples. The aim of the present investigation was to obtain systematic information from a representative sample of surrogate mothers who had given birth to a surrogate child approximately 1 year prior to interview. Findings relating to the commissioning couples' experiences of the surrogacy arrangement are reported elsewhere (MacCallum *et al.*, 2003; Golombok *et al.*, submitted).

Materials and methods

Participants

Thirty-four surrogate mothers of 1-year-old babies took part in the study and were recruited in two ways. Nineteen of the women were surrogate mothers for commissioning parents already participating in an ongoing study and were informed about the study by the couple. Fifteen of the women were recruited through the United Kingdom surrogacy organisation Childlessness Overcome Through Surrogacy (COTS). All surrogate mothers who were registered with COTS and had given birth to a baby approximately 1 year previously were asked to participate in the investigation.

Although it was not possible to calculate an exact response rate because of overlap between the two recruitment methods, and also because not all of the commissioning parents wished to approach the surrogate mother about the research, a response rate of 76% was obtained for those recruited through COTS. It was estimated that 68% of those approached by the commissioning couple agreed to take part.

Nineteen (56%) of the women had undergone a partial surrogacy arrangement, and 15 (44%) had had a full surrogacy arrangement. Seven women (21%) were known surrogate mothers (i.e. sister, friend, or mother), and 27 (79%) were previously unknown to the commissioning couple (i.e. met through a third party). Sociodemographic information is presented in Table I.

Table I. Sociodemographic information

Parameter	No. of cases
Age of surrogate mother (years) ^a	34 ± 5.44
<i>Own children</i>	
Yes	32 (94)
No	2 (6)
<i>Marital status</i>	
Married/co-habiting	23 (67)
Non-co-habiting partner	5 (15)
Single	6 (18)
<i>Social class</i>	
Professional/managerial	4 (12)
Skilled/non-manual	9 (26)
Skilled manual	7 (21)
Partly skilled/unskilled	14 (41)
<i>Surrogate working status</i>	
No	14 (41)
Part-time	14 (41)
Full-time	6 (18)
<i>No. of previous surrogate births</i>	
0	29 (85)
1	1 (3)
2	1 (3)
3	3 (9)
<i>Type of surrogacy</i>	
Partial (genetic)	19 (56)
Full (non-genetic)	15 (44)
<i>Surrogate mother</i>	
Known surrogate	7 (21)
Unknown surrogate	27 (79)

^aValue is mean ± SD.

Values in parentheses are percentages.

Measures

The surrogate mothers were administered a standardized semi-structured interview in their own homes around the time of the child's first birthday. Interviews were conducted by trained researchers, and each variable was rated using strict standardized coding criteria. The interview procedure was adapted from a standardized interview developed by the same authors for a study of commissioning couples (see MacCallum *et al.*, 2003; Golombok *et al.*, submitted). The women were asked about their motivation to become a surrogate mother; their relationship over time with the commissioning couple and the child; their experiences during and after relinquishing the child; and their openness with family and friends about the surrogacy.

Motivations for surrogacy

The women were asked when they had first decided to become a surrogate mother (coded in years). What had first caused them to think about surrogacy was coded into one of three categories: 'media coverage'; 'suggested by friend/family member'; and 'long-term awareness of surrogacy'. They were also asked what their reasons were for choosing to become a surrogate mother, and each of the following variables was assigned a 'yes' or 'no' rating according to the surrogate mothers responses: 'self-fulfilment'; 'wanted to help others'; 'love being pregnant'; and 'payment'. Where more than one reason had been given, this was also rated.

Relationship and frequency of contact with the commissioning couple before the birth

The surrogate mothers were asked to recall their relationship with the commissioning couple before treatment had begun, during the first few months of the pregnancy, and during the last few months of the pregnancy. For the latter two time periods, ratings were obtained separately for the relationship with the commissioning mother and father. Surrogate mothers' description of the relationship was rated according to one of three categories: 'harmonious'; 'dissatisfaction or coldness'; and 'major conflict or hostility'. 'Harmonious' was coded when the surrogate mother described a warm or friendly relationship with co-operation on both sides; 'dissatisfaction or coldness' was coded when minor disagreements had arisen between the parties or when little communication or warmth was apparent; and a rating of 'major conflict or hostility' was coded when evidence of arguments or a breakdown in communication was present. Thus, the relationship between the surrogate mother and the commissioning parents was rated on a continuum ranging from no difficulties through moderate difficulties (associated with either dissatisfaction or coldness) to severe difficulties. The frequency of contact between the couple and the surrogate mother at the start and at the end of the pregnancy was also recorded separately for the commissioning mother and father. In addition, the surrogate mother was asked how involved the commissioning mother and father had been during the pregnancy. This was rated according to one of three categories for mothers and fathers separately: 'no or little involvement'; 'moderately involved'; and 'very involved'. 'No or little involvement' was coded when the commissioning mother or father had very little contact with the surrogate mother during her pregnancy. 'Moderately involved' was coded when the commissioning mother or father showed some interest in the pregnancy by attending some scans or antenatal appointments, and a rating of 'very involved' was coded when the commissioning mother or father attended all of the scans or were aware of all the appointments and would discuss the appointments with the surrogate mother if unable to attend. Surrogate mothers were also asked whether they were happy with the level of involvement that they had received from each parent. Their responses were coded according to one of three categories for mothers and fathers separately: 'yes - happy with involvement'; 'No - too much involvement'; and 'No - not enough involvement'.

Experiences during and after relinquishing the child

Data were obtained about the handing over of the child to the commissioning couple. Who decided when it should take place was rated categorically with responses being assigned to one of the following: 'mutual agreement'; 'determined by surrogate mother'; and 'determined by commissioning couple'. Whether the surrogate mother was happy with the decision was rated as either 'yes' or 'no'. In addition, whether the surrogate mother had any doubts about handing over the child was coded according to one of three categories: 'no doubts'; 'surrogate had doubts'; and 'surrogate reluctant to relinquish child'.

Information was also obtained from surrogate mothers about how relinquishing the child had affected them in the year following the birth. They were asked to recount their feelings in the weeks following the birth, a few months following the birth, and how they felt currently (1 year on). These data were rated on a four-point scale, ranging from: 1, 'No difficulties', where the surrogate mother showed no sign of being upset; 2, 'Some difficulties' where the surrogate mother described having been or being upset but believed that the feelings were short term; 3, 'Moderate difficulties' where the surrogate mother described feeling very depressed or

anxious, but was still able to work or manage the house; and 4, 'Major difficulties' where she felt so depressed or anxious that she was unable to function.

In addition, the surrogate mothers were asked whether they had sought medical help for psychological problems and whether they had taken any medication to treat such problems. Data were obtained separately for periods before and after the surrogacy birth. The Edinburgh Depression Scale (Thorpe, 1993) was also completed by surrogate mothers. This is a reliable and valid measure of post-natal depression where higher scores represent greater difficulties.

Frequency of contact with the couple and the child following the birth

The frequency of contact with the commissioning family since the birth was obtained separately for the commissioning mother, the commissioning father and the child. The surrogate mother was also asked what role she would play in the child's life, and this was coded separately for known and unknown surrogate mothers. Known surrogate mothers were categorized according to one of two options: 'involvement appropriate to their relationship status' (i.e. not differing from their role had they not been the surrogate mother); or 'play a special role' (i.e. being the child's godmother or being involved in the child's welfare). For unknown surrogate mothers, this variable was categorized according to one of four options: 'no involvement with the family'; 'contact with the parents but not the child'; 'contact with the child'; and 'play a special role' (e.g. attending significant events in the child's life such as birthday parties). In addition, the surrogate mother was asked how she viewed the relationship between herself and the child. The relationship was rated with respect to three categories: 'no special bond' (coded when the surrogate mother reported that she had no feelings towards the child); 'special bond' (coded when the surrogate mother reported that the child was special to her). and 'like own child' (coded when the surrogate mother saw the child as her own).

Openness about surrogacy

Surrogate mothers were asked whom they had told about the surrogacy arrangement, and how much they had told. Data were obtained separately for the responses of family, friends and, where applicable, the responses of their partners and children. The reactions of those who had been told were coded separately for how they felt when initially told, and how they felt currently. Responses were rated according to one of three categories: 'Positive' (when the individual was encouraging of, or pleased about, the surrogacy arrangement); 'Neutral/Ambivalent' (when the individual was unconcerned about the arrangement, or when mixed feelings were displayed); and 'Negative' (when the individual was unhappy about the arrangement, or felt hostile towards the commissioning couple or surrogate mother because of the surrogacy arrangement). With respect to surrogate mothers' partners and their own children, information was obtained about their reaction during the pregnancy and children's reactions at the time of the handover. For those women who had a partner who lived with them, information was also obtained on how supportive their partner was, and whether there were any particular difficulties for them during the surrogacy process. In addition, the women were asked to complete the Golombok Rust Inventory of Marital State (GRIMS) (Rust *et al.*, 1990); this is a reliable and valid questionnaire assessment of the quality of the marital relationship with higher scores indicating poorer marital quality.

Results

Results are reported as cases and percentages. For the variables relating to experiences during and after relinquishing the child and frequency of contact with the couple and the child following the birth, differences between partial (genetic) and host (non-genetic) pregnancies, and known and unknown surrogate mothers, were assessed using *t*-test and chi-square analyses. Only those comparisons that were statistically significant are reported below.

Motivations for surrogacy

On average, the women had decided to become a surrogate mother 6.21 years before the time of interview, the longest time being 20 years, and the shortest 1 year. Twenty-three (68%) of the women had first heard about surrogacy from the media, five (15%) had first heard about it from a family member or a friend, and six (17%) reported a long-term awareness of surrogacy (Table II). Some women gave multiple reasons for

Table II. Motivations for surrogacy

Situation	Number of cases
<i>First heard about surrogacy</i>	
Media coverage	23 (68)
Suggested by friend/family member	5 (15)
Long-term awareness of surrogacy	6 (17)
<i>Motivation</i>	
Wanting to help a childless couple	31 (91)
Enjoyment of pregnancy	5 (15)
Self-fulfilment	2 (6)
Payment	1 (3)

Values in parentheses are percentages.

their decision to become a surrogate mother. The most common motivation reported by 31 (91%) women was 'wanting to help a childless couple', five (15%) gave 'enjoyment of pregnancy' as a reason for opting for surrogacy, and two (6%) gave 'self-fulfilment'. Only one surrogate mother (3%) said that payment was a motivating factor.

Relationship and frequency of contact with the commissioning couple before the birth

Relationship with couple

The surrogate mothers' retrospective views of the relationship with the commissioning couple at three different time points are shown in Table III. Before the pregnancy, all of the surrogate mothers felt that they had a 'harmonious' relationship with the commissioning couple. At the start of the pregnancy, 33 (97%) surrogate mothers reported having a 'harmonious' relationship with the commissioning mother, with only one mother (3%) reporting her relationship as having 'major conflict or hostility'. Thirty-two (94%) surrogate mothers reported having a 'harmonious' relationship with the father at the start of the pregnancy, with one woman (3%) describing the relationship as having some 'dissatisfaction or coldness', and one woman (3%) describing 'major conflict or hostility' (the partner of the commissioning mother who also obtained this rating).

During the last few months of the pregnancy, 33 (97%) surrogate mothers felt that they had a 'harmonious' relationship with the commissioning mother, and 32 (94%) felt that they had a 'harmonious' relationship with the commissioning father. None of the women reported having a relationship characterized by 'major conflict or hostility' with either the commissioning mother or the commissioning father.

Table III. Relationship, frequency of contact and involvement with couple before and during pregnancy

Situation	Relationship with couple		First 3 months of pregnancy		Last 3 months of pregnancy	
	Before pregnancy		Mother	Father	Mother	Father
	<i>n</i> (%)		<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Harmonious	34 (100)	Father	33 (97)	32 (94)	33 (97)	32 (94)
Dissatisfaction/Coldness	0 (0)	Mother	0 (0)	1 (3)	1 (3)	2 (6)
Major conflict or hostility	0 (0)	Father	1 (3)	1 (3)	0 (0)	0 (0)
Frequency of contact with the couple during the pregnancy						
	Mother		Father			
	Beginning of pregnancy	End of pregnancy	Beginning of pregnancy	End of pregnancy		
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)		
Not at all	1 (3)	2 (6)	1 (3)	3 (9)		
At least once a month	24 (71)	24 (71)	22 (65)	22 (65)		
At least once in 3 months	9 (26)	8 (23)	11 (32)	9 (26)		
Involvement of commissioning parents						
	Mother		Father			
	<i>n</i> (%)	<i>n</i> (%)				
No or little involvement	0 (0)	3 (9)				
Moderately involved	6 (17)	16 (47)				
Very involved	28 (83)	15 (44)				
Happy with involvement						
	Mother		Father			
	<i>n</i> (%)	<i>n</i> (%)				
Yes, happy with involvement	32 (94)	32 (94)				
No, too much involvement	0 (0)	0 (0)				
No, not enough involvement	2 (6)	2 (6)				

Table IV. Experiences during and after relinquishing the child

Situation	n (%)		
Decision of when to hand over the child			
Mutual agreement	31 (91)		
Determined by surrogate mother	3 (9)		
Determined by commissioning couple	0 (0)		
Happy with decision?			
Yes	34 (100)		
No	0 (0)		
Surrogate mothers doubts or difficulties at handover			
No doubts	34 (100)		
Surrogate had doubts	0 (0)		
Surrogate reluctant to relinquish child	0 (0)		
Difficulties experienced by surrogate mothers in the year following the birth			
	Initially after handover	Few months after handover	1 year after handover
	n (%)	n (%)	n (%)
No difficulties	22 (65)	29 (85)	32 (94)
Some difficulties	11 (32)	5 (15)	2 (6)
Moderate difficulties	1 (3)	0 (0)	0 (0)
Major difficulties	0 (0)	0 (0)	0 (0)
Psychological contacts	Before surrogacy		After birth of the child
	n (%)		n (%)
None	31 (91)		30 (88)
General practitioner	2 (6)		3 (9)
Outpatient clinic	1 (3)		1 (3)

Frequency of contact

During the first three months of pregnancy, 24 (71%) surrogate mothers saw the commissioning mother at least once a month, and a similar proportion ($n = 22$; 65%) saw the commissioning father at least once a month. One surrogate mother reported not seeing the couple at all in the first few months, and the remainder had seen the couple at least once during this time period.

Towards the end of the pregnancy, similar proportions (71 and 65%) of surrogate mothers saw the commissioning mother and father respectively at least once a month. However, the number who had not seen the couple had increased to two women (6%) not having seen the commissioning mother, and three women (9%) not having seen the commissioning father.

Involvement

The majority of women ($n = 28$; 83%) felt that the commissioning mother was very involved in the pregnancy, and the remainder believed that she was moderately involved. The majority ($n = 32$; 94%) were happy with the level of involvement of the mother, while the remaining two (6%), both of whom were previously unknown surrogate mothers, believed it was not enough.

In contrast, the commissioning fathers were less involved in the pregnancy. Fifteen women (44%) felt that the commissioning fathers were very involved with the pregnancy, a further 16 (47%) felt that they were moderately involved, and three (9%) felt that they had no or little involvement. Despite the lower level of involvement, the majority of women ($n = 32$; 94%) were happy with the degree of involvement of the

commissioning father, with only two women (6%) believing that it was not enough.

Experiences during and after relinquishing the child

The results of the surrogate mothers' experiences during and after relinquishing the child are summarized in Table IV. In 31 cases (91%), the decision of when to hand the child over was the result of a mutual agreement between the couple and the surrogate mother. In three cases (9%), the surrogate mother had decided when the child was to be handed over. All of the women were happy with the decision reached about when to hand over the baby, and none had experienced any doubts or difficulties whilst handing over the baby.

How the women recalled feeling at three different time points over the following year is also shown in Table IV. Eleven women (32%) experienced some difficulties in the weeks following the handover, and one surrogate mother experienced moderate difficulties. The remainder reported no difficulties. Five women (15%) reported some difficulties a few months after the handover, and the remaining 29 (85%) reported no difficulties. The number reporting some difficulties had decreased to only two (6%) at one year on, with 32 (94%) reporting no difficulties. The comparison between known and unknown surrogate mothers showed that a significantly higher proportion of known surrogate mothers reported some difficulties at 1 year after the birth ($\chi^2 = 8.19$, $P < 0.01$). The difference in the proportion of known and unknown surrogate mothers who reported some difficulties was 0.40, representing a small to medium effect size (Rosenthal and Rubin, 1982).

Table V. Frequency of contact with the couple and the child following the birth

Situation	Mother <i>n</i> (%)	Father <i>n</i> (%)	Child <i>n</i> (%)
Frequency of contact			
Not at all	7 (21)	7 (21)	8 (24)
At least once a month	11 (32)	9 (26)	11 (32)
Once a month to once in the last year	16 (47)	18 (53)	15 (44)
			<i>n</i> (%)
Relationship with child: known surrogate			
Special role			3 (43)
No difference in relationship			4 (57)
Relationship with child: unknown surrogate			
Special role			5 (15)
Contact with child			14 (52)
Contact with parents only			4 (15)
No contact with family			5 (18)
Feelings towards the child	Known surrogate mother <i>n</i> (%)	Unknown surrogate mother <i>n</i> (%)	
Special bond	6 (86)	8 (30)	Fisher's Exact, <i>P</i> = 0.012
No special bond	1 (14)	19 (60)	
Like own child	0 (0)	0 (0)	
Telling child	Genetic surrogate mothers <i>n</i> (%)	Non-genetic surrogate mothers <i>n</i> (%)	χ^2 4.05
Should be told	17 (90)	9 (60)	<i>P</i> <0.05
Uncertain/uninvolved	2 (10)	6 (40)	
Should not be told	0 (0)	0 (0)	

Before the child was born, three (9%) women had experienced psychological problems, with two (6%) having visited a general practitioner for psychological problems and one woman having had regular contact with an outpatient clinic. Since the child was born, three women (9%) had visited a general practitioner for psychological problems and one woman (the same woman as previously) made regular visits to a clinic regarding such problems.

The mean (\pm SD) score Edinburgh Depression Scale score for the 33 women who completed the questionnaire was 4.88 ± 3.1 . The mean score for women who had undergone a full surrogacy arrangement was 4.37 ± 2.9 , and that for women who had undergone a partial surrogacy arrangement was 5.57 ± 3.34 . A *t*-test revealed no significant difference between these two means. None of the surrogate mothers obtained a score above cut-off indicative of clinical depression (Cox *et al.*, 1987).

Frequency of contact with the couple and the child following the birth

Frequency of contact

The frequency of contact between the surrogate mothers and the commissioning couple and child varied greatly following the birth of the child (Table V). Eleven women (32%) had seen the mother at least once a month, and nine (26%) had seen the father at least once a month. Seven surrogate mothers (21%) had not seen the mother or the father at all. The remainder had seen the commissioning mother and father between once and once a month during the past year.

The frequency of contact with the child showed a similar pattern, with 11 (32%) of the surrogate mothers having regular

contact of at least once a month with the child. Eight surrogate mothers (24%) had not seen the child at all since the birth, while the remaining 15 (44%) had seen the child between once and once a month in the past year.

Relationship with child

As also shown in Table V, of the seven known surrogate mothers, three (43%) expected to play a 'special role' in the child's life and four (57%) expected not to differ in their relationship with the child than had they not been the surrogate mother. Of the unknown surrogate mothers, 14 (52%) reported that they expected to have contact with the child, and four (15%) reported that they would play a 'special role' in the child's life. Four (15%) said that they would maintain contact with the parents but not with the child, and five (18%) unknown surrogate mothers said that they would have no involvement with the family.

Thirty-two (94%) surrogate mothers were happy with the level of contact with the child, but two women (6%) reported that the level of contact with the child was insufficient. In terms of how the surrogate mother felt towards the child currently, 14 (41%) reported feeling a 'special bond' towards the child, and 20 (59%) felt that there was no such 'special bond'. None of the women reported feeling that the child was like their own. Comparing 'known' to 'unknown' surrogate mothers, the former were significantly more likely to feel a special bond towards the child (Fisher's Exact test, *P* = 0.012). Six (86%) known surrogate mothers felt a special bond, in comparison with eight (30%) unknown surrogate mothers. The difference in the proportion of known and unknown surrogate mothers who felt a special bond was 0.56, representing a medium effect size (Rosenthal and Rubin, 1982).

Table VI. Openness about surrogacy

Attitude	Family		Friends		Partner			Child		
	First told <i>n</i> (%)	Currently <i>n</i> (%)	First told <i>n</i> (%)	Currently <i>n</i> (%)	First told <i>n</i> (%)	At pregnancy <i>n</i> (%)	Currently <i>n</i> (%)	At pregnancy <i>n</i> (%)	At handover <i>n</i> (%)	Currently <i>n</i> (%)
Positive	16 (48)	25 (76)	25 (74)	30 (88)	12 (57)	19 (83)	22 (96)	26 (81)	28 (88)	28 (88)
Neutral/ Ambivalent	15 (46)	7 (21)	8 (24)	4 (12)	5 (24)	3 (13)	1 (4)	5 (16)	3 (9)	4 (12)
Negative	2 (6)	1 (3)	1 (3)	0 (0)	4 (19)	1 (4)	0 (0)	0 (0)	0 (0)	0 (0)

With regards to whether or not the child should be told about his or her origins, 26 surrogate mothers (77%) felt that the child should be told, while the remaining eight (23%) felt either uncertain or that the decision was not theirs to make. None of the surrogate mothers said that the child should not be told about the surrogacy. When comparing women who had undergone a partial surrogacy arrangement with those who had undergone a full surrogacy arrangement, it was found that 17 (90%) genetic surrogate mothers felt that the child should be told about the surrogacy arrangement compared with nine (60%) non-genetic surrogate mothers ($\chi^2 = 4.05$, $P < 0.05$). The difference in the proportion of genetic and non-genetic surrogate mothers who felt that the child should be told about the surrogacy arrangement was 0.30, representing a small effect size (Rosenthal and Rubin, 1982).

Openness about surrogacy

Openness with family

As shown in Table VI, one surrogate mother did not have contact with her family and was therefore not included in this section of the results. The large majority ($n = 32$; 97%) had discussed the arrangement with their family to some extent, with only one surrogate mother stating that she had not discussed the issue in this way. Two of the women reported that their family responded negatively when initially told, 15 (46%) said that their family had a neutral or mixed reactions when first told, and the remaining 16 (48%) said that their family had responded positively. The reaction of the family by the time of interview had become more positive. Twenty-five (76%) women reported that their families felt positive about the arrangement at 1 year after the birth, while seven (21%) had family members who felt neutral or had mixed feelings. Only one woman (3%) reported that her family still felt negative.

Openness with friends

The reactions of friends showed a similar pattern. When initially told, the majority of friends ($n = 25$; 74%) responded positively, eight (24%) responded neutrally or had mixed responses, and only one friend responded negatively. By the time of interview, these values had changed to 30 friends (88%) displaying a positive reaction, and four (12%) a neutral or mixed response.

Openness with partner

Of the 23 women who had a co-habiting partner at the time of interview, two had met their partner during the pregnancy. For the 21 women who had a partner at the time of deciding to

embark on surrogacy, 20 (95%) had discussed the arrangement in full with their partners, and one woman (5%) had discussed the arrangement to some extent with her partner. Twelve partners (57%) responded positively when initially told, five (24%) were neutral/ambivalent when first told, and four (19%) responded negatively.

For the remaining variables, data are reported from the 23 women who had a co-habiting partner. Nineteen (83%) reported that their partner felt positive about the surrogacy arrangement during pregnancy, three (13%) were neutral/ambivalent, and one partner (4%) felt negative. One year on, 22 women (96%) reported that their partner felt positive towards the surrogacy arrangement, and only one woman (4%) reported that her partner felt neutral/ambivalent.

With regards to the level of support the women received from their partner, the majority ($n = 20$; 87%) reported that their partner was very supportive and reliable during the surrogacy arrangement, and three (13%) stated that their partner was mostly supportive.

The GRIMS questionnaire yielded a mean score of 23.2. The raw scores were converted to transformed GRIMS scores, which range from 1 to 9, with higher scores indicating a poorer relationship. The mean score for the 23 women gave a transformed score of 3, which corresponds to a good, above-average relationship. Looking at the transformed scores individually, four women obtained a score of 6 (representing a poor relationship), and one woman a score of 9 (indicating very severe problems). The scores of the remaining 18 women reflected average or above-average marital satisfaction.

Openness with own children

At the time of interview, all of the 32 surrogate mothers who had children had discussed the arrangement with them to some extent, and the majority ($n = 29$; 90%) had explained the arrangement fully. One surrogate mother had not told her child during the pregnancy as the child was too young; however, she had since discussed the issue with him. Twenty-six (81%) women reported that their children felt positive towards the surrogacy arrangement during the pregnancy, and five (16%) reported that their children's reaction was either neutral or ambivalent.

Twenty-eight surrogate mothers (88%) reported that their child reacted positively at the time of handover, and three (9%) said that their child's reaction was either neutral or ambivalent. None of the children showed a negative response. Twenty-eight surrogate mothers (88%) reported that their children felt positive about the surrogacy arrangement at the time of

interview, and four (12%) described their children's reaction as either neutral or ambivalent.

Discussion

The findings of the present investigation suggest that surrogacy has generally been a positive experience for those surrogate mothers interviewed, and fail to lend support to claims regarding the potentially negative outcomes of surrogacy for surrogate mothers. For example, none of the women in the present study had any doubts about their decision to hand over the child to the commissioning couple. In line with previous findings (Ragoné, 1994) which showed that surrogate mothers tended to distance themselves from the fetus, the results of the present study indicated that surrogate mothers may view the child they are carrying as not theirs, thereby facilitating relinquishment.

Furthermore, the majority of surrogate mothers did not experience major problems in their relationship with the commissioning couple during the surrogacy process. Only one woman reported major conflict early in pregnancy, and this seemed to have been resolved before the birth of the child. Indeed, she reported having a positive relationship with the commissioning mother at the time of the interview. Interestingly, no differences were observed between the known and unknown surrogate mothers with regard to the quality of the relationship with the commissioning couple. In fact, many surrogate mothers who were previously unknown to the commissioning couple maintained contact with the family after the child's birth. Although the sample of known surrogate mothers was small, these results appear to suggest that unknown surrogate mothers are just as likely as known surrogate mothers to maintain a good relationship with the commissioning couple, thus dispelling fears that such an alliance between strangers will inevitably lead to problems.

A further source of unease in relation to surrogacy is the possibility of adverse psychological consequences for the surrogate mother. Although the study showed that surrogate mothers did experience some problems immediately after the handover, these were not severe, tended to be short-lived, and to dissipate with time. One year on, only two women—both of whom were known surrogate mothers—reported feeling occasionally upset. Furthermore, the Edinburgh Depression Scale showed that none of the surrogate mothers was suffering from post-natal depression at 1 year following the birth. Thus, there was no evidence of difficulties with respect to those aspects of surrogacy that have been the greatest cause for concern.

Although the present study was based on data obtained from surrogate mothers, for 19 of the women information was also available from the commissioning couple, as they had taken part in a separate longitudinal study of surrogacy (MacCallum *et al.*, 2003; Golombok *et al.*, submitted). Thus, data from the commissioning couple could be examined to validate the surrogate mothers' reports. The surrogate mothers whose commissioning couple also took part in the research all reported a positive relationship with the commissioning mother at the beginning and at the end of the pregnancy. The commissioning mothers also all reported a positive relationship

at these two time points. With regard to the relationship with the commissioning father, one of the 19 surrogate mothers reported problems. Although the respective commissioning mother did not report problems between her partner and the surrogate mother at the beginning of the pregnancy, she too reported some tension in the relationship at the end of the pregnancy.

Although it may be assumed that genetic surrogate mothers would be more likely to feel a special bond towards the child, this was not found to be the case. Genetically related surrogate mothers were, however, more likely than genetically unrelated surrogate mothers to wish the child to be told about the surrogacy arrangement. It remains to be seen how relationships will develop between the surrogate mother and the family as the child grows older, as not only will many of the children have knowledge of who their genetic or gestational birth mother is, but in many cases they will also have regular contact with her. Surrogate mothers were generally open with family and friends about the surrogacy arrangement. Although some family members and friends were negative at first, they later accepted the idea, often feeling proud of the surrogate mother. The majority of surrogate mothers reported that their partner was supportive, and that their own children reacted positively, with none of the children experiencing major problems as a result of the surrogacy arrangement.

The present investigation was based on surrogate mothers' perceptions of the surrogacy arrangement. As with any research on a controversial topic, it is not possible to rule out the risk of socially desirable responding. It is also conceivable that the aspects of the interview which relied on retrospective reporting were subject to recall bias. However, it is noteworthy that the accounts of the surrogate mothers regarding the quality of the relationship with the commissioning couple were almost identical to those of the commissioning couples themselves, suggesting that the surrogate mothers' accounts of their experiences were generally reliable. An advantage of the present investigation is that data were collected from the largest and most representative sample of surrogate mothers so far. By recruiting surrogate mothers through the surrogacy agency COTS, as well as through a parallel study of surrogacy families recruited largely through the Office of National Statistics (Office of National Statistics, 1991), the large majority of surrogate mothers in the United Kingdom whose babies were 1 year old at the time of the study were invited to participate in the research. The overall cooperation rate of over 70% thus produced a representative sample of surrogate mothers, although the possibility cannot be ruled out that those who declined to take part were experiencing greater problems than were the participants. Moreover, all of the surrogate mothers had actually given birth to children in the context of a surrogacy arrangement, whereas previous investigations have included surrogate mothers at various stages of the surrogacy process.

Overall, surrogacy appears to be a positive experience for surrogate mothers. Women who decide to embark upon surrogacy often have completed a family of their own and feel they wish to help a couple who would not otherwise be able to become parents. The present study lends little support to the commonly held expectation that surrogate mothers will experience psychological problems following the birth of the

child. Instead, surrogate mothers often reported a feeling of self-worth. In addition, surrogate mothers generally reported positive experiences with the commissioning couple, and many maintained contact with them and the child. It cannot be assumed that the generally positive views of these surrogate mothers will be maintained over time. However, the findings provide systematic information about the feelings and experiences of surrogate mothers 1 year after the birth of their most recent surrogacy child.

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