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Accommodating a Twin Pregnancy: Maternal Processes

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Abstract. The object of this study was to develop a theory of the relationship between a mother and her unborn twins using a qualitative grounded theory methodology. Ten women participated in interviews during the last trimester of a twin pregnancy and again during the early postpartum period. Data provided by these women was analysed using the constant comparative method. Two additional informants were sampled in order to formulate and verify the tentative theory. For women in this study, the findings indicate that mothers form a relationship with their unborn twins within the wider context of accommodating the twin pregnancy in their lives. A woman accomplishes this process by immediately seeking information about twin pregnancy, by making room, in all senses, for two babies instead of one in her life, and by appraising her own pregnancy risk. A mother engages in self-protective behaviors and in behaviors designed to protect the health of her unborn twins as a method of coping with the perceived risk of the twin pregnancy and with the twin pregnancy itself. As the twin pregnancy progresses, women move toward accepting the idea of being pregnant with twins. For women pregnant with twins, the birth of two infants confirms the reality of the pregnancy.

Key words: Twins, Pregnancy, Maternal processes, Maternal-fetal relationship

INTRODUCTION

Associated with changing age-patterns of childbearing and advancing reproductive technologies, the incidence of multiple birth in Canada, especially that of twins, has increased steadily since the early 1980s [23]. Mothers experiencing a twin gestation undergo numerous prenatal assessments and are often hospitalized during pregnancy. Health professionals are in a unique position to provide education and support to these women. To accomplish this, however, they require an understanding of the distinctive experience of a mother relating to two unborn children. To date, much of the theoretical and research literature related to pregnancy has focused upon a woman's experience of being

pregnant with a single infant. The process of attaching to her infant in both the pre-and post-birth periods is one developmental task believed to be central to a woman's pregnancy experience [6, 15, 33], and one which will have an impact upon a woman's post-partum adjustment and her later involvement with her infant [41, 43]. Although writers suggest that mothers encountering a twin pregnancy experience a distinctly different attachment process than do mothers pregnant with a single child [11, 16], no theoretical or research literature has been found addressing the similarity or differences in developmental tasks for such women.

Three research studies were conducted from the perspective of the mothers themselves, which describe a mother's relationship with her unborn infant. The findings from the first, a qualitative study of 30 primigravidas, indicated that by mid-pregnancy these mothers had, and could realistically describe, an image of the fetus [19, 20]. The findings from the second, a qualitative study of 24 low-risk expectant couples, indicated that both prospective mothers and fathers sensed the unborn infant as a unique person [37, 38]. The findings of the third, a longitudinal study of five women with varying high risk conditions, resulted in the identification of a process wherein a mother's self-protection affected her developing relationship with the fetus [22]. Only in this last study did the researcher include in the sample one mother expecting twins. The findings, however, did not differentiate between this mother's experience and the experience of the other high-risk mothers who were expecting a single child.

Although attaching to an infant has been identified as a multidimensional process occurring throughout pregnancy [2, 33, 41, 43], quantitative measurements of attachment at a single point in time have frequently been used as an indication of the prebirth mother-infant relationship. Conflicting and inconclusive results about the nature of pre-birth attachment, possibly due to the inadequacy of a single measurement to capture the essence of a process at any moment are reported by Muller [27]. Of the many variables investigated, only two – quickening and gestational age – have had consistently positive correlations with prenatal attachment measures across several studies [10, 13, 17, 31]. None of the samples in these studies included mothers experiencing a twin pregnancy. A longitudinal case study of one multigravida investigated the work involved in becoming a mother of twins [8]. One task attempted by this mother was the identification of each of the twin babies both before and after birth. The researcher discussed the imaginative strategies used by the mother to identify specific characteristics of each baby before birth, lending credence to the view of another author that an awareness of and attachment to twin infants begins in the prebirth period [11].

In response to the lack of information in the literature relating to the mother-twin relationship in the antenatal period, the purpose of the present study was to develop a tentative theory of the relationship between a mother and her unborn twins. To guide research, answers to the following questions were sought:

1. How does a pregnant woman describe her experience in developing a relationship with her unborn twins?
2. How does the presence of twin fetuses influence the developing prebirth relationship? Particularly:
 - a) How does the pregnant woman acknowledge the presence of twins as part of her pregnancy experience?

- b) Does the pregnant woman have a relationship with her unborn twins individually or as a unit?
- 3) Does a mother experiencing a twin pregnancy perceive herself to be high-risk?

A high-risk pregnancy was defined as one which involves an above-average risk of death or disability to the mother, or fetus, or both, when compared to a pregnancy without complications.

METHOD

In this study a qualitative methodology was used, specifically a grounded theory approach [9, 39]. The method of data-gathering was in-depth face-to-face interviews with informants. There were ten primary and two secondary informants. Women pregnant with twins volunteered to be in the study and then purposive sampling techniques were employed to ensure that subjects met the inclusion criteria. Informants were obtained from information letters made available at physicians' offices and at meetings of the local multiple birth organization. Potential informants had to be women pregnant with live twins of 28 weeks or greater gestational age, who could speak and read English, and who were willing to describe their pregnancy experience.

The two secondary informants, obtained through community contacts, had no previous knowledge of the study and were selected by the researcher because they had experienced a twin pregnancy and delivered live twins. They served to validate the researcher's interpretation of the data obtained from primary informants. Secondary informants provided the researcher with new information, or information which was not gleaned from the original interviews. Two of the primary informants who had previously expressed their feelings in a clear, articulate manner and who were willing to continue participating in the study also verified the emerging theory.

Data collection

Each of the primary informants was interviewed twice. The first interview occurred during the last trimester of pregnancy (at 32-39 weeks gestation) when the pregnancy was deemed viable and the threat of extreme prematurity had passed. The second interview was held during the postpartum period (5-8 weeks after the babies' births), allowing the researcher to collect data which reflected the development of the mother-twin relationship between the time of the first interview and the time of delivery. All of the interviews were held at a time and in a location convenient for the informants. All of the antepartum interviews were conducted one-to-one and were attended by the researcher and the informant only. Eight of the postpartum interviews were conducted with one or both twins present in the home. At three of these postpartum interviews, the twins were present in the room.

Initially unstructured face-to-face interviews were used to collect data, with the opening question put to informants being: "Tell me about your pregnancy". The interviews were tape-recorded and then transcribed verbatim. Fieldnotes containing notes on

the appearance and non-verbal behaviors of the informant and of the interview process itself were recorded immediately after each interview. Data analysis began following the first interview. A line-by-line analysis of the transcript was undertaken and codes were assigned to each emerging theme. Themes were compared within each interview and across interviews. As the interviews progressed, the information obtained from one informant began to direct the interview of the next informant. Observations from the fieldnotes were also recorded on the transcript to assist with the verification of emerging themes. When the data collection from primary informants was complete, units of data reflecting common themes were grouped into categories. A core category, *accommodating*, was identified and its relationship to other categories was represented in a model. Finally, a second literature review was completed after identification of the process, core category and sub-categories. The knowledge obtained from the literature review and the process identified in the data resulted in the development of a tentative theory identifying and describing maternal processes from the diagnosis of twin pregnancy until birth. The informants were interviewed on more than one occasion and over an extended time period. Data coding was checked at various times during the research process. The validity of our hypothesis was increased by its verification by some primary informants. The two secondary informants were presented with the major findings and asked if their experience was similar. All of the informants stated that these findings confirmed their experience of twin pregnancy.

Ethical considerations

Informants contacted the researcher of their own will, the purpose and methods of the study were explained to them beforehand, and their written consent was obtained at the first meeting. At each stage of the study, participants were apprised of their right to withdraw, and to disclose only that information which they chose. Informants' anonymity was preserved by the assignation to each of a number and pseudonym in the reporting of data.

RESULTS

In terms of age, income and parity, the primary informants formed a diverse population sample. However, they tended to come from the lower-to upper-middle classes. They were homogeneous in terms of ethnic background, as all of the informants were caucasian. The informants discovered they were carrying twins at differing stages of the pregnancy. The earliest twin diagnosis was made at 5 weeks gestation and one informant received her twin diagnosis as late as 28 weeks gestation. All of the informants delivered healthy infants at gestational ages ranging from 36 to 40 weeks. Eight informants delivered their twins vaginally. One informant underwent a caesarean delivery, and one informant delivered the first twin vaginally and the second twin by caesarean section. Table 1 shows the age, marital status, occupation, education, income and obstetrical history of primary informants in the sample.

Table 1 - Age, marital status, occupation, education, income and obstetrical history of primary informants in the sample

Age	range	24-36 years
	mean	28.8 years
Marital status	married	9
	stable relationship	1
Occupation	9 worked outside of home at onset of pregnancy all had ceased occupations at time of first interview	
Education	high school	10
	college/technical school	5
	some university	2
	university degree	1
Income	\$C20,000 - 29,999	2
	\$C30,000 - 39,999	2
	\$C40,000 - 49,999	1
	over \$C50,000	5
Parity	first pregnancy	3
	second pregnancy	3
	third pregnancy	1
	fourth pregnancy	3
Previous miscarriages	3	
Fertility problems	2	
Planned pregnancy	9	
Gender of twins	5 aware	
	5 unaware	
Deliveries	8 vaginal	
	1 cesarian section	
	1 vaginal and cesarian section	

Note: First twin pregnancy for all informants.

The twin pregnancy experience

Once analysis of the data began, it became apparent that the initial purpose of this research would fail to describe the entire process of women's experience of their twin pregnancy. Women did discuss their relationship with their unborn twins but their experience of relating occurred within the larger context of adjusting their lives to fit a twin pregnancy. The process by which mothers incorporate a twin pregnancy diagnosis into their lives was described by the term *accommodating*. Figure 1 illustrates the antecedent conditions or events that led to the occurrence of the process of accommodating, the strategies the informants employed in response to the twin diagnosis, and the consequences or outcomes of these strategies.

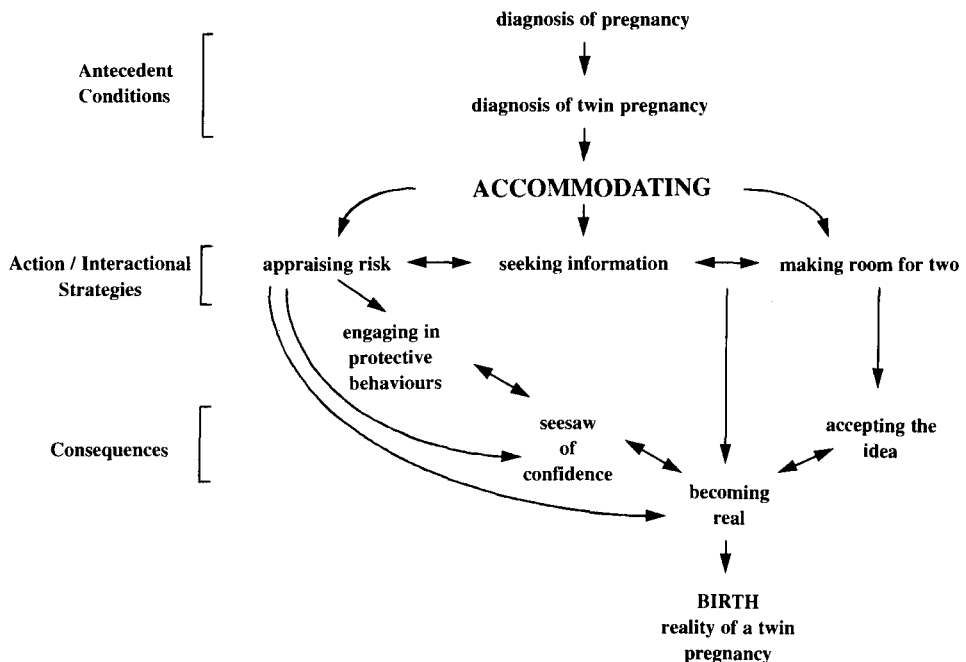


Fig. 1. The process of accommodating a twin pregnancy.

Antecedent conditions to accommodating

All of the informants were diagnosed as pregnant before being diagnosed with twins. Five of the ten primary informants suspected they carried twins prior to the twin diagnosis. Of these, four were multiparous and one was nulliparous. The suspected a twin pregnancy for reasons such as an increase in size, early sensations of fetal activity, the reactions of the technician during an ultrasound scan, dreams, and feelings that they 'just knew'. Suspicion that theirs was not a singleton pregnancy led women to react in different ways. Three women told others they were expecting twins before confirmation of the diagnosis. One informant discussed sensations of fetal activity with friends in an attempt at self-diagnosis. Two women approached their physician requesting an ultrasound examination. One informant approached more than one physician requesting an ultrasound scan. The diagnosis of twins resulted in intense emotion for informants. They described feelings of ambivalence, fear, anger, shock, surprise, and being "surprised but not surprised". For those women who suspected that they were pregnant with twins, surprise was expressed but the diagnosis also confirmed their suspicions that the pregnancy was not progressing as they felt it should.

The process of accommodating a twin pregnancy

Women used four strategies to manage their twin pregnancy diagnosis: seeking information; making room for two; appraising risk, and engaging in protective behaviors (see Figure 1).

Seeking information

Immediately after receiving the twin pregnancy diagnosis, informants consulted books. They hoped that the information they obtained would help them recognize the differences between a twin and a single pregnancy, assist them to determine whether their pregnancy was progressing as it should, assess their pregnancy risk, and help them to plan for the future. At various times throughout their pregnancy, the women also sought information from their physicians. All of the informants indicated that the information they were able to obtain was insufficient.

Making room for two

The second strategy women used to accommodate the twin pregnancy in their lives was making room for two. Informants changed plans they had already made and began thinking of a future with two infants rather than one. As one woman, Janine, described it:

You have to change the whole plan, because when you're working at having a baby, you plan and you anticipate and you think of what the future will be like and you envisage yourself with three children and you plan that and you decide all right, this is how it's going to work, this way and that way and then all of a sudden you find out there's two, and those plans no longer fit. They have to be changed and you have to change, but that takes time.

Informants expressed doubt regarding their ability to cope with two babies, yet never would have doubted their ability to cope with one. They expressed feelings of fear, worry and uncertainty about mothering two infants and envisaged the enforced isolation that having two infants would bring. Informants began physically preparing for the arrival of two infants, including rearranging their homes and finances to accommodate the additional baby. These activities provided tangible evidence that the pregnancy would result in the birth of two babies. When making room for two, informants began to relate to their unborn twins, using several strategies. Some of the informants used more than one strategy. Each strategy was meaningful for the women in terms of identifying one infant or some characteristic of that infant. These strategies allowed informants to gauge the progress of the pregnancy and to continually affirm the presence of two unborn infants in utero. Figure 2 outlines the relating strategies used by women in this study.

Relating through fetal activity was a critical strategy for informants. The women could both sense and elicit fetal activity, and therefore felt it was the only reciprocal method of relating to their unborn twins. Edith describes how fetal activity was used as an indicator of fetal wellbeing:

The fear, because if it doesn't move for awhile, you're thinking whoa what's wrong? Should I run to the doctor? So you pat your stomach... and then it starts moving, OK there's no fear... Movement means everything is OK.

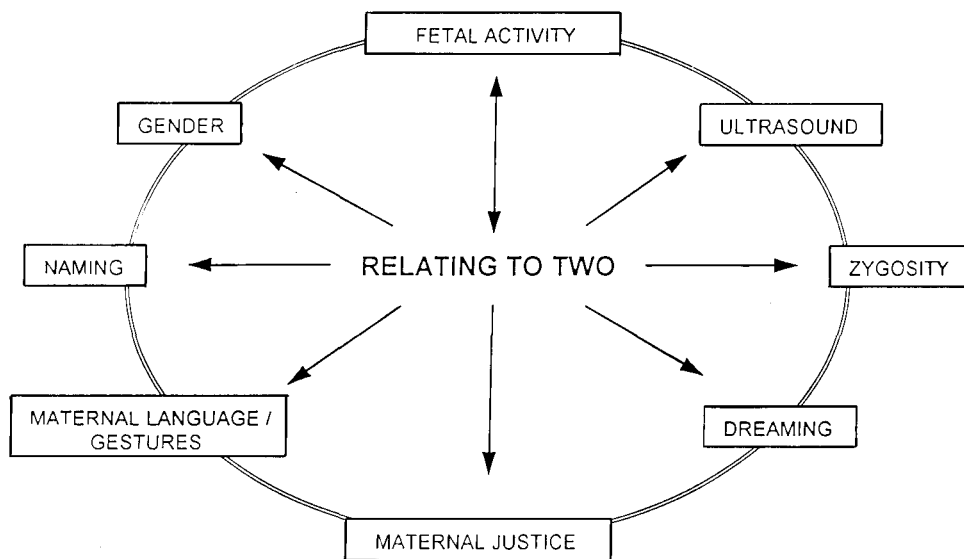


Fig. 2. Relating to two: maternal strategies.

Several informants tried to elicit movement if the twins were quiet in utero to ensure that they were healthy. Informants compared fetal activity levels in order to distinguish the infants, describing them as “more active” and “less active”. Janine reported that she related to a greater degree to the more active twin, “...because he was so much more physically there”. The women also attributed personality and gender to their unborn twins, and fantasized about the twins’ actions in utero, based on their perceptions of fetal activity levels.

Ultrasound examination was used by informants as another indicator of fetal wellbeing. With ultrasound, women could “see” two babies and the pregnancy began to become more real. However, Edith stated that she felt threatened by these examinations in case they brought her unwelcome news about the babies. Five of the women were aware of the gender of their unborn twins at the time of the first interview. With knowledge of fetal gender, informants could relate to the unborn twins as individuals. This knowledge restored order to multiparous informants’ lives by allowing them to plan for the specific sex of each infant, and also assisted them to prepare their existing children for the forthcoming birth. After discovering the gender of the expected infants, women named their babies. Naming also helped informants to relate to their twins as individuals and, with the assistance of ultrasound examinations, to further personalize each twin by differentiating between their size and between activity levels.

Informants who had knowledge of their twins’ zygosity (whether they were identical or fraternal) also related to them on this basis. If expecting identical twins, women tended to think of the babies as a pair with similar characteristics. If expecting fraternal twins, they were visualized as separate individuals with differing characteristics but still as a pair of babies. Women in this study also related to their unborn twins via their

dreams. These focused on the physical characteristics of the expected infants, delivery of the twins and caregiving after delivery. Language, such as calling the babies by name, was another means used by informants to relate to their unborn twins. Physical gestures, for example rubbing and poking the abdomen, were used by women to attain and maintain contact with their expected twins through the uterine wall.

Maternal justice, a fairness when relating, was exhibited by most women in both the antepartum and the postpartum periods. Antepartum, women were concerned about being fair and equal when relating to each twin. Postpartum, mothers exhibited a concern about maintaining an equal and fair relationship with their twins on an individual basis and with their twins as a unit in comparison to their other children. As gestational age progressed, participants in this study began to focus their thoughts on the pain of the labour and delivery experience and their fear of coping with and caring for two babies.

Appraising risk

Appraising risk is the third strategy women used to accommodate a twin pregnancy in their lives. While acknowledging their physician's designation of their pregnancy as high risk, informants did not necessarily view themselves as high risk. Rather, women appraised their own risk status on an ongoing basis. This was accomplished using a comparative process mentally balancing what they knew about pregnancy with what they knew about their own particular pregnancy. Informants used the information they had gathered from books and from visits to their physician to determine the expected course of events, that is, what should happen during their pregnancy. Informants compared this with what they determined was actually happening during their pregnancy. If they perceived that their pregnancy was progressing as it should, informants did not feel they fitted into the category of high risk. Marie's words illustrate the comparative process:

If someone is having problems in the pregnancy, which I'm most definitely not, other than feeling overweight and overburdened walking around, (they) and their babies aren't doing well and I don't feel that way.

If women felt their pregnancy was progressing as it should, they continued with their current behaviours, such as eating nutritiously, resting or taking vitamins, because they perceived these behaviors as maintaining the right course of the pregnancy. If informants experienced difficulties with the pregnancy, they perceived there was greater associated risk and altered some of their behaviour. For example, after an episode of bleeding, Judy avoided physical activity, such as lifting other children, gardening and housework, believing that the avoidance of these activities would protect her pregnancy from further complications.

Engaging in protective behaviors

Informants engaged in physical and emotional protective behaviour as a method of coping with the perceived risk of pregnancy and with the pregnancy itself. They physically protected the twins in utero by monitoring their diet or activity, as Judy did. In addition, they protected themselves emotionally from a perceived increased risk of loss by avoiding thinking of the future, occupying themselves with tasks, and ensuring that the pregnancy was not the focal point of their lives. Physical protection of the unborn twins continued throughout the pregnancy. Self protective behaviours decreased as women perceived their risk to be decreasing.

Consequences of accommodating

Three consequences of these accommodating strategies emerged: accepting the idea of a twin pregnancy; experiencing a seesaw of confidence, and moving towards the reality of the twin gestation. Two strategies, seeking information and making room for two, assisted informants to accept the idea of being pregnant with twins. Visualizing their future with two babies, beginning to relate to two unborn infants and physically preparing their homes for the twins' birth allowed informants to more clearly acknowledge that the pregnancy would result in the birth of twins. Time was a factor in acceptance and realization of the twin pregnancy. Many informants were grateful for their early diagnosis. Other factors which assisted women in accepting were ultrasound scans, discussion of the pregnancy with others, positive thinking, and reading about twins. Janine's words clearly illustrate the factors involved in her acceptance of being a mother-to-be of twins:

If you can imagine this family picture of two adults, two kids, those are clear all right. At 16 weeks, there would have been two other individuals put there but they would have been barely visible, and every time, every ultrasound, every doctor's appointment, every time we heard heartbeats, those two little pictures got a little bit more visible, but they still weren't really part of the whole picture. When they were born then they were as clear as all the rest... But all of that was necessary for me to say that this is happening. Like I really am pregnant with twins....

Women's confidence levels in their pregnancy fluctuated with their perception of their pregnancy risk. They watched the calendar closely, and perceived that their pregnancy risk decreased as gestational age increased. Confidence in the pregnancy increased with positive feedback from their ultrasound examinations, with each successive visit to their physician, with their own positive self-assessments about their pregnancy, and with the passage of time. The strategies of making room for two and seeking information allowed informants to focus on their own physical symptoms and also on relating to the unborn twins. In this way, the twin pregnancy became more real to them. The remaining two strategies, appraising risk and engaging in protective behaviors, moved informants away from the reality of the twin pregnancy *if* the informant perceived her risk to be higher, and, in response, engaged in self-protective behaviors.

Movement towards the reality of the twin pregnancy continued until delivery, as Arden's words illustrate:

If you say it enough you believe it, but you really don't believe it fully until they are born. Like I knew I was having twins. I knew there were two in there, but still until after they were born I think it really took that much for me to totally believe that there were two babies, two little human beings.

For Arden, as for the other women participating in this study, the birth of two infants made her twins real.

DISCUSSION

Self-diagnosis of twin pregnancy causing women to seek confirmation of their suspicions from medical professionals has been reported [21]. Of the 336 nulliparous and multiparous mothers surveyed by these researchers, 71.1% indicated their suspicion of

twin pregnancy before medical confirmation. In those mothers surveyed, reasons for seeking medical confirmation included an increase in size and/or weight gain, an increase in fetal movement, dreams and separate fetal movement. All of these reasons, except the last, were given by five women in this study as reasons for suspecting a twin pregnancy. The emotions of shock, fear, anger, and ambivalence, described by informants when they received their twin diagnosis are similar to those of women diagnosed as pregnant with a single child. One author believes that a woman experiences an element of surprise when discovering a pregnancy, even though the pregnancy may be desired and planned [32]. These feelings of surprise produce mixed reactions of pleasure and displeasure in the pregnant woman which disappear at the time of quickening. Similarly, surprise, ambivalence and intensification of maternal emotion are described by other writers when discussing a women's early pregnancy experience. [2,3,4,14,15, 30,41,42,43].

Informants in this study, however, had received a pregnancy diagnosis prior to receiving a diagnosis of twin pregnancy. Before reacting to their twin pregnancy diagnosis, informants had already reacted to their diagnosis of pregnancy. There may be an additive emotional quality in these two incidences that those pregnant with twins would experience. In addition, there may be qualitative differences in a woman's reaction to the diagnosis of twins because of other concerns, such as support systems, and parity or financial considerations. Several of these factors were of concern to informants in this study when they received their twin diagnosis and have also been previously noted as areas of concern to prospective mothers of twins. [40]. Women in this study experienced an intense desire for information about the twin pregnancy experience, similar to that expressed by women expecting a single infant. The author cited above considers information-seeking to be means of ensuring safe passage for mother and infant [35]. Women conduct an intense, personal and extensive literature review related to childbirth in order to take preventative or avoidance measures to ensure that their infant passes through the pregnancy safely. Although women in this study desired information on their pregnancy and actively sought this from bookstores, libraries, and physicians, they were disappointed, as most of the information they were able to find related to the experience of being pregnant with a single infant.

After receiving a pregnancy diagnosis, a woman focuses on both the psychological aspects of her condition such as her emotional state, and on the physiological signs and symptoms accompanying pregnancy [4,29,30,33,35]. Upon receiving a twin diagnosis, informants experienced emotional disequilibrium. They were also keenly aware of their physiological status, describing in detail physical signs such as nausea or fatigue. One must question whether the diagnosis of twins in addition to the diagnosis of pregnancy had an additive effect on the emotional and/or physical experiences of women in this study. As pregnancy progresses, a mother expecting a single infant begins to focus to a greater degree on her infant and attempts to increase her awareness of and become acquainted with her unborn child, using such strategies as fantasy, identification and differentiation. [29,30]. The mother begins to bind-in to the expected child [33,34]. For women expecting a single infant, it is at the time of quickening that they realize that the unborn baby is truly a separate being from themselves. They become more attuned to the fetus than to the physical process of pregnancy itself, in a process described as differentiation [4,29,30] and binding-in [33,34].

Women expecting twins appear to have an additional task of differentiation. Rather than differentiating themselves from just one infant, they must attempt to sense the presence of and differentiate themselves from two unborn infants. To accomplish this, informants paid particular attention to fetal activity levels, attempting to distinguish one from the other, and becoming attuned to the separateness of each baby through the use of polarization. Polarization assisted women to differentiate the unborn twins and to attempt to get to know them as separate beings. Antenatally, one author in the late 1970s reported a similar mode of identification used by the single subject in her case study, one where similarities and differences between each twin's activity was noted [8]. In the postpartum period, the use of polarization has been described as a method of recognizing differences between twins which assists mothers in the task of individuation [1]. The results from this study suggest that the process of individuation for mothers expecting twins begins before birth. Using additional strategies such as naming, gender, dreams, determination of zygosity, language and/or physical gestures and ultrasound as bases for differentiation, informants became sensitive to each of their unborn twins and related to them as unique persons, findings similar to those reported a few years ago by the subjects of one study, who were pregnant with a single fetus [37].

In a postbirth study of twins, maternal justice, a need to give each twin fair and equal attention, was found to be a characteristic of their mothers [1]. Informants expecting twins showed maternal justice in both the pre- and post-birth periods. Antenatally, women were concerned about being fair to each unborn infant in their actions and words and so were conscious of speaking to each infant and of stroking each side of the abdomen. Postpartum, maternal justice was manifested in two distinct ways. First, informants were concerned about fairness in relating to each twin as an individual and attempted to ensure that equal time was spent with each baby. Second, mothers were concerned about relating to their twins as a unit versus their other children and thus they attempted to ensure that the twins and their other children were given equal portions of maternal time. As gestational age increased, informants began to think more about labour and delivery, and to reflect upon the future caretaking of twins than about the pregnancy itself. Their fears for the pregnancy diminished and they allowed themselves to reflect upon the approaching birth. These thoughts are consistent with those of mothers expecting a single child progressing through the maternal task of binding-in during the last trimester of pregnancy [34].

Women in this study appraised their own pregnancy risk. A similar process of assessing has been reported by one author in her study of chronically ill pregnant women [5]. The author notes that having adequate knowledge enables pregnant women to accurately assess their own risk. Therefore, the informants' search for specific information related to the twin pregnancy experience is an important aspect of self-appraisal of risk. Due to a lack of resources available to informants, many women used information about a singleton pregnancy as their yardstick, which may not have provided them with an accurate idea of the course of the pregnancy [36]. Informants altered their behaviors to maintain the course of the pregnancy. The process of seeking to do things right [22] has been noted previously in the literature by several writers [5,18,28]. This willingness on the part of informants to modify maternal behaviour is closely aligned to two of the maternal tasks of pregnancy, giving of oneself and ensuring safe passage [33].

Managing uncertainty, manifested as fear and worry over the outcome of the pregnancy, was an important task for women in this study. Although one author's theory of uncertainty has been conceptualized in relation to illness rather than pregnancy [24,25,26], the present study supports author's view that women experiencing a high-risk pregnancy may lack an internal trajectory of the process of childbearing from which to form perceptions and take action [39]. Uncertainty occurs when an individual cannot assign value to objects or events and cannot predict outcomes accurately [24]. A woman pregnant with twins can realistically assess the progress of a single pregnancy but may lack the ability to cognitively categorize a twin pregnancy because of a lack of availability of sufficient internal clues. Three themes relating to the anxieties experienced by mothers-to-be of twins have been identified across several qualitative studies [7]. These are vulnerability, an inner dialogue with uncertainty and a search for care. Each of these themes has been addressed by informants in the present study.

Self-protective behaviours similar to those reported by informants in this study have been reported by other researchers. Women have used protective governing as a strategy of coping when chronically ill [5], when infertile [12], and when experiencing a high risk pregnancy [22]. Accepting a pregnancy is normally considered to be a task of pregnant mothers that is resolved in the first phase of pregnancy [4,30,35]. The delaying of acceptance experienced by many women in this study may have been associated with two factors: first, having been confirmed pregnant, then having had to readjust to a twin diagnosis. Women had to change their view of their pregnancy and readjust many plans they had made for the future in order to incorporate two babies instead of one into their lives. Informants reported that this process required time, possibly more time than the incorporation of the expected single child. Second, when incorporating a pregnancy into their lives, women reflect upon the costs and benefits inherent in the pregnancy. The women in this study may not have had a clearly perceived satisfaction in the knowledge that they would be caring for two infants rather than one until later in their pregnancy [14].

Implications

As stated above, women in the study indicated a lack of literature and other sources of information which specifically discussed the experience of twin pregnancy. Resources made available at the time of the twin diagnosis would meet the newly diagnosed woman's immediate need for information, allow her to knowledgeably assess the progression of her pregnancy and perhaps assist her self-appraisal of her pregnancy risk. Separate prenatal programmes specifically for women expecting twins, would provide them with an opportunity to receive information and guidance on twin pregnancy from professionals. Because of the increase in numbers of women expecting and delivering twins, health professionals practising in hospital and community settings must become aware of the unique needs of these women. A professional can assist these prospective mothers by acknowledging the distinctive experience of twin compared to singleton pregnancies. A sensitivity to the pregnant woman's feelings and fears will assist her to cope with the changes in her expectations for her future. Health professionals who have a role in the provision of immediate feedback to pregnant women regarding tests which indicate fetal well-being, such as ultrasound scans, must be aware that all women may not find these examinations reassuring.

Labour and delivery may not be approached with excitement by women pregnant with twins, because they may be feeling ambivalent about their pregnancy and doubt their ability to cope with the delivery and subsequent mothering of two infants. An awareness that such feelings may exist, an acceptance of the individual woman's fears and an ability to reassure women that these feelings are normal on the part of professionals would assist the woman through her antenatal and intrapartum experience. Because full realization of the twin pregnancy may not occur until the time of birth or later, health-care professionals can assist the mother towards this realization by allowing her to see the twins together as soon as possible after birth. This will enable mothers to further differentiate the infants and therefore promote the postpartum task of individuation of twins [1]. Women who have delivered twins may require more assistance in the early postpartum period to overcome their uncertainty and doubt regarding their ability to mother two infants. Providing reassurance, encouragement and anticipatory guidance about feeding and physically caring for two infants, and suggesting time management and coping strategies for mother and family will assist women who have recently delivered twins to assume the responsibilities and caretaking of two infants.

Further study into the twin pregnancy experience, the variables which may affect twin pregnancy and the mother-unborn twin relationship would increase the existing body of knowledge about twin pregnancy and maternal-twin attachment.

CONCLUSIONS

The conclusions of this study take the form of the following hypothetical statements which identify areas arising from this study that could be investigated further using alternative research methods:

1. During a twin pregnancy, women differentiate themselves from two unborn infants.
2. Women pregnant with twins utilize fetal activity levels as a basis for differentiation.
3. Prebirth differentiation of twins is assisted through the use of polarization of fetal activity levels.
4. Women experiencing a twin pregnancy attempt to individualize their expected infants during the prebirth period. Individualization is assisted through knowledge of fetal gender, naming of the expected infants, and awareness of their zygosity (identical or fraternal).
5. Women are concerned with fairness and equalness in the attention given to their individual twins during both the prebirth and postbirth periods.
6. Women are concerned with fairness and equalness in attention given to their twins as a unit and to other children during the early postbirth period.
7. Women pregnant with twins progress through the recognized phases and maternal tasks of pregnancy. Although progression through the phases and tasks of pregnancy is determined by each woman's individual pregnancy situation, mastering maternal tasks during a twin pregnancy requires more work on the part of the pregnant woman, as she must complete the tasks in relation to a pregnancy with two unborn infants rather than one.

8. Women pregnant with twins appraise their own pregnancy risk status on an on-going basis.
9. Women experiencing a twin pregnancy use protective behaviors, designed to physically safeguard the unborn twins and allow women control over the uterine environment. Women physically protect their unborn twins throughout the pregnancy. If women perceive their pregnancy risk to be high, they utilize self-protective behaviors as a coping mechanism to safeguard their involvement in the pregnancy, should a loss occur.
10. As gestational age progresses, women move towards the realization that they are pregnant with two unborn infants. This realization is assisted by the preparations women make for the birth of two infants: relating to two unborn infants, physically preparing for the introduction of two infants into the home, and mentally preparing for the delivery of two infants.

It is hoped that this grounded theory conceptualizing a woman's experience of becoming a mother to twins will provide a trajectory of childbearing for women expecting twins and will provide the impetus for further research into the area of the mother-unborn twin relationship. The present findings can be used to assist health professionals in the provision of care to women who experience a twin pregnancy and their families.

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