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ORIGINAL ARTICLE

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- 1 Birth experience of fathers in the setting of teenage pregnancy: Are they prepared?

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Observational Study

Birth experience of fathers in the setting of teenage pregnancy: Are they prepared?

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Author contributions: Quinlivan JA and Petersen RW undertook concept and design, ethics approvals and established the study; Ngweso S undertook data acquisition and undertook the first draft of the manuscript; Quinlivan JA performed primary analysis; all authors interpreted the data and critically reviewed and subsequently approved the final manuscript for submission.

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Abstract

AIM

To explore the birth experiences of teenage fathers and determine the extent to which they are prepared for childbirth.

METHODS

A mixed methods observational study was undertaken comparing the birth experience of 50 fathers in the setting of teenage pregnancy (teenage) compared to a group of 50 older fathers. Fathers were recruited in the antenatal period and completed structured questionnaires following the birth of their child. Quantitative and qualitative analysis was undertaken.

RESULTS

Teenage fathers were younger, less educated and less likely to attend prenatal childbirth education classes ($P < 0.0001$). During birth, they were less prepared and consulted by attending staff (both $P < 0.05$). They reported limited roles in intrapartum decision-making ($< 20\%$). In multivariate analysis being a father in the setting of teenage pregnancy remained significantly associated with feeling unprepared for birth. The major themes in qualitative analysis were feeling unprepared,

shock, fear, a sense of detachment, happiness, pride, love of the baby and satisfaction with fertility.

CONCLUSION

Teenage fathers are less prepared for the birth of their child and this results in shock, fear and detachment that may impact on the early father-infant relationship.

Key words: Fathers; Preparation for childbirth; Teenage fathers; Teenage pregnancy; Childbirth education; Birth

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Core tip: Fathers play an important role in their children's lives. However, few fathers in the setting of teenage pregnancy are prepared for the birth of their baby. They are less likely to attend childbirth preparation classes. Childbirth attendants do not engage them in intrapartum decision-making. Engaging fathers in the setting of teenage pregnancy in childbirth education and birth might reduce adverse feelings of shock, fear and detachment that might otherwise harm the early father-child attachment relationship.

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INTRODUCTION

The birth of a child is a significant event in the human lifespan. This important milestone can have a profound impact upon the psychosocial functioning of the parents, the infant-parent relationship and the infants' development^[1,2]. The impact of a negative childbirth experience has been associated with less maternal affection towards the baby, difficulty in breastfeeding, difficulty in adjusting to the role of motherhood and fear of having another birth^[3]. Whilst difficult to objectify, determinants of childbirth satisfaction and the birth experience include expectations about birth, pain in labour, control of birth processes and levels of support from partners^[4].

The early involvement of fathers with their offspring is linked to improved cognitive and socio-economic development of children^[5]. Paternal involvement during pregnancy is associated with lower rates of adverse outcomes such as preterm birth, low birth weight and fetal growth restriction^[6]. It has been proposed that the positive effect of paternal involvement on birth outcomes is a consequence of the impact that involved fathers have on positively influencing maternal behaviours and reducing maternal stress^[6]. For example, pregnant women with supportive partners are more likely to receive early antenatal care and to reduce negative health

behaviours such as smoking^[6].

It has become increasingly common for expectant fathers to attend and participate in antenatal care and education and there is a greater emphasis for 21st century fathers to have an increased level of involvement in the day-to-day care of their children^[7,8]. In the past few decades, it has become normal for fathers to be present throughout labour and the birth of their baby^[2]. In Australia, over 90% of fathers attend the birth of their child^[8].

Studies addressing teenage pregnancy usually emphasise the role of the mother and significantly less data is available concerning fathers (Quinlivan and Condon^[9], 2005; Shah *et al.*^[10], 2014). Furthermore, research addressing teenage pregnancy primarily explores the impact teenage pregnancy has on the birth and ongoing development of the child rather than considering the situation from the parent's perspective^[9,11-14]. There is limited research investigating the expectations and decision-making processes in fathers in the setting of teenage pregnancy^[12-16].

The aim of this study was to determine how fathers in the setting of teenage pregnancy experienced the birth of their child. The specific aim was to determine the extent to which they felt prepared for birth.

MATERIALS AND METHODS

Type of study and ethics approval

The Australian Father's Study is a longitudinal study addressing father's attitudes towards antenatal, birth and postnatal care. The Australian Father's Study has institutional ethics committee approval (Joondalup Health Campus Human Ethics Committee). The trial is registered at the Australian and New Zealand Clinical Trials Registry (ACTRN 12613001273774). Individual informed consent was obtained from each participant. The Australian Father's Study includes a representative sample of Australian fathers as well as selected sampling of fathers in particular pregnancy settings.

Study population

This manuscript reports on outcomes of fathers in the setting of teenage pregnancy (Teenage group fathers) and compares their outcomes to those of fathers recruited from the same area health network who were representative of the wider population of Australian fathers in terms of age, religious belief, years of education, employment and first time fatherhood status (Comparison fathers).

Of note, not all teenage group fathers were teenagers. The mean age of fathers in the setting of teenage pregnancy was 2.1 years older than the expectant teenage mother. By example, the partners of nineteen-year-old pregnant women were usually in their early twenties.

All fathers were recruited by research staff and completed questionnaires addressing demographic variables,

Table 1 Demographics of fathers in the setting of teenage pregnancy compared to control

	Teenage (n = 50)	Control (n = 50)	P-value
Age, mean (SD)	21.2 (1.2)	31.7 (3.1)	< 0.0001
Country of birth			
Australia	92%	65%	< 0.0001
Elsewhere	8%	35%	
Aboriginal or Torres Strait Islander	18%	3%	0.01
Relationship status			
Living with partner	32%	88%	< 0.0001
Not living with partner	68%	12%	
Education			
< 12 yr	24%	8%	< 0.0001
12 yr	74%	44%	
> 12 yr	2%	48%	
Employment			
No	32%	6%	< 0.0001
Yes-locally	54%	76%	
Yes-FIFO	14%	18%	
Hours employed			
0-15	35%	10%	< 0.0001
15-40	61%	12%	
40+	4%	78%	
Smoker	38%	20%	0.0087
First time father	96%	52%	< 0.0001
Pregnancy planning			
Natural - planned	22%	68%	< 0.0001
IVF - planned	0%	10%	
Unplanned	78%	22%	
Childbirth education class			
Full class	20%	52%	< 0.0001
Partial class	24%	8%	
Did not attend	56%	40%	

FIFO: Fly in, fly out worker; IVF: *In-vitro* fertilization.

attitudes and roles in decision-making. Quantitative and qualitative data was extracted from completed questionnaires.

Inclusion and exclusion criteria

Expectant fathers were recruited *via* the pregnant mother, so the study was only able to include men where the mother acknowledged the man to be the father of the baby and gave consent for the father to participate. Fathers in the setting where pregnancy was complicated by a known fetal anomaly were excluded. Fathers with insufficient English to complete questionnaires were also excluded.

Variables to be measured and examined

The birth questionnaire was completed within seven days of birth. It consisted of qualitative and quantitative components. The variables measured and examined through the questionnaire were collected in five broad areas: Background demographics, birth outcomes, engagement, involvement in decision making and overall birth experience. These variables were used as a framework for analysis of the primary outcome.

Primary hypothesis and sample size

The primary hypothesis was that teenage group fathers

would feel less prepared for the birth of their baby than the comparison group fathers. Assuming 30% of teenage group fathers would feel prepared for birth, compared to 50% of comparison group fathers, a sample of 45 teenage group fathers provided 80% power with an error of 0.05 to detect this difference. The study recruited 50 teenage group fathers to ensure a sufficient sample, assuming incomplete data might be available from some questionnaires.

Statistical analysis

Data was entered onto a dataset using Minitab® (version 16, University of Melbourne). A descriptive analysis was used for the quantitative data. In order to analyse for differences in responses between teenage group fathers and comparison group fathers, the significance (*P*) of the differences was determined by a χ^2 test for independence. Fisher Exact test was utilized where cell size was less than five. A *P*-value of 0.05 was set for rejection of the null hypothesis. A student *t*-test was used to compare continuous data.

For the qualitative data in the comments section of the questionnaire, an inductive content analysis was performed in accordance with methodology described by Elo and Kyngäs^[17]. The written comments were independently read by the principal researchers and an abstraction process used to summarize and conceptualize the overall meaning and implications of the comments. Open coding was performed to maximize the number of headings in order to describe all aspects of the content. Both quantitative and qualitative aspects of the data were integrated for data interpretation.

RESULTS

The demographic characteristics of the study participants are summarised in Table 1. Teenage group fathers were significantly younger (*P* < 0.0001), more likely to have been born in Australia (*P* < 0.0001) and be Aboriginal or Torres Strait Islander (*P* = 0.01). Teenage group fathers were less likely to be living with the mother of the baby at the time of the birth (*P* < 0.0001). They were less likely to have completed post-secondary education (*P* < 0.0001). Whilst this may have been due to fewer opportunities due to their younger age, they had significantly higher rates of failing to complete secondary education compared to comparison fathers.

Teenage group fathers were more likely to be unemployed, and those who were employed were more likely to be employed part-time for less than 15 h a week (*P* < 0.0001). Teenage group fathers were more likely to smoke (*P* = 0.0087) and be a first time father (*P* < 0.0001).

The teenage group fathers were significantly more likely to report that the pregnancy was unplanned (*P* < 0.0001). They were also less likely to fully attend antenatal classes, even though there were more first time fathers in the teenage group (*P* < 0.0001).

Table 2 summarises the role of fathers in relation to

Table 2 Role of fathers in the setting of teenage pregnancy in intrapartum decision making

Did you play a role in the following decisions	Teenage (<i>n</i> = 50)	Control (<i>n</i> = 50)	<i>P</i> -value
Pain relief in labour			
Yes	3 (6%)	15 (30%)	0.0002
No	47 (94%)	35 (70%)	
Electronic foetal heart rate monitoring			
Yes	1 (2%)	8 (16%)	0.0069
No	49 (98%)	42 (84%)	
Artificial rupture of the membranes			
Yes	0 (0%)	4 (8%)	0.049
No	50 (100%)	46 (92%)	
Oxytocic infusion to accelerate labour			
Yes	0 (0%)	8 (16%)	0.0058
No	50 (100%)	42 (84%)	
Type of birth (by example need for assisted delivery or caesarean section)			
Yes	2 (4%)	14 (28%)	0.0002
No	48 (96%)	36 (72%)	
Who enters the delivery room			
Yes	9 (18%)	39 (78%)	< 0.0001
No	41 (82%)	11 (22%)	
Who held your baby immediately after the birth			
Yes	8 (16%)	40 (80%)	< 0.0001
No	42 (84%)	10 (20%)	
Timing of the baby's first feed			
Yes	2 (4%)	5 (10%)	0.16
No	48 (96%)	45 (90%)	

intrapartum decision-making. Teenage group fathers were less likely to play a role in the decision for the mother to have pain relief during labour ($P = 0.0002$), electronic foetal heart rate monitoring ($P = 0.0069$), undergo an artificial rupture of membranes ($P = 0.049$) or an oxytocic infusion to accelerate labour ($P = 0.0058$). Teenage group fathers were also less likely to play a role in deciding whether the mother should undergo an assisted vaginal delivery or Caesarean section ($P = 0.0002$) and reported less of a role in decisions regarding who enters the delivery room ($P \leq 0.0001$) and who held the baby immediately following birth ($P < 0.0001$).

There was no statistically significant difference between the teenage group fathers and control as to decisions regarding the timing of the baby's first feed ($P = 0.16$).

Results comparing the birth outcomes and experiences of fathers have been summarised in Table 3. There was no statistically significant difference between teenage group fathers and control fathers in regards to the gestational age of baby ($P = 0.15$), gender of baby ($P = 0.57$) and attendance of the father at birth ($P = 0.60$).

Spontaneous delivery was higher and necessity for induction of labour lower with teenage group fathers as compared with the control group ($P = 0.0007$ and $P = 0.02$ respectively). However, a higher proportion of teenage group babies were born with birth weights below 10% adjusted for gestational age ($P = 0.037$) and more teenage group babies required admission to a neonatal nursery ($P = 0.018$).

A significant proportion of teenage group fathers felt

Table 3 Birth outcomes and experiences of fathers in the setting of teenage pregnancy

Birth outcomes	Teenage (<i>n</i> = 50)	Control (<i>n</i> = 50)	<i>P</i> -value
Gestational age of baby			
Preterm (< 37 wk)	6 (12%)	4 (8%)	0.15
Term (37-41 wk)	42 (84%)	41 (82%)	
Post term (> 41 wk)	2 (4%)	5 (10%)	
Induction of labour			
Yes	9 (18%)	14 (28%)	0.02
No	40 (80%)	31 (62%)	
N/A (had elective CS)	1 (2%)	5 (10%)	
Newborn gender			
Male	25 (50%)	27 (54%)	0.57
Female	25 (50%)	23 (46%)	
Birth weight below 10% adjusted for gestational age			
Yes	8 (16%)	4 (8%)	0.037
No	42 (84%)	46 (92%)	
Delivery mode			
Spontaneous vaginal birth	39 (78%)	26 (52%)	0.0007
Assisted vaginal birth	6 (12%)	8 (16%)	
Elective Caesarean birth	1 (2%)	5 (10%)	
Non-elective Caesarean birth	4 (8%)	11 (22%)	
Required admission to a neonatal nursery			
Yes	10 (20%)	5 (10%)	0.018
No	40 (80%)	45 (90%)	
Father attended the birth			
Yes	49 (98%)	50 (100%)	0.91
No	1 (2%)	0 (0%)	
Father felt prepared for the birth			
Yes	6 (12%)	42 (84%)	< 0.0001
Neutral	37 (74%)	2 (4%)	
No	7 (14%)	4 (8%)	
Father found midwifery staff to be helpful			
Yes	40 (80%)	41 (82%)	0.60
Neutral	8 (16%)	6 (12%)	
No	2 (4%)	3 (6%)	
Father found medical staff to be helpful			
Yes	38 (76%)	41 (82%)	0.004
Neutral	10 (20%)	4 (8%)	
No	2 (4%)	5 (10%)	
Father felt consulted by staff during birth			
Yes	5 (10%)	40 (80%)	< 0.0001
Neutral	22 (44%)	6 (12%)	
No	23 (46%)	4 (8%)	

N/A: Not applicable.

both ill-prepared for the birth of their child and felt a lack of consultation by staff during the birthing process (both $P < 0.0001$).

In multivariate analysis, after adjusting for other variables significant at a univariate level of $P < 0.1$ as being significant associations of not feeling prepared for birth (age, relationship status, employment, pregnancy planning, childbirth education class, delivery mode, and admission to neonatal nursery), teenage group fathers remained a significant independent association ($P = 0.0008$).

It was not the aim, nor was the study adequately powered, to detect a difference between fathers who were teenagers (aged less than 20 years) compared to those who were older but within the context of a maternal teenage pregnancy. However, no significant

differences in key outcomes under evaluation were detected between these groups (all $P > 0.05$).

Qualitative analysis

Thirty of the 50 teenage group fathers wrote comments about the birth experience. Four positive and four negative themes were identified.

The first positive theme was happiness. Twenty fathers wrote comments relating to their general sense of happiness. Fathers said: "this is the best experience of my life"; "I'm so happy. I've been jumping around".

The second positive theme was love for the baby. Fifteen fathers wrote comments about love for their baby. Fathers called their baby "precious", "amazing", "wonderful", and many used the word "love" to express their feelings. By example fathers stated: "she is the most precious (sic) thing I have"; "It was amazing how I just suddenly love her".

The third positive theme was pride and a sense of achievement. Seven respondents wrote comments related to this theme. Fathers stated: "...I've really achieved something"; "the best thing I've ever done".

Despite being young, six fathers expressed satisfaction with their fertility as the final theme. One father said: "it's nice to know I'm not firing blanks".

There were four negative themes. The first negative theme related to fathers feeling unprepared for the birth process. A total of 19 fathers expressed this theme. Comments included: "It was pretty fast and furious. I wasn't prepared"; "much more gory than I thought it would be"; "Horrible really. I wasn't ready for that".

The theme of shock was expressed by seven fathers. Comments included: "I'm in shock"; "My heart raced and I was shaking"; "Terrifying". Fear for the baby was the third negative theme. Five fathers expressed a fear that their baby might die or be injured or disabled. Comments included: "...frightened (sic) he would die"; "when that suction thing came out it freaked me out. I thought the baby was going to die or have its head torn off". The final theme was a sense of detachment from the birthing process. Four fathers made comments, including: "I felt like I was watching a TV program"; "it felt like it was happening to someone else and not me". Interestingly, no fathers wrote comments about the mother of the baby, or any other relatives or in relation to care providers. All comments related to either the father and/or the baby.

DISCUSSION

Research into the role and experiences of fathers during the birthing process is limited. This is one of the first studies specifically examining the birth experience of fathers in the setting of teenage pregnancy. The teenage group fathers reported feeling less prepared and less consulted during birth and had less participation in decision-making processes. These findings, together with the negative themes of being unprepared, shocked, fearful for the baby and having a sense of detachment,

support the study hypothesis that fathers in the setting of teenage pregnancy are less prepared and engaged in birth than other fathers.

Teenage group fathers were more likely to be having their first baby. We considered this might explain the higher rates of feeling unprepared and shocked at the birthing process. However, in multivariate analysis, first time fatherhood status was not significantly associated with feeling unprepared for the birth and teenage group fatherhood remained significant.

One strategy to help teenage group fathers prepare for birth would be through participation in childbirth education classes. However, teenage group fathers were less likely to attend such classes, even though they were more likely to be a first time father. The classes were free of charge, so there was no cost disincentive to attendance. Teenage group fathers were more likely to be unemployed or employed only part time, so time constraints were also unlikely to be a barrier to attendance. It may be that teenage group fathers felt reluctant to attend childbirth education classes due to their age. This area requires further exploration in a directed qualitative study.

The educational and employment differences between teenage group fathers and comparison fathers may impact upon the resources these fathers have to assist the mothers with emotional support in labour and subsequent parenting. The quality of support material provided to fathers is associated with children's outcomes. The social disadvantage of younger fathers has been explored by Mollborn and Lovegrove^[15], who considered the lower income and education of teenage fathers to pose a "contextual risk" for their children. The degree of social disadvantage experienced by teenage fathers is likely a significant contributing factor to the degree of unpreparedness and reduced level of satisfaction with the birth process^[14]. There is a likely association between teenage pregnancy and factors consistent with social disadvantage including poverty, unemployment, poor academic achievement and physical abuse^[16].

Sixty-eight percent of teenage group fathers were not living with the mother as compared with 12% of control group fathers and 96% of the teenage group fathers were first time parents. These social factors provide plausible explanation as to why the teenage group fathers reported a limited role in intrapartum decision-making (all decisions < 20% identified a role). It could be expected that a father who is not living with the mother of the baby would be expected by care providers and the father himself, to have less say in intrapartum decision-making processes. Similarly, a first time father may feel more comfortable deferring decisions to the mother, the mother's immediate family (e.g., future grandmother) or as directed by attending medical and/or midwifery staff.

The majority of teenage group fathers reported the pregnancy was unplanned. This lack of control over planning may also have impacted upon father's experiences of feeling engaged in intrapartum decision-making and birth. Expectant fathers decision-making in the setting of

teenage pregnancy is complex and underlying personality traits, idealisation of pregnancy and relationship quality may impact upon levels of comfort and engagement with the expectation of fatherhood^[12-14].

As described, thematic analysis of qualitative comments from the teenage group fathers revealed four main negative themes; unpreparedness, shock, fear and a sense of detachment from the birth. Previous research has shown similar themes. Deave and Johnson^[2] conducted a series of semi-structured interviews amongst first-time fathers and identified themes of apprehension, unpreparedness, fear, anxiety and the feeling of being a helpless bystander. Given partner support is a key feature to successful outcomes in teenage pregnancy, it is important father's fears and lack of preparedness for birth are resolved^[10].

There were a number of limitations to this research. All fathers who participated in the questionnaire were recruited *via* women attending antenatal clinics who consented to the researchers approaching the father. We were therefore not able to secure input from men estranged from their partner. Similarly, fathers where pregnancy was complicated by a known fetal anomaly or where they lacked sufficient English to complete questionnaires, were excluded. Finally, fathers in the teenage group were not necessarily teenagers, with the mean age of fathers 2.1 years older than the pregnant mother.

Implications for practice

Fathers play an important role in the lives of their children. Few fathers in the setting of teenage pregnancy are prepared for the birth of their baby. They are not engaged in intrapartum decision-making and do not feel consulted by attending staff. They are less likely to attend childbirth preparation classes. Engaging fathers in the setting of teenage pregnancy in childbirth preparation might reduce adverse feelings of shock, fear and detachment associated with their child's birth. This may facilitate early father-infant attachment in this vulnerable group.

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COMMENTS

Background

Research on the attitudes of fathers in the setting of teenage pregnancy is limited.

Research frontiers

Engaged fathers in the setting of teenage pregnancy improves pregnancy, birth and mother and child postnatal outcomes. To improve engagement, the authors

first need to understand why such fathers may not be engaged with birth processes.

Innovations and breakthroughs

Current processes leave teenage fathers unprepared for the birth of their child and this promotes disengagement. Greater antenatal engagement may overcome this problem.

Applications

This research is directly applicable to clinical staff who provide antenatal care for teenage mothers.

Terminology

The term "fathers in the setting of teenage pregnancy" is a specific term that refers to the man who fathered the child when a teenage female is pregnant. Given fathers are on average, 2 years older than mothers, many fathers in this setting will not be teenagers themselves, but may be in their early twenties.

Peer-review

This is a well written well designed study to evaluate paternal preparedness in adolescent pregnancies.

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