Be Quiet and Man Up: A Qualitative Study into Men Who Experienced Birth Trauma

Emily Daniels
Bournemouth University
Emily Arden-Close
Bournemouth University
Andrew Mayers (amayers@bournemouth.ac.uk)
Bournemouth University https://orcid.org/0000-0003-2298-498X

Research article

Keywords: Birth Trauma, Men's Mental Health, Perinatal, Paternal Mental Health, PTSD, Qualitative

Posted Date: November 7th, 2019

DOI: https://doi.org/10.21203/rs.2.16974/v1

Version of Record: A version of this preprint was published at BMC Pregnancy and Childbirth on April 22nd, 2020. See the published version at https://doi.org/10.1186/s12884-020-02902-2.

Abstract

Background: Research focusing on paternal mental health is limited and the consequences of this are ignored. For example, little is known about the experiences of men who witness their partner's traumatic birth and the subsequent impact. Therefore, the aim of this study was to explore men's experiences of witnessing a traumatic birth, how these experiences impacted on their wellbeing, and what support they received during and following the traumatic birth.

Methods: Sixty-one participants were recruited via targeted social media to complete an online qualitative questionnaire regarding their birth trauma experience. Eligible participants were aged over eighteen, resided in the UK and had witnessed a traumatic birth that did not result in loss of life. Thematic analysis was used to analyse the questionnaire data.

Results: Three main themes were identified: 'fathers' understanding of the experience' (subthemes: nothing can prepare you for it; merely a passenger; mixed experiences with staff; not about me); 'life after birth trauma' (subthemes: manhood after birth; inability to be happy; impact on relationships); and 'the support fathers received vs what they wanted' (subthemes: prenatal support; birth support; and postnatal support).

Conclusions: Fathers reported significant experiences during childbirth when they had witnessed their partner's traumatic birth. They felt this impacted on their mental health and relationships long into the postnatal period. However, there is no nationally recognised support in place for fathers to use as a result of their experiences. The participants attributed this to being perceived as less important than women in the perinatal/childrearing period, and maternity services' perceptions of the father more generally. Implications include ensuring support is given to all involved in the perinatal period, with additional staff training geared towards the father's role.

Introduction

Concern for maternal mental health has risen in recent years, as shown by the expansion in research and public interest that has focused on the causes and impact of poor maternal mental health on the mother and her family. Evidence suggests the prevalence of anxiety disorders in women during pregnancy is 15.8% and in the postnatal period 17.1% (Fairbrother, Janssen, Anthony, Tucker & Young, 2016). Mothers now are more likely to have higher levels of depressed mood than the older generation (Pearson et al., 2018). Goodman (2019) also concluded that the mother's mental health during pregnancy and up to a year postnatally is crucial to not just her wellbeing, but also the development and wellbeing of her child. The estimated cost of perinatal mental health disorders to the UK economy is around £8.1 billion, with 72% of the cost due to the long-term effects on children (Bauer, Parsonage, Knapp, Lemmi & Adelaja, 2014). Additionally, the emergence of post-traumatic stress disorder (PTSD) as a result of birth trauma in women has become a new area of research, with evidence suggesting that 3.17% of women report post-traumatic stress symptoms following childbirth (Ayers, Bond, Berullies & Wijma, 2016).

For this paper, birth trauma is defined as physical and emotional suffering during birth that resulted from either complications, physical injury or negative reactions during the birthing experience (Shaban et al., 2013). Examples include, but are not limited to, sudden changes to the birth plan, emergency caesarean, post-birth complications and inadequate care received from staff. A lack of control is also suggested to increase the likelihood of a birth being perceived as traumatic (Ford & Ayers, 2009). Meyer (2012) suggested that decision making, access to information, personal security and physical functioning are attributes of control. When these are in place, the mother has a sense of control and is therefore less traumatised by her experience.

A range of risk factors have been identified for PTSD following birth trauma, including a history of mental health problems, lack of information, obstetric procedures and low social support postnatally (Modarres, Afrasiabli, Rahnama & Montazeri, 2012; Ford, Ayers & Bradley, 2010). These risk factors were also identified in Elmir, Schmied, Wilkes and Jackson's (2010) meta-ethnographic study into women's experiences of birth trauma. This identified six key themes: 'feeling invisible and out of control'; 'to be treated humanely'; 'feeling trapped; the reoccurring nightmare of my childbirth experience'; 'a rollercoaster of emotions'; 'disrupted relationships' and 'strength of purpose; and a way to succeed as a mother'. Elmir et al. (2010) highlighted the need for women to be fully informed and included in decision-making in order to increase their sense of control, which could in turn reduce perceived trauma.

Shaban et al.'s (2013) definition of birth trauma is often used to describe the experiences of women. However, increasing evidence suggests that men can have similar experiences. For example, in a study of 212 couples who completed a post-traumatic stress and depression symptom questionnaire at two time points following the birth of their child, Iles, Slade and Spiby (2011) found that men appeared to mirror the responses of their partners, especially with regard to symptoms of post-traumatic stress. The authors suggested that posttraumatic stress symptoms can have significant consequences on the parents' wellbeing and functioning postnatally. Crucially, fathers are more likely to be present at the birth of their child than has traditionally been the case historically. If that birth becomes traumatic, fathers are potentially witnessing (often helplessly) the potential risk of physical harm and/or death of their partner and/or child. Current evidence tells us very little about fathers' experiences of witnessing that trauma, the impact that this may have on them, and the support they receive to help them deal with such trauma.

Etheridge and Slade (2017) conducted an interview study on the impact of birth trauma on eleven fathers. Participants were recruited from the Birth Trauma Association website, as well as internet forums for parents. Themes identified included 'a rollercoaster', 'isolation/abandonment' and 'putting it in a box'. The authors found that fathers can experience trauma as a result of childbirth, which can be intensified by the current maternity model, where the mother is the sole focus as the patient. Their participants reported feeling unjustified in their feelings and coped by avoiding the events of the birth trauma and their emotions surrounding that. While this study highlighted important findings around men's experiences of birth trauma and the impact of witnessing this, the small sample size reduces confidence in those outcomes, suggesting further research is needed.

In an interview study with twenty fathers who had witnessed the resuscitation of their new-born child, Harvey and Pattison (2012) identified four main themes: 'preparation', 'knowing what happened', 'his response' and 'impact on him'. The fathers recalled the event as clear and negative, characterised by fears over their partner and child, and lack of support postnatally, which led to them displaying PTSD-like symptoms. This study emphasises the importance of considering the experiences of men in a female-dominated environment. However, it focused on just one type of traumatic birth. Further research is needed to explore a wider range of examples.

Eggermont, Beeckman, Van Hecke, Delbaere and Verhaeghe (2017), in a cross-sectional study examined variables that influenced the needs of fathers during 'normal' births occurring on maternity wards in Belgium. They found that the fathers' need for information during the birth was greater than their need for involvement. Fathers required information around the process of birth, medical equipment used and their involvement in labour. Education level and parity (the number of children the fathers already had) were significant predictors of the need for information. Fathers with a higher education level reported a lower need for information, as did fathers who had experienced birth previously. These findings can be applied to general healthcare settings. However, their inclusion criteria were limited to partners who had 'normal' vaginal births. It may be that different levels of need (or support) are required for traumatic births.

There are a range of reasons for the limited research around the experiences of men regarding pregnancy and childbirth, possibly related to the history of men's attendance in the delivery room. The presence of fathers has increased, with nearly 95% of fathers in England and 98% of fathers in Scandinavian countries reported as attending childbirth (Draper, 1997). However, this has only been seen within the last few decades. For example, King (2012) noted that prior to the 1970s, birth tended to be a female-only concern and not an experience for men to attend. This is reinforced by historical views of fatherhood, where early theories of attachment downplayed the role of the paternal caregiver in childrearing (Bowlby, 1940; Ainsworth & Bell, 1970). For example, Bowlby's (1940) 'Maternal Deprivation Theory' emphasises the importance of the mother being the 'primary caregiver'. This is further reflected by the way the current UK Government issues mothers with automatic full parental responsibility, whereas fathers are given parental responsibility only when they are married to the mother, listed on the birth certificate or receive a parental responsibility order from the mother or court ("Parental rights and responsibilities", 2018). However, bringing a child into the world is one of the most life-changing events a man can experience (Jomeen, 2016) suggesting that it is imperative to understand the perinatal experiences of the father and the possible consequences of these experiences.

Reasons for men not being given the support they need during childbirth may go beyond labour being a female-dominated experience. Women tend to speak more freely about how they feel regarding mental health, whereas men's behaviour may be more likely to be an indication that they may be experiencing poor mental health (Wilhelm, 2014). For example, men are more likely to show higher rates of substance use (nicotine, alcohol and drugs) than women during this time. Wilhelm (2014) suggests that this could be due to men having poorer emotional health literacy than women, suggesting that they are less likely to report their feelings and seek help. These factors can also lead to a delay in identifying mental health

problems in men. For instance, women are twice as likely as men to be diagnosed with an anxiety disorder (Shaban et al., 2013). Meanwhile, men tend to regard frequently utilising healthcare resources as a female trait, preferring to believe that they are less likely to be ill in comparison (Noone & Stephens, 2008). These findings suggest that poor mental health in men tends be overlooked by healthcare professionals.

Vogel, Wester, Hammer and Downing-Matibag (2014) argue that within western societies, gender roles demand that men should be strong and in control, not needing help with their problems. They identified stigma as societal pressures around gender roles that contributes to men's reduced emotionality and that the limited affectionate behaviour between men led to a decreased willingness to seek and offer help. Their research suggested that these perceptions were mediated by stigma around men's mental health in general.

In an analysis of sixty-two studies focusing on perceptions about Swedish healthcare professionals from 2000 to 2015, Wells (2016) found that fathers felt excluded at prenatal clinics, which focussed on the mother and baby. Consequently, they felt unprepared for the experience of birth and the maintenance of their child. Across the perinatal stages, fathers also felt that midwives were often disrespectful towards them. Fathers who reported being treated respectfully by healthcare professionals were four times more likely to describe the birth as a positive experience, as they felt that they had greater control, lower anxiety and believed their partner was safe. Such findings in Sweden, considered a gender-equal society, suggests that experience of feeling excluded is likely to be experienced by fathers worldwide. Similarly, Poh, Koh and He's (2014) meta-analysis of fathers' experiences during birth found that fathers needed more support during childbirth and did not feel respected by healthcare professionals.

A prominent theme from Wells (2016) was that fathers felt societal pressures to be an equal parent, which was contradicted by the treatment they received from healthcare professionals. Being treated as a secondary parent made fathers feel they were not entitled to the support and information fathers felt they needed. This impacted on the division of parental duties and reflected the message from the healthcare professionals that mothers are more important in caring for their children. Wells also explained that men may need to be shown more support than women in the transition to parenthood, as they are less likely to access support networks, developing unhelpful coping strategies to deal with the transition to parenthood (Vogel et al., 2014). Therefore, it is necessary to address these issues of gender inequality and help empower fathers for the benefit of all the family.

The present study aimed to explore the following questions: what are the experiences of men who witnessed their partner's traumatic birth; how do these experiences impact on their wellbeing; and what support did these men receive during and following these experiences? The study was open to all men who perceived their experience as traumatic, rather than setting specific criteria regarding trauma, as it was considered that trauma is individual and specific to the person.

Methods

Participants:

A purposive sample of sixty-one participants was recruited. Inclusion criteria included being a UK-based father aged over 18 and having witnessed the traumatic birth of at least one child. Exclusion criteria included if the birth trauma experience was over ten years previously (as the issues mentioned may no longer be relevant under the current National Health Service); or if the participant had lost their partner and/or child during the experience (as this was considered unethical in an online study as the participants might need additional specialist support that could not be offered).

Participants were recruited via targeted social media linked to mental health support and national perinatal mental health charities. This recruitment method meant participants were able to access the necessary support they may have required following their completion of the study. As a result, a wide audience could be reached, and participation was voluntary.

The age of the participants at the time of the questionnaire ranged from 24 to 51 (M: 36.6). Ages at the time of the birth trauma ranged from 23 to 46 (M: 33.8). The average time between the birth trauma experience and taking part in the study was 2.8 years. Participants had 1 to 4 children (M: 1.6). One participant reported having twins, and three reported currently expecting another child. Participants came from all regions of England, as well as Scotland, Wales and Northern Island. Flow of participants during the study is described in Figure 1. Despite the specific inclusion criteria, the variety within the sample allowed for the reporting of a wide range of experiences. This contributed to the understanding of the similarities and differences of each individual participant's trauma that may have been lost if the study focused on a specific traumatic birth, for example, new-born resuscitation (Harvey & Pattison, 2014).

Insert Figure 1 here

Procedure:

An online qualitative questionnaire was created using Qualtrics^{TM} to explore the experiences and feelings of a traumatic birth that were described by participants. The input of perinatal and birth trauma professionals ensured that the questionnaire was relevant and sensitive to the nature of the subject. The questionnaire focused on pregnancy, the birth experience and postnatal experiences, as well as the levels of support the participants received at each stage. A link to the questionnaire was distributed online on social media regulated by mental health support groups and ambassadors and perinatal charities.

After participants accessed the questionnaire, they were presented with a participant information sheet, which explained the purpose of the study and provided an opportunity for them to ask for further information. They were then presented with the consent form. Each page of the questionnaire provided a link to a national perinatal charity that participants were encouraged to engage with if they felt they needed support for their experiences. They were also reminded that they could discontinue participation if

they found the questionnaire distressing. After completing the questionnaire, participants were presented with a debrief form, further highlighting sources of support and providing more detail on the study.

Data Analysis:

Thematic analysis was used in order to allow for the complexity of the data as individual and collective accounts. The six stages of thematic analysis were followed (Braun & Clarke, 2006). The first author familiarised herself with the data collected by reading and rereading the transcripts. She then generated initial codes and combined them into broad themes. These were then refined and reviewed with the help of the second author, defined and validated and reported in a theme table. The first author was a young, childless female. This might have made it harder for her to understand the perspective of the participants (men experiencing childbirth). However, discussion with the third author, a man who had experienced normal childbirth, confirmed that the themes were relatable from a father's perspective.

A reflexive diary was completed through all stages of analysis to identify possible misconstructions of themes and create transparency in analysis (Ortlipp, 2008).

Ethical Considerations:

The study was approved by Bournemouth University Faculty of Science and Technology ethics committee. The study focused on sensitive topics that included birth trauma and mental health, which many of the participants may not have spoken about before. Therefore, participants' right to withdraw from the study was highlighted. Participants were told to write only what they were comfortable with sharing to reduce potential distress. Participants were also encouraged to access support they already receive or to seek further support for their experiences. The responses were kept anonymous to protect confidentiality and to give participants the chance to speak freely about their experiences.

Results

The data analysed emphasised the situations that contributed to or protected from the birth trauma experience. Three main themes were identified: 'fathers' understanding of the experience'; 'life after birth trauma'; and 'the support fathers received vs what they wanted'. The flow of themes is demonstrated in Figure 2.

Insert Figure 2here

Fathers' Understanding of the Experience

This first theme identifies the participants' experiences during the birth of their child. This includes what participants believed contributed to their trauma experience as well as potential protective factors. This

theme had several sub-themes: nothing can really prepare you for it; merely a passenger; mixed experiences with staff; and not about me.

Nothing Can Really Prepare You for It

Participants felt that they were not adequately prepared for the experience. They perceived preparation as being in the form of information gained from antenatal classes and from healthcare professionals during the experience. Information was either not given or not provided to a standard of satisfaction. For example, participant 16 said “At no point was there any explanation to either my partner or myself to calm the situation.”.

Information given at antenatal classes also failed to prepare fathers for this kind of birth. Participants felt they focused more on standard deliveries and lacked detailed coverage of potential negative situations. For example, as participant 2 explains “They briefed us on the basic pain relief options for labour and the basics of a birth plan. These seem almost laughable in hindsight.”. Participant 20 also reflected this view: “The antenatal classes are too positive and preparation for all eventualities was poor.”

Participants explained that they were unable to understand what was going on around them due to lack of information or time to explain during the emergency. As a result, some participants reflected that the experience of traumatic birth may not be something you can prepare for: “To be honest, I don’t think anything could have prepared me for what happened.”P3).

The participants knew when something was wrong during the birth experience, but they were not involved in decision making or in relaying information. Often, they were also left alone which contributed to the trauma, as described by participant 1 “When our son was taken away there was no one to ask what had happened to him for quite a while.”

Overall, participants believed that they had not been properly made aware or given the opportunity to make themselves aware and prepared for the likelihood of a complicated birth, from antenatal classes and from staff during the experience. However, participants did recognise that it is not always possible to be prepared.

Merely a Passenger

A lack of control during the complicated birth experience was described as a major contributor to the trauma. Participants either felt they never had control, or control was taken away from them by the situation and/or staff. For example, participant 60 explained “I wasn’t involved. Merely a passenger.”. Participant 10 said the lack of control made him feel as if: “I had lost all control of the situation, which scared me to death.”.

If any control was reported during the experience, it was from trying to help their partner, as mentioned by participant 40: “I did not feel in control at all, but I did feel very involved in looking after my partner’s welfare.”.

Fathers who reflected more positively believed they had some level of control (even if small), which could be considered a protective factor against later developing mental health problems. While they spoke about having little control and finding it traumatic, it was also noted how they probably did not want any control in that situation: “I knew I had no control and I did not feel involved. I didn’t think it appropriate that I was involved to be honest.” (P4); “Felt I had no control at all as there was nothing I could do to fix the situation just had to wait for the doctors to sort things out.” (P52).

In conclusion, this theme details the impact levels of control had on the fathers, how they attempted to create control by looking after the interests of their partner, while also exploring how having little control in this situation was probably best in the end.

Mixed Experiences with Staff

When participants reported that staff were calm and communicated with the couple, this appeared to ease the father and act as a protective factor in their overall view of the experience and how they felt after the birth, as described by participant 26:”as the midwives and consultants were extremely calm, clear and communicated every stage with us.”. This was also reflected by participant 51: “While, what seemed like muted panic or urgency was erupting around my wife, he [surgeon] calmly explained what was going on and what would happen. Not much of what he said went in, but his calmness was infectious.”. This behaviour from staff helped fathers to feel calmer about the situation and therefore, could feel more relaxed.

On the other hand, other participants recalled negative experiences with staff that they linked to the traumatic experience. This covers treatment by staff before, during and after the birth. This included changes in decisions, how they and their partner were treated, not being listened to and staff shifts. Some of these experiences were due to system issues, as explained by participant 2:

“Unfortunately, the shift changes right before things escalated, so we didn’t have much opportunity to build a rapport with the new midwife.”.

However, participants related some of these issues to the way they were treated by healthcare professionals. These included not being listened to and their questions not being answered: “The midwives weren’t very helpful after the birth as my wife developed depression. They ignored my concerns.” (P9) and; “However, not being made to feel like the enemy, a useless caveman that has thoughtlessly impregnated this innocent girl, would be a start.” (P13).

Overall, while positive experiences with staff helped men to feel calmer and more relaxed, they often felt ignored in their dealings with staff. While this was due to system issues in some cases, in other cases the

men felt ignored due to their questions not being answered despite staff being visibly available.

Not About Me

This theme explores the roles fathers believed they had during the birth experience and their treatment as a result of being male. During the pregnancy and birth experience, participants suggested that being male may have impacted on their treatment by professionals, family and friends, based on societal expectations around the birth and the role men play in general.

Participant 7 described how he felt regarding his role during the birth: “I felt mostly like a spare wheel to be kept out of the way.”. Participants often felt that their presence in the experience was not acknowledge, as explained by participant 37: “No. I’m the male. My presence was often not acknowledged let alone my feelings.”. When fathers felt they were acknowledged, it was only as they were there to support their partners: “I remember feeling very emotional and almost breaking down when they wheeled her off, but quickly pulled myself together as I knew she still needed me to be strong and upbeat.” (P51).

This treatment controlled the fathers’ views of themselves and sometimes prevented them from accessing and seeking help when needed, in some cases leading to further problems long after the birth. Participant 47 explained: “I never would of brought it up to anyone even my wife how could I possibly tell her how traumatised I was when she’s the person that had the ordeal of having a baby.”.

Overall, participants’ experiences of being male in this female dominated experience meant that they felt unimportant (like a spare wheel), with their role in supporting their partner. As a result, participants’ felt that they could not explore or discuss their thoughts and feelings during and after the experience.

Life After the Birth Trauma

This theme explores the participants’ postnatal experiences, including expectations of and from fathers, their mental health and the impact on relationships their birth experiences had. Sub-themes include perceptions of manhood after birth; inability to be happy; and impact on relationships.

Perceptions of Manhood After Birth

This sub-theme explores changes in the participants’ roles going into fatherhood and how this impacted their health. Some fathers found that as a result of the traumatic birth, they became the primary caregiver for their child and sometimes their partner. This was explored by participant 12: “We didn’t expect the difficulties we would face with my wife’s recovery. She ended up with a few issues and I spent a bit of time off work looking after her.”. Participant 13 also reflected on his experience of becoming the primary caregiver for his child and partner that eventually impacted on his work role and friendships: “The trauma of my son’s birth put me immediately into what felt like sole-responsibility for my entire family 24/7, ultimately excluded me from colleagues and friends and I struggled to cope.”.

The trauma also impacted on the participants' expectations of fatherhood, where they felt that they did not meet the standards or expectations that society had given them. For example, they did not experience an instant bond with their child and in turn felt guilt and shame about themselves as fathers:

Participant 57's experience reflects this: "I expected to feel an instant bond with the baby and I didn't. I came to have a very strong bond with my daughter and I think not getting it initially was a combination of an unrealistic expectation of a romanticised version of what it is to have a child and the situation I was in. Had my wife been fine I wouldn't have felt so conflicted and it may have come easier at the start.".

Participants also explored their role of being a 'man' and what their experiences meant in a female dominated experience. This also impacted on how they coped with their experiences postnatally. They saw being a 'man' as being quiet and avoiding discussion of their experiences, as explained by participant 11: "A man's role in the birth is nothing to talk about really. Be quiet and man up, etc,". This was partly because they were aware of their partner's trauma and believed it was greater than their own, as participant 13 reflects: "I chose not to think about it for some time; as a man, it does feel churlish to go on about your trauma when the female involved has this harrowing experience happening within her own body.".

However, participants also acknowledged the stigma around discussing emotions with other men, and not wanting to burden their friends, preventing them from speaking up and seeking support. For example, as participant 31 states: "As a lad it's not easy to talk to male mates. I'm sure they'd listen but I don't want to be a burden or a downer.".

In conclusion, this theme identifies how preconceived expectations of birth and the postnatal experience for men as men and fathers can contribute to feelings of unimportance around their own experiences. This in turn, leads to less support seeking and reinforces these expectations.

Inability to be Happy

Participants described how the postnatal period affected their daily lives and how the trauma still affected them in the present day. Traumatic births appeared to negatively affect their mental health during the postnatal period, leading to difficulties coping with everyday functioning, as described by participant 14: "Upset, distressed and unable to cope very well. It was a feeling about the fragility of life during the birth and the overwhelming nature of the birth and the subsequent days.". Some participants experienced the development of mental illness in some cases. For example, participant 1 states: "… develop[ed] OCD within weeks of the birth. That might have been about the life changes that becoming a father involved but it might be rooted in that birth experience too.".

Most participants reported feelings and experiences during and after the birth trauma that can be linked to traits of PTSD. Participant 47 was diagnosed with PTSD and described flashbacks, triggers and avoidance: "I had flashbacks that seemed so real it was like I was there again, I deal with it better now but

going back to the maternity wing of that hospital caused great anxiety, walking past the theatre doors etc the sound of a heart rate monitor sets me off even when it's on the TV, I can't watch things like Call the Midwife or One Born Every Minute or anything involving childbirth on the TV either.". Participant 60 also discussed flashbacks that were directly linked to the birth experience: "I regularly have flashbacks and see the number 61 on the heart rate monitor in my mind.".

Overall, participants described a wide variety of mental health problems in the days and weeks following the birth, with some incidences leading to mental health disorders, which continued to impact their lives up to the present day.

Impact on relationships

This theme explores the impact that the traumatic birth had on the important relationships in their lives with their partner, children and friends. Most of the participants reported that the experiences brought them closer to their partner. Going through such a traumatic experience, including the fear that they could have lost their partners created a stronger bond for participants: "Maybe there's an extra layer to us as we survived such a difficult experience and we know that whatever happens in life we're unlikely to encounter anything as testing." (P3); "It's made us closer because I know I could have lost her." (P8).

However, many discussed struggling to form a bond with their child (and feeling guilty), as participant 57 mentions: "I wanted to be with my wife but I felt guilty that I didn't want to be with the baby. When I was with the baby I didn't feel the level of love that everyone says you do and I felt guilty about that. I was just really confused and frightened.". Participants also expressed having fears around more children. As participant 51 describes: "Only in the way that I'm reluctant to have sex in case she accidentally gets pregnant.". These feelings also manifested as difficulty celebrating their children's birthdays, and fears about intimacy with their partners, which impacted their relationships long term: "We don't talk about what went on that day, each birthday is very difficult and not a celebration." (P16).

In some cases, participants also felt this negatively impacted their relationships with friends, due to others lacking comprehension of the situation. As participant 10 explains: "I tried to talk to my friends, but most of them have no idea of children, or what it involves, so it's hard for them to relate.".

Overall, negative birth experiences made the relationship with partners stronger in some cases. However, it also negatively affected partner relationships through impacting the bond with their child and leading to avoidance of intimacy. Relationships with those outside of the family were also negatively impacted in some cases, as friends did not share the same experiences and could not understand.

Support Fathers Received vs What They Wanted

This theme consists of the levels of support fathers felt they received either personally, as a couple or for their partner, in relation to what support they believed would have been beneficial. It is split into three sub-

themes that explore different time periods of the experience: prenatal support; birth support; postnatal support.

Prenatal Support

During the pregnancy, participants reported receiving a good level of support, where all concerns raised were answered, as participant 11 describes: “As much support as was needed. The pregnancy was pretty good to be honest so we didn’t require any additional support but whenever we had questions then we got the answers.”. However, they did note that antenatal classes were very much tailored towards mothers. For example, when participant 51 was asked about the support he received prenatally, he said “Personally, none. But my wife was well looked after and supported. However, I never felt left out or unwelcome.”.

However, in retrospect, participants felt antenatal classes only discussed normal births, which they felt created an idealised experience. Participant 29reported wanting antenatal classes to expand on the breadth and depth of the childbirth experience, to cover departures from the norm: “… in retrospect, I see these as “idealised” birth training classes. Breathing exercises, birth pool options, stages of normal labour etc.”. Participant 10 also expressed this view:More information on what a birth plan could involve, and learning about how variable each pregnancy is, as any change from the norm made us quite nervous”.

Furthermore, participants felt that ideally antenatal classes would include more information around being included as a father. For example, participant 21 felt that: “I should have been more included from the beginning. A mother and father should both complete questionnaires regarding depression and a father should be asked how he is feeling or if there is anything that he wants to ask or doesn’t understand. These questions are solely aimed at the expectant mother whilst a father has to butt in and speak during a conversation he is only there to witness.”. Participant 55 also explained the importance of peer support for partners the prenatal period: “Peer to peer support from other fathers, an antenatal session for partners on supporting birth & the early days and information tailored to males (language, imagery & context).”.

Overall, fathers felt the prenatal period support would have been better if they had been provided with more information and felt more involved in sessions, such as antenatal classes.

Birth Support

Participants described the levels of support varying throughout the birth as generally less positive than prenatal support. For example, as participant 1 states *“In the 70ish hours before the actual birth support levels went up and down.”*

However, the fathers often reported that this was understandable due to the emergency situation. They were aware that the lack of support for them meant that their partners were being saved, as participant 30

explains:Emotionally/mentally, I remember receiving very little support. Can't fault them too much though - they were busy saving my partner and baby!".

Nevertheless, participants would have liked to be informed and involved throughout the birth. They felt that being involved would have made them feel more useful, as explained by participant 8 ("I would have liked to have had someone to stay with me or at least pop in regularly to see if I was okay and to tell me what was happening with my wife.") and participant 58 ("To be made to feel like a useful part, to be involved and kept updated on what was going on and why").

In some cases, they felt that the lack of support received contributed to them labelling the experience as traumatic, as stated by participant 2: "More support in making decisions regarding this [implications of delivery]—this was a major contributor to the trauma of our delivery.".

This theme explored how a lack of support was perceived by participants as a contributor to their traumatic experience and wanted to be involved in making decisions. They wanted someone to support them but were aware of the need to focus on the mother.

Postnatal Support

Participants discussed support received in the months after the birth, plus what they felt would have been beneficial. Many fathers felt there was minimal support for themselves or their partners:We had some follow up care for our daughter and 2 discussions with doctors regarding the delivery and what went wrong. These were minimally informative." (P2). Some participants sought professional help as a result, as participant 4 describes:I paid for private therapy. My wife had no follow up from her mental health team except a 20 min meeting alone with them…".

Participants felt a chance to discuss their experiences and have them explained after the event would have helped them make sense of the situation. Participant 2 explains the support he believed should have been in place: "More information from doctors about what happened to us—and an interview, possibly with administration or some other body to help us understand what happened and to give feedback—this we would not get unless we took the initiative to pursue such an opportunity. I think this kind of debriefing should be standard when things go outside the parameters of a normal delivery.". Many participants reported wanting a support group for dads, and even mental health support/therapy themselves. This included support from other dads: "Maybe I could have joined a group of dads to discuss." (P42); "Advice from other dads."P56).

However, participants acknowledged that men do not always seek help, as explained by participant 30: "Very little, but I could have sought more help, so I put no blame there.". Participants suggested that help could be explicitly signposted and made easier to find in an attempt to break down barriers that prevent men from seeking help. This was reflected by participant 43: "Perhaps it would of been nice to be told about the support rather than having to seek it.".

This final theme described the lack of or minimal amount of support for fathers in the postnatal period. Fathers explained that support could be given in the form of debriefs, ‘dad groups’ and support being made explicit to encourage fathers to seek support when they needed it.

Discussion

The current study explored the following research questions: what are the experiences of men who witnessed a traumatic birth; how do these experiences impact on their wellbeing; and what support did these men receive during and following these experiences? The study reported the complex narratives of 61 participants who had witnessed a wide range of traumatic births with their partner and child. The following themes were identified: ‘fathers’ understanding of the experience’ (subthemes: nothing can prepare you for it; merely a passenger; mixed experiences with staff; not about me); ‘life after birth trauma’ (subthemes: perceptions of manhood after birth; inability to be happy; impact on relationships); and ‘the support fathers received vs what they wanted’ (subthemes: prenatal support; birth support; and postnatal support).

Participants felt that nothing could really prepare them for a traumatic birth, echoing the findings of Harvey and Pattison (2014), who explored the experiences of fathers who witnessed their child’s resuscitation. Although fathers had been aware that a traumatic birth was possible, and had tried to prepare themselves for it generally, they had not considered the possibility of resuscitation, so did not access information on that. In the current study, many fathers said that they had attempted to be prepared for the birth experience by attending antenatal classes, and appointments with doctors and other perinatal health professionals. However, fathers still felt unprepared as they believed the information they received focussed on ‘normal’ births, leading lack of awareness of the possibility of a traumatic birth.

Eggermont et al., (2017) also found that a father’s need for information outweighed his need for involvement during the experience, and he required less information if he had experienced a birth before. Many fathers in the current study reported similar experiences of their first childbirth to what was found by Eggermont et al., (2017). However, Eggermont et al., (2017) focussed on ‘normal births’ meaning only limited comparisons can be made. Future research could aim to directly compare normal and traumatic births in a single study. Further, in a study into women’s traumatic birth experiences, Modarres et al., (2012) found that a lack of information also contributed to the trauma, which was supported in the current study. Taken together, these findings imply that adequate information during the experience and aftercare from birth trauma is key, as birth trauma is a unique and difficult phenomenon to prevent and prepare for.

The fathers in the current study saw a lack of control as being a major contributor to their perceived trauma. Ford, Ayers and Bradley (2010) suggested that the loss of control in the birth experience is a contributing factor for experiencing birth trauma in women. Fathers’ lack of control was linked to being left out of decision-making and having limited access to information during the experience, which have

also been found to be contributing factors for women's perceptions of traumatic birth (Meyer, 2012). Alternatively, the fathers in the current study who reflected more positively on their experiences noted that they had some control during this experience. However, Meyer (2012) also identified attributes specific to women's experiences (for example, physical functioning and personal security), which cannot be directly related to the men in this study.

The concept of loss of control during birth has been identified in numerous studies. For example, Elmir et al., (2010) identified the theme 'feeling invisible and out of control' in their meta-ethnographic study of women's perceptions of birth trauma. In this study, women believed their lack of control was a direct result of limited information received from staff. Similar findings have been reported in Harvey and Pattison's (2014) theme of "knowing what happened", in their exploration of experiences of fathers who witnessed their new-born child's resuscitation. Control is also a large part of identity for men. Vogel et al. (2014) suggested that in western societies, a common male identity is to be in control, which was denied during childbirth in the current study. Future research may benefit from comparing the birth trauma experiences of men and women together (similar to Iles et al., 2011), in order to identify similarities and differences in traumatic experience.

Fathers' experiences with staff greatly impacted on their perceived trauma. For example, more positive experiences with staff appeared to act as a protective factor against low mood in the postnatal period. On the other hand, participants associated negative experiences with staff (changes in plans, staff issues, not being listened to, treatment of partner and self) as contributing to the trauma. Similarly, Po, Koh and He (2014) found that fathers believed that they were not respected by healthcare professionals during the prenatal period, leading to a lack of control of the situation and ultimately, a less positive experience. However, participants' experiences during the postnatal period were not reported.

The fathers felt that being a man in the birth experience influenced how healthcare professionals treated them, reinforcing that they should not be involved as this was a woman's domain. This underpins the concept that fathers are 'secondary parents' (Wells, 2016), placing further stereotypical roles and responsibilities on the mother. This may also explain the lack of research into men and birth trauma. Theses narratives were also mirrored by Harvey and Pattison (2012), where participants felt unimportant as a result of their treatment by professionals. This suggests that it is essential that healthcare professionals recognise fathers as primary parents, in line with mothers, so that they can receive the necessary support.

The theme 'perceptions of manhood after birth' reflects on the impact of negative experiences during birth, as perceptions of masculinity limited men from talking about their experiences and may have prevented them from seeking help. The fathers in the current study stated it felt inappropriate to talk about their experiences because they were not the patient and men do not talk about their experiences and emotions. Similarly, Etheridge and Slade (2017) found that fathers' coping strategies were controlled by their beliefs about what is acceptable in a man's role. This included keeping their emotions to themselves, avoidance and remaining strong for their partners.

This theme also explores the participants perception of what it means to be a father in the early postnatal period as perceptions of masculinity appeared to impact on their expectations of fatherhood. For example, fathers reported struggling with their new role as a father, often having to take on more responsibility than they previously expected, causing doubts in their own abilities. This caused participants to keep quiet about their struggles and evade the topic of birth, even avoiding intimacy with their partner to prevent another birth. Zerach and Magal (2017) also discuss the effects of gender strain in terms of childbirth. They explain that men experience psychological distress when they fail to live up to internalised beliefs of masculinity. This can prevent men from fully reacting to the birth experience. Therefore, fathers struggle with overcoming the trauma and seeking help. This supports findings of Vogel et al. (2014), suggesting that these male coping styles fall in line with gender roles that are primarily emotionally restricted and as a result fail to seek and offer support. These negative coping styles can contribute to the development and maintenance of PTSD (Bisson, 2009). Further research is needed to explore what fathers consider masculinity to mean in context of birthing, as current evidence may be based on outdated perceptions.

However, it needs to be noted that findings from this study do not suggest that healthcare professionals are actively acting against the father during the traumatic births. It is more likely that the nature of the situation and other factors (such as gender stereotypes) contributed to the outcomes in the current study. For example, Harvey and Pattison (2012) suggest that fathers may not register that healthcare professionals may be supporting them, due to the traumatic experience. Etheridge and Slade (2017) also report that only a small number of fathers were angry with perinatal staff for their treatment, while many of the participants were positive about the work that the healthcare professionals were doing to help their partner. Nevertheless, the evidence suggests that there are ways in which fathers' needs are not always being addressed.

The impact of traumatic birth had serious implications for some the participants in the current study. Participants described mental health issues such as depression, anxiety, postnatal stress, obsessive-compulsive disorder (OCD) and PTSD symptoms. They also spoke of guilt about their feelings regarding their child and some fathers reported struggling to connect with their partner due to fears of intimacy and pregnancy. Similar mental health difficulties and relationship problems for fathers, as a result of their traumatic experiences, were found in Elmir et al. (2010), Etheridge and Slade (2017), Iles et al. (2011) and Harvey and Pattison (2016).

Despite the difficulties participants and their partners faced before during and after the experience, fathers in the current study were often not offered, nor sought, support. Fathers who did not seek help were not aware of what support was available or were unable to access it. Subsequently, this may have been a result of men taking longer than expected to realise they had a problem, and consequently experiencing delays in detection of health issues (Wilhelm, 2014). Therefore, healthcare professionals need to be aware of these factors that may prevent men from seeking help and professionals providing support; and be aware of where the fathers can be signposted to receive help and support.

During the birth experience and postnatally, fathers reported receiving only minimal support despite needing more. Many reported receiving a short debrief by practitioners after the event, but were left feeling unsatisfied with this, as it did not give them the time and space to effectively process the event. Providing a more thorough debrief with professionals could have identified potential issues for the parents and given them the opportunity to access necessary support. Participants often explained concerns over their partner's mental health, which in turn impacted their own wellbeing, with perinatal services failing to effectively address this. Overall, the support participants wanted to be offered were an opportunity to talk to someone (either professionally or to a peer); information to explain what had happened; and therapy or counselling for themselves and for their family. However, it is important to note that debriefs are not effective in themselves at addressing the effects of a traumatic birth. Sheen and Slade (2015) found that postnatal debriefs were ineffective in reducing post-traumatic stress or depressive symptoms and should not replace targeted interventions. They also suggested alternative terminology: debriefing should be referred to as 'childbirth review', as it more fully encompasses the discussion of the labour, feeling and subsequent responses to their experience without sounding like a 'fix' to the traumatic experience. Despite this, the participants in the current study suggested a debrief to assist with their own understanding of what happened.

Possible improvements to clinical practice could involve offering to give a full debrief of the birth experience with parents in the postnatal period. This could occur even if the birth is considered 'normal' by professionals, as parents can still perceive births to be traumatic if they deviate from expectations (Ford, Ayers & Bradley, 2010). Parents could be offered the opportunity to understand what happened and be signposted to opportunities for support. Such support could be provided by the voluntary and charity sector, focusing on interventions such as peer specialist help, online support groups, or targeted interventions such as postnatal PTSD therapy. If further or more complicated issues are identified during the debrief, parents could be referred to specialist NHS interventions. Follow-up screening and referral needs to be ongoing, as trauma symptoms can sometimes be delayed for several months (American Psychiatric Association, 2013).

The current study generated rich and broad data based on the narratives of the 61 participants who had taken part in the research due to using an online questionnaire format. By preserving participant anonymity, this study elicited detail that might have been withheld from interviews. This is especially important as the data showed how difficult men find it to discuss birth trauma. By advertising this study online, it was possible to raise awareness about birth trauma and men's mental health. However, one limitation of the questionnaire study was that points could not be clarified or followed up with participants.

Future studies could explore the experience of more specific types of birth trauma within the same study (to allow comparison). This could include fathers who had lost their partner and/or child during the experience. Such an examination could potentially highlight how different types of traumatic experience might trigger poor mental health outcomes. Research into effective interventions or preventative measures for men and their families could be crucial to fully address this area of research. This includes

developing a deeper understanding to the barriers that prevent men from seeking help, as well as why practitioners may not offer support to men. By encompassing all perspectives from a traumatic birth, a better understanding can be achieved, resulting in preventative action, or, where this is not possible, effective aftercare.

Conclusion

The outcomes of the current study aimed to raise awareness about fathers' experience of birth trauma, to help educate perinatal health professionals who may be in contact with fathers, and to encourage the discussion of men's mental health. The findings suggest that the birthing experience has a profound effect on fathers, especially if it was traumatic. This can ultimately have an impact on the father's relationship with their family. It can also have a negative effect on their own mental health, especially regarding postnatal PTSD. Many fathers in the current study reported feeling unable to access or ask for support during and following a traumatic birth experience. Our findings suggest that these feelings were related to the fathers' perceptions of the experience and as a result of treatment by perinatal staff, friends and family, as well as the influence of perceived societal expectations. Following the issues raised by this study, several recommendations merit consideration: further research is needed to gather more evidence around fathers' experiences of birth trauma; initiatives are needed to tackle gender stereotypes around birthing; more education is needed for perinatal health professionals about the role of the father in the perinatal period; strategies are needed to encourage fathers to seek help; screening needs to put in place to identify fathers who are most at risk of poor mental health; and services need to be developed to ensure fathers get appropriate support.

Abbreviations

PTSD—Post-traumatic Stress Disorder

OCD—Obsessive-compulsive Disorder

Declarations

Ethical approval and consent to participate

Ethical approval was granted by Bournemouth University Faculty of Science and Technology Ethics Committee and all participants consented to take part in the study

Consent for publication

Notapplicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

Authors declare no competing interests

Funding

The study was funded by Bournemouth University.

Authors' contributions

The study was designed by AM and ED. Analysis was completed by ED and verified by EAC. ED completed the write up of the study, which was critically reviewed and edited by AM and EAC. All authors read and approved the final manuscript for publication.

Acknowledgments

The authors would like to acknowledge Mark Williams (perinatal mental health campaigner), Dr Liam Wignall (Senior Lecturer at Bournemouth University) and the Make Birth Better (birth trauma) network for their support with the current study.

References

Ainsworth, M., & Bell, S. (1970). Attachment, Exploration, and Separation: Illistrated by the Behaviour of One-Year-Olds in a Strange Situation. *Child Development, 41,* 49–67.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: Author.

Ayers, S., Bond, R., Bertullies, S., & Wijma, K. (2016). The aetiology of post-traumatic stress following childbirth: a meta-analysis and theoretical framework. *Psychological Medicine, 46(*6), 1121–1134. doi: 10.1017/s0033291715002706

Bauer, A., Parsonage, M., Knapp, M., Lemmi, V., & Adelaja, B. (2014). *The Costs of Perinatal Mental Health Problems* [Ebook]. Centre for Mental Health and London School of Economics. Retrieved from

https://www.centreformentalhealth.org.uk/Handlers/Download.ashx?IDMF = 07afd94b–92cb–4e47–8439–94cbf43548d8

Bisson, J. (2009). Psychological and social theories of post-traumatic stress disorder. Psychiatry, 8(8), 290–292. doi: 10.1016/j.mppsy.2009.05.003

Bowlby, J. (1940). The Influence of Early Environment in the Development of Neurosis and Neurotic Character. *International Journal Of Psycho-Analysis,* (25), 19–52.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative ResearchIn Psychology, 3(*2), 77–101. doi: 10.1191/1478088706qp063oa

Draper, J. (1997). Whose welfare in the labour room? A discussion of the increasing trend of fathers' birth attendance. *Midwifery, 13(*3), 132–138. doi: 10.1016/s0266–6138(97)90003–6

Eggermont, K., Beeckman, D., Van Hecke, A., Delbaere, I., & Verhaeghe, S. (2017). Needs of fathers during labour and childbirth: A cross-sectional study. *Women And Birth, 30(*4), 188–197. doi: 10.1016/j.wombi.2016.12.001

Elmir, R., Schmied, V., Wilkes, L., & Jackson, D. (2010). Women's Perceptions and Experiences of a Traumatic Birth: A Meta-Ethnography. *Journal Of Advanced Nursing, 66(*10), 2142–2153. doi: 10.1111/j.1365–2648.2010.05391.x

Etheridge, J., & Slade, P. (2017). "Nothing's actually happened to me.": the experiences of fathers who found childbirth traumatic. *BMC Pregnancy And Childbirth, 17(*1). doi: 10.1186/s12884–017–1259-y

Fairbrother N, Janssen P, Antony M, Tucker E, Young A. (2016) Perinatal anxiety disorder prevalence and incidence. Journal of Affective Disorders. 200, 148–155. https://doi.org/10.1016/j.jad.2015.12.082

Ford, E., & Ayers, S. (2009). Stressful events and support during birth: The effect on anxiety, mood and perceived control. *Journal Of Anxiety Disorders, 23(*2), 260–268.doi:10.1016/j.janxdis.2008.07.009

Ford, E., Ayers, S., & Bradley, R. (2010). Exploration of a cognitive model to predict post-traumatic stress symptoms following childbirth. *Journal Of Anxiety Disorders, 24(*3), 353–359. doi:10.1016/j.janxdis.2010.01.008

Goodman, J. (2019). Perinatal depression and infant mental health. *Archives Of Psychiatric Nursing, 33(*3), 217–224. doi: 10.1016/j.apnu.2019.01.010

Harvey, M., & Pattison, H. (2012). Being there: a qualitative interview study with fathers present during the resuscitation of their baby at delivery. *Archives Of Disease In Childhood - Fetal And Neonatal Edition, 97(*6), F439-F443.doi:10.1136/archdischild–2011–301482

Iles, J., Slade, P., & Spiby, H. (2011). Posttraumatic stress symptoms and postpartum depression in couples after childbirth: The role of partner support and attachment. *Journal Of Anxiety Disorders, 25(*4), 520–530. doi: 10.1016/j.janxdis.2010.12.006

Jomeen, J. (2017). Fathers in the birth room: choice or coercion? Help or hindrance?.Journal Of Reproductive And Infant Psychology, 35(4), 321–323. doi: 10.1080/02646838.2017.1361124King, L. (2012). Hidden Fathers? The Significance of Fatherhood in Mid-Twentieth-Century Britain. Contemporary British History, 26(1), 25–46.doi:10.1080/13619462.2012.656385
Meyer, S. (2012). Control in childbirth: a concept analysis and synthesis. *Journal Of Advanced Nursing, 69(*1), 218–228. doi: 10.1111/j.1365–2648.2012.06051.x

Modarres, M., Afrasiabi, S., Rahnama, P., & Montazeri, A. (2012). Prevalence and risk factors of childbirth-related post-traumatic stress symptoms. *BMC Pregnancy And Childbirth, 12(*1). doi: 10.1186/1471–2393–12–88

Noone, J., & Stephens, C. (2008). Men, masculine identities, and health care utilisation. *Sociology Of Health & Illness,* 30(5), 711–725.doi: 10.1111/j.1467–9566.2008.01095.x

Ortlipp, M. (2008). Keeping and Using Reflective Journals in the Qualitative Research Process. *The Qualitative Report, 13(*4), 695–705.

Pearson, R., Carnegie, R., Cree, C., Rollings, C., Rena-Jones, L., & Evans, J. et al. (2018). Prevalence of Prenatal Depression Symptoms Among 2 Generations of Pregnant Mothers. *JAMA Network Open, 1(*3), 1–10. doi: 10.1001/jamanetworkopen.2018.0725

Parental rights and responsibilities. (2018). Retrieved 12 June 2018, from https://www.gov.uk/parental-rights-responsibilities/who-has-parental-responsibility

Poh, H., Koh, S., & He, H. (2014). An integrative review of fathers' experiences during pregnancy and childbirth. *International Nursing Review, 61(*4), 543–554.doi: 10.1111/inr.12137

Robertson, S., & Baker, P. (2016). Men and health promotion in the United Kingdom: 20 years further forward?. *Health Education Journal, 76(*1), 102–113. doi: 10.1177/0017896916645558

Shaban, Z., Dolatian, M., Shams, J., Alavi-Majd, H., Mahmoodi, Z., & Sajjadi, H. (2013). Post-Traumatic Stress Disorder (PTSD) Following Childbirth: Prevalence and Contributing Factors. *Iranian Red Crescent Medical Journal, 15(*3), 177–82. doi: 10.5812/ircmj.2312

Sheen, K., & Slade, P. (2015). The efficacy of 'debriefing' after childbirth: Is there a case for targeted intervention?. *Journal Of Reproductive And Infant Psychology, 33(*3), 308–320. doi: 10.1080/02646838.2015.1009881

Vogel, D., Wester, S., Hammer, J., & Downing-Matibag, T. (2014). Referring men to seek help: The influence of gender role conflict and stigma. *Psychology Of Men & Masculinity, 15(*1), 60–67. doi:

10.1037/a0031761

Wells, M. (2016). Literature review shows that fathers are still not receiving the support they want and need from Swedish child health professionals. *Acta Paediatrica, 105(*9), 1014–1023. doi:10.1111/apa.13501

Wilhelm, K. (2014). Gender and mental health. *Australian & New Zealand Journal Of Psychiatry, 48(7*), 603–605. doi: 10.1177/0004867414538678

Zerach, G., & Magal, O. (2017). Exposure to stress during childbirth, dyadic adjustment, partner's resilience, and psychological distress among first-time fathers. Psychology Of Men & Masculinity, 18(2), 123–133. doi: 10.1037/men0000048

Figures

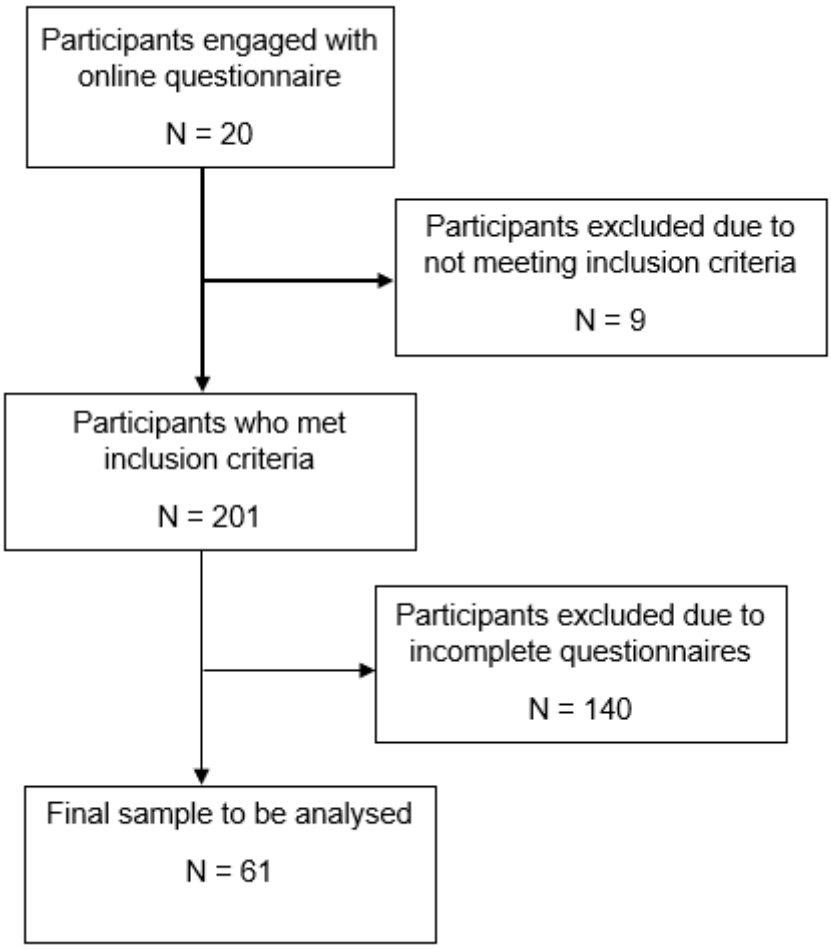

Figure 1

Flowchart of participant engagement

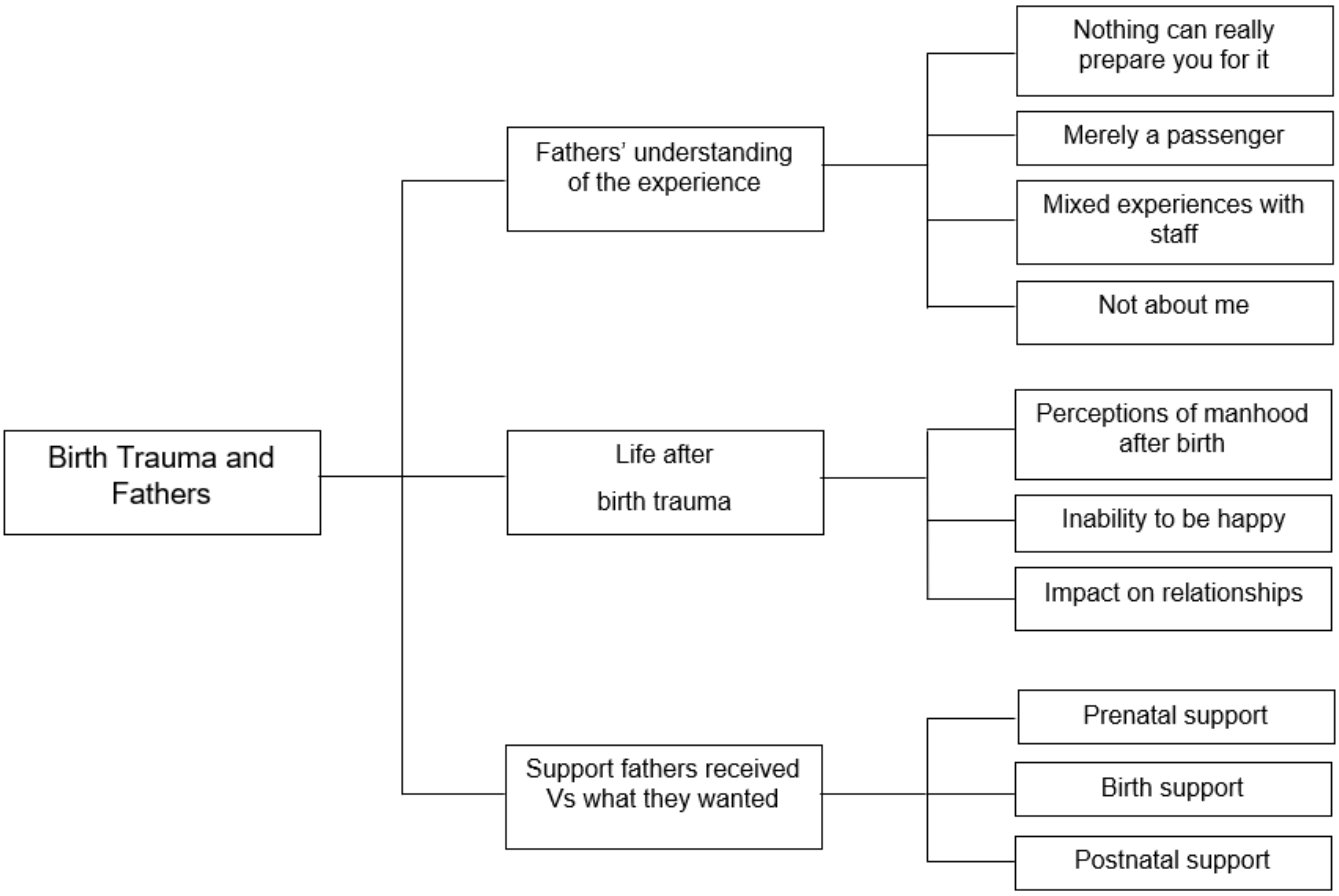

Figure 2

Flow chart of themes explored