Birth Mapping: A Visual Arts-Based Participatory Research Method Embedded in Feminist Epistemology

Kaveri Mayra

Abstract
Reproductive and sexual health of women are sensitive areas of enquiry characterized by strong cultural oppression of women. Body mapping, an arts-based participatory research method, has proven useful in research with such sensitive topics. In this paper, I describe my experience of researching women’s experience of childbirth through birth maps, an adaptation of body mapping. Live size maps were co-created along with birthing story and body key with women in Bihar, India. Body mapping is a very cost-effective method that ensures better recall, richer narratives, reduced power-based inequalities that enables to explore reproductive, maternal & sexual health topics respectfully. The birth map and birthing story can generate awareness about how women give birth, as an attempt to improve the quality and respectfulness in care provision during labour and childbirth.

Keywords
Body mapping, Respectful Maternity Care, Critical Feminist Theory, Arts-based Research Methods, Participatory Research, Reproductive Health

Introduction
Research with women about their sensitive embodied experiences poses significant challenges when discussing their lived experiences of healthcare. In some country's contexts and cultures, such as India, it is uncomfortable and/or taboo for women to discuss reproductive and sexual health and needs, contributing to the embarrassment stemming from a strong culture of silence and shame around it (Bhatt, 2018; Mayra et al., 2022; Pande et al., 2016; Paul et al., 2017; Santhya et al., 2010; Yari et al., 2015). These challenges are compounded by the gender and power differentials between them and people around them, in the home and obstetric environment (Sprague, 2016). This article presents a unique, culture-responsive, visual arts-based process that enables the understanding of women’s embodied experiences particularly in relation to labour and childbirth.

Arts-based research is promising when exploring sensitive topics, as a powerful yet simple way of participants expressing and articulating potentially overwhelming experiences, which also makes it therapeutic (Fraser & Sayah, 2011). Arts-based methods can be used standalone or combined with other research methods to create a rich narrative and better understanding of the phenomena that are difficult to discuss due to the stigma around them (Eisner, 2006).

Body mapping is a visual arts-based, participatory research method that depicts participant experiences on life sized drawings, either painted or drawn, to depict social, political and/or economic aspects of a person’s life. These images are then studied through their body and the world they inhabit (Coetzee et al., 2019; Gastaldo et al., 2012). It is a visceral approach of data collection that treats the body as a blueprint on the canvas and depicts feeling, emotions and information regarding what the body has experienced (Coetzee et al.,...
Body mapping is considered a way of storytelling that brings out people’s narratives, thus enabling people to understand it in a more holistic manner. In ‘The Wounded Storyteller’, Frank (1995) contends that “the stories that people tell come out of their bodies… the personal issue of telling story about illness (or an experience) is to give voice to the body…”.

Researchers recommend using bodies as dynamic sources of information since they are at the nexus of private and public spaces, gender identities, gendered violence, race, sexuality and citizenship status (Sweet & Escalante, 2015). This embodied experience can be harnessed by enquiring and paying attention to how bodies feel internally through their moods, feelings and states of being in relation to the phenomena occurring in spaces such as the home and obstetric environment, and social and communal spaces (Crawford, 2010; Hayes-Conroy, 2010). Bodies, although now emerging as a space for data collection, are currently underutilised and under-theorised areas in research that are now emerging (Crawford, 2010).

Body mapping, as a visual arts-based research method, has been gaining foothold in health research over the last two decades. It evolved from the Memory Box Project in Cape Town, first developed by an artist and psychologist (Crawford, 2010), to explore people’s experience of living with HIV/AIDS (Devine, 2008). Body mapping has since been used to explore sexual health, HIV/AIDS, psychosis, dialysis, migrant worker health and teen pregnancy (Ludlow, 2014; Lys et al., 2018). Its varied utility is one of its many strengths. Body mapping has also been used as a teaching and learning method; as a method of data collection; as occupational therapy; and to raise awareness about an individual’s illness (MacGregor, 2019; Maina et al., 2014).

Women often refrain from discussing giving birth with their family members, including with their husbands and with other females, as it is evidence of sexual intercourse (Chawla, 2016). The perceived shame is a crucial factor behind women’s discomfort in talking about childbirth. This stigma is extended to any female reproductive and sexual health topic, such as menstruation, sex, orgasm, masturbation, pregnancy, abortion and birth, all discussed in hushed tones (Bhatt, 2018; Chawla, 2016; Hardon et al., 2019; Pande et al., 2016; Paul et al., 2017; Santhya et al., 2010). This shame in discussing birth is also a result of the associated body parts that come in play, such as breasts, vagina, vulva and uterus. Language can often be a barrier in communication, when people share experiences that are not part of their routine lives and environment (Sprague, 2016). Lack of access to the vocabulary needed to share their birthing experiences is a struggle. Furthermore, many women may be unaware of procedures, instruments and equipment used during care for labour and childbirth in an obstetric birthing environment, which poses an additional challenge.

I have observed this silence of women and the difficulty in expressing their health care needs and issues through my extensive experience researching women’s reproductive, sexual and maternal health, qualitatively and quantitatively, in India and other countries. This has encouraged me to explore innovative visual arts-based methods of interacting with women over the years, that would break across these barriers and enable women to willingly share their issues, needs, and experiences whilst increasing researcher ability to understand women’s narratives. Body mapping enables the participant and researcher to go beyond language barriers when conducting cross-cultural studies. It eases the difficulty and limitations of verbal expression for the participant, (Coetzee et al., 2019) and makes data collection friendly and artistic, even for participants with limited literacy (MacGregor, 2009; Skop, 2016). Feminist researchers often go beyond usual research methods to amplify women’s voices, using more of the participants’ original quotes to keep the researcher interpretation to a minimum (Sprague, 2016) and finding innovative ways of bringing hidden stories and experiences to life.

Literature suggests that body mapping is successful in understanding embodied experiences of trauma and violence (Gubrium et al., 2016; Sweet & Escalante, 2015) similar to other forms of art-based research methods. Women’s bodies have been studied before the analyses of the representation of pregnant women in paintings (Betterton, 2002); employing drawing to understand women’s experience of postnatal depression (Guillemin & Westall, 2008); and understanding maternal experiences of childbirth and its relation to the experience of violence during childbirth through ‘I Poems’ (Hunter, 2011; Mayra et al., 2022; Montgomery, 2012). Epistemologically, my research is set in critical feminist theory (Orchard, 2017; Sweet & Escalante, 2015) in order to explore women’s oppressed voices about their birth experiences, as a result of power-based imbalances and gender-based inequalities in the structure and culture. This method also draws upon standpoint theory, which ensures that women’s narratives are understood from their standpoint. Finally, it uses intersectionality theory to understand women’s experiences and perspectives from their positionality as shaped from their being at the intersection of gender, sex, socio-economic status, marital status, education level, religion, caste, class, colour, and other physical and socio-demographic characteristics. Paired together, this makes body mapping an excellent novel method for understanding reproductive, sexual and maternal health.

The methods discussed in this paper are from my doctoral research on obstetric violence in India (Mayra et al., 2022). There are very few published studies on how to conduct body mapping, aside from a small number of guidelines that informed my doctoral study (Solomon 2007; Gastaldo et al., 2012). This paper aims to describe birth mapping, an innovative arts-based qualitative method to understand women’s embodied experience of childbirth, which is an adaptation of body mapping.

**Methods**

**Planning a Research Study Using Body Mapping**

I conducted a scoping study in January 2019 in an urban slum and a rural village in the Patna district of Bihar, to understand
the feasibility of birth mapping. The scoping study also helped to develop a semi-structured guide with the advice of local women to aid the exercise. The structure and methods of conducting body mapping evolved through my field work. I started with just a rough outline of a person on a notepad, followed by a body outline to show a few aspects of birth with coloured pens and evolved my process during final data collection to birth mapping where many other arts-based tools were used. Expert consultations with qualitative researchers, midwives, and other people who have been involved in arts-based methods and storytelling, helped to shape the process.

**Ethical Clearance**

Ethical clearance for arts-based research methods is tricky, because several ethical dimensions need to be considered and planned, requiring an understanding of the sensitivity of this method (Orchard, 2017). It requires many interactions and seeking time from participants accordingly. Given that this is a participatory method, it needs participants’ active involvement in their speaking, lying down on the paper for an outline, and participating in showing their birthing story on the map. My study involved recalling sensitive aspects of birthing experiences, so I responded to potential ethical concerns, by securing the contact information of the nearest counsellor in a public hospital. The ethical clearance for my study was provided by the Ethics and Research Governance Board of University of Southampton with reference number 49730. The ethical considerations of consent, confidentiality and anonymity have been addressed in the ethics application which is based on the integral principles of autonomy, beneficence and non-maleficence. Participants provided written or verbal consent in line with the university’s ethical clearance guidelines. Seven of the eight interviews were audio recorded with permission. I requested participant’s consent for their participation in the study, to audio record the interview, and to take pictures while maintaining their anonymity. Every picture was shown to the participant before keeping them for the study. The ones they did not approve of were deleted in front of the participant. Participants selected a pseudo name, which was used to refer to them in the study.

**Conducting the Birth Mapping Exercise**

I conducted the data collection in urban slums and rural villages in Bihar to explore the experiences of birthing at different birth settings, at different levels of care for women who are socio-economically disadvantaged. Bihar is an eastern state of India that supports a population of over a hundred million people. This study was conducted in two districts of Bihar, namely Patna (the state capital) and Muzaffarpur. The slums were selected from multiple sites in Patna, which has several options for tertiary level of care in both public and private hospitals. The rural villages were selected from Maraul block in Muzaffarpur district. I selected these districts based on the maternal mortality ratio, which is very high in Patna and moderately high in Muzaffarpur.

I am a female South Asian researcher with educational qualifications in nursing, midwifery, public health and global health, with almost 15 years experience conducting qualitative health research. I am fluent in the languages in which the research was conducted, barring a few dialects in Bihar that were difficult to understand. I hired a female research assistant (note-taker) from Bihar to assist me with the data collection. The research assistant has experience in qualitative interviewing and is adept in many of the dialects in Bihar, and previously worked with me in Bihar.

Women who have given birth in the last 5 years in Bihar were included in the study. We visited urban slums and rural villages to recruit participants. The eight women who participated in the study are aged between 19 and 32 years. Five of them are not literate while one of them completed education up to the graduate level. Four of them are homemakers, one of them worked in others’ farms, one is a school teacher, and another works as a cleaner in offices and runs a small milk business from home. One of them has one child, three have two, three of them have three and one participant has four children. Most of them were married, except one who was divorced and another who was separated from her husband. We went from door to door to talk to women to seek consent. We planned to interview women regardless of where they have given birth. Between two to five interactions were done with all eight participants. Women gave us their consent and shared background information, and we initiated the birth mapping exercise in the first interaction. The last interaction involved clarifying any queries from the interview that are not properly explored, obtaining women’s approval on the completed birth map, making any final changes on the map, and reading and finalising the birthing story. On average, 3.7 hours were spent with each participant. The shortest duration was 2 hours and the longest was 6 hours.

We brought large sheets of thick white paper which were 7 feet long and 3.5 feet wide in a large poster carrier tube to their homes. We carried coloured sketch pens, markers, crayons, and cut outs of facial expressions as well as small miniature cut outs of people, children, foetus and care providers, medical equipment cut outs such as injections, intravenous fluids, weighing machine and blood transfusions.

We maintained the privacy of the women. The spaces where we conducted the exercise include the bedroom on a wooden plank, the floor of a storage area, the roof, and the backyard of a mud house. Women from the neighbourhood and female family members would often visit to see what we are doing. We explained what we are doing and requested privacy. We often engaged in discussions not relevant to the study, because the women wanted to talk to us. We shared information about our role, research, and about our background with people. In two interviews, the mothers-in-law interrupted the interaction a few times, but we made sure to not work on the map or ask interview questions when we were interrupted. Every participant selected a pseudonym for herself to put on the birth map and to be referred to in the study reports. All the pictures taken during the process avoided
showing participants’ faces and were approved by them. Detailed notes were taken in all the interviews. The steps followed in the process of birth mapping, adapted from the process of body mapping, are described in Box 1.

**Box 1- Instructions for birth mapping**

1. **People involved** - The process of body mapping consists of two researchers: a facilitator and a note taker and a single participant.

   1. **Facilitator** - The person who guides the process of birth mapping, demonstrates on the sheet, draws the outline of participant with consent, answers any questions, and asks the questions while facilitating the process of birth mapping.

   2. **Note taker** - The person who takes thorough notes of the participant responses, prepares the body key, and assists in the process with the art-based supplies.

2. **Index Birth** - The participant chooses an index birth, which will be the focus of the birth map. However, that does not restrict her from sharing about her other birth experiences. The index birth may or may not be her most recent birth.

3. **Assisted Interview** – Throughout the following steps the facilitator asks questions about the participants’ experiences and perceptions about childbirth with detailed probes, as required to elicit and prompt them to add visual details to their birth map.

4. **Outline** - The exercise begins by tracing an outline of the participant’s body on a large sheet of paper. The facilitator requests the participant to lie down on the paper in the position that she gave birth in. If she gave birth in a standing position, we will depict it through vertical arrows. The facilitator lies down to demonstrate.

5. **Colours** - The participant chooses any colour she wants to show the good and bad feelings, skin, clothes, environment etc. and other aspects of the narrative while trying to maintain as close resemblance to the day of birth as possible.

6. **Symbols** - The participant chooses any symbols to signify the experiences (holding hands), people (birth companion; care providers) or emotions (pain; shame; fear; disgust; happiness). She may make pictures or write about her experiences on the map. She can also write quotes from people around her. The facilitator can participate in writing the quotes with the participant, based on participant’s literacy level and any requests for help.

7. **Body Key** - The note taker keeps a record of what the colours and symbols signify which will help to guide them while preparing the birthing story, and future viewers to understand the birth map well.

8. **Birthing body** - The participant is requested to show her experience of giving birth by indicating the experience within the outline of the body that may include emotions and interventions among other aspects of the birth.

9. **Birthing environment** - The participant can show other aspects of the birthing environment outside the outline of the body. This may include the number of people around, who they were, and their role or medical equipment and furniture. This can allow depiction of important aspects of the narratives in the social environment, familial environment, and community, along with the obstetric environment.

10. **Birthing story** - A one-page summary of the birth story reflecting conversations/interactions in the assisted interview is co-created with the participant and is approved by the participant on the last meeting. This is also an analytic outcome of the process which begins in the field with the participant.

11. **Final meeting** - The participant checks the birth map before ending the last interaction to see if anything has been left out that they would like to add. They also share about satisfaction with the interview process. The co-created birthing story is read by or read out to the participant in their language, to obtain their approval on the information sought.

12. **Picture of body map** - The participant is given an option to take pictures of the map and the birthing story.

**Methodological Challenges**

We experienced many challenges over the course of data collection. We faced a high refusal rate to participate in the
study because birth mapping is time consuming. Refusal to participate was higher in rural areas. In one village, every woman we approached refused to participate. This was a small village where we reached out to 12 households. Some of these women did not refuse initially, gave consent, and asked us to come back another day. In our next visit we realised they did not want to participate but could not say no to us, but did not expect us to return. In our subsequent visit we would wait for them to talk to us for hours when they would do their household work after giving us an appointment. Women often did not say no to us but rather ignored us while we tried to talk to them. Often the elders of the family, such as the mother-in-law, would ask us to go away. Women would often be keen to talk to us but could not, because their husband or elders in the family would not approve. This was a pattern which we understood after a series of experiences over a few days.

The cooperation from family is important. Before interviewing one participant, we sat outside the house with the mother-in-law who invited us to tell her more about our work. Women we interviewed had between 1-4 children and were all less than 10 years old. In nuclear families, it was difficult for them to stay with us for long stretches of time. They would often tend to their children’s needs mid-interview while we paused the recorder and waited. We helped to mind the children where possible. Children would often appear in the area of interview because we were working with colours and cut outs, which made them curious. We made away colours and paper to keep them busy. One little boy tried to tear away the map with a nail and tried to prick us with it too. He was taken away by an elder in the family. Husbands were in the house in a few cases, but they usually did not interrupt, except one who kept calling her wife and asking how long it will take us, while Amrita kept confirming that it’s fine for us to talk to her. It was a rare experience for her to talk to someone and she wanted to talk to us more as she said ‘no one ever comes to meet me’.

Most households had pets and rodents. There were goats in Amrita’s household which were taken outside while we did the exercise in the goat-shed after cleaning the goat faeces. Pratima has two rabbits, which appear in her birth map as well. She took the rabbits to the roof when they started chewing the map. In Ria’s household we had to enter the designated room crossing a very tiny room which was an urban cowshed, with two cows. In two houses, Umila’s and Sita’s, there were rats that would come out of holes in the ground or the walls. Twice I had to lie down on the sheet to demonstrate while a rat was very close. These experiences in the process of data collection helped to win the participants’ trust, while testing many of my fears.

Finding space to spread the sheet and work around it was challenging. However, participants were very helpful in making space. It was difficult to encourage them to participate as well because seven out of the eight participants were not used to holding a pen and were concerned they won’t be able to do a good job. They were not used to writing or drawing but over the course of the interactions they became comfortable and actively participated. They also opened up more in the latter interactions, as trust developed and they realised we ourselves did not have many artistic abilities. Together, we found the process of body mapping easier and more engaging as it unfolded.

Women found very little time for themselves away from their domestic chores and outside work, which stretched our working hours. We conducted interviews often in the evening and late night or started before 6 a.m. to get an hour with the participant before their day’s work began. We made sure to make ourselves available at all hours whenever they gave us time. We had a day of thorough disinfection after we realised one of our participants complained of lice infestation who we came in close contact with while creating her birth map.

The research assistant’s role in the exercise was challenging and unpredictable. She participated in taking reflexive notes and notes on interview environment, provided the resources to prepare the map, and also helped in minding the children. At times she also engaged in conversations with the participant’s family so that they would not interrupt the participant and ‘allow her’ to continue interacting with us. This was often requested by the participant herself.

A fair amount of work was done when we were back in our hotel, which included acquiring more cutouts needed for the ongoing exercise. We accomplished some of the colouring work for the last interaction with permission from the participant when we filled in the skin colour, or other parts. The participants selected the colours that we started filling with in her presence at her home. We also worked on the birthing story after listening and re-listening to the audio recordings of the interviews, many of which were indicated to be important aspects of the story by the participants.

The birth maps have a lot of cutouts pasted on them which were fixed with adhesive tape. This made the maps very heavy. The maps are scanned in life size and then printed on a white to make it easier to carry and display, because the paper based maps are prone to wear and tear. These cloth maps are quite helpful for dissemination.

Analysis of Birth Maps

There is a limited corpus of literature about how to analyse body maps. I analysed the birth maps using the theoretical approach of Feminist Relational Discourse Analysis (FRDA) (Mayra et al., 2022). This is done through a 12 step approach which includes analyzing the body maps thematically based on the codes generated while analyzing the other parts of the data set including the audio recording, and the transcripts. This analysis was conducted with the aid of the qualitative data analysis software NVivo 12 (Mayra et al., 2022). This section further describes many other ways of analyzing the birth maps.

Birth Maps and the Birthing Story. Birth maps are a great research tool for dissemination. The visual nature of birth maps ensures that it grabs people’s attention and facilitates a better understanding of the issue. The analysis of the birth maps
began during data collection. The birthing stories and completed maps are outcomes of the study which are both validated by the women. Amrita’s birth map (Figure 1) and her birthing story (Box 2) is one of the eight women’s narratives. The contents of the map can be understood in several layers. Amrita’s map presents many stories of her birthing experience including the interventions she went through; the verbal and physical abuse, neglect and abandonment in care; preference for a male child from her mother-in-law; her willingness to educate her children and raise them equally; lack of water, sanitation and hygiene facilities leading to her relieving in unsanitary conditions; comparison of blood loss in both of her childbirths; extortion; lack of privacy; role of her mother as her birth companion; care providers around childbirth; her lack of agency and decision making power about her body; and absence of choice in family planning. It also shows her relationship with and feelings towards people in the birthing room which depicts the impact of gender, culture and power in the structure of Bihar.

The birthing story is a summary of all the information Amrita shared. It was co-created in Hindi with Amrita, that I translated to English. Both the birth map and birthing story were member-checked and approved by the participants for dissemination, in the form of scientific publications, seminars and for display to generate awareness about how women give birth, to improve the quality and respectfulness in care provision around childbirth globally.

Box 2: Amrita’s birthing story

When I had a boy in my second delivery I wanted to get the operation done. I don’t differentiate between a boy and girl. I don’t believe in having a large family, but in education of both my children, since I didn’t go to school ever. But my guardian (husband) did not agree since my boy got typhoid once. Everyone was very happy when he was born. Everyone in the hospital kept asking for money ‘It’s a boy! You must be happy! Make us happy too!’: Even the cleaner, dai and people in other shift who did not help with my birth asked for money. My husband and in-laws were there too. But my mother in law wasn’t happy I birthed a girl, the first time. No one was playing with her, or holding her or taking her in their lap. That time I got the 1400 rupees immediately through a cheque. I used it for Horlicks, drank milk for a month, bought medicines and gave 300 to ASHA which she had to pay to get the Birth Certificate. It’s been 1.5 years, since my boy is born I did not receive that (Janani Suraksha Yojana) money yet.

I was 18 years old when my girl was born very early in the morning, 4 years back. The ambulance service was very good and came quickly when our ASHA called. I was very happy to see the beautiful ambulance. It was in a government primary health centre near my maternal house. My mother was with me. After going through tremendous pain all night my mother went to call the doctor from her room since the baby was coming out. Doctor got angry, “it’s 4 am, not even morning yet and you all have come to disturb me”. Well, anyone will be angry if you’ll disturb them early morning and not let them sleep. She wasn’t happy when she came to me around 5 a.m. just to catch the baby. The nurse wasn’t happy too since I woke everyone up. They did not want to do my delivery since I had very little blood in my body. They wanted to refer me so I can give birth through the big operation (CS). But I wanted to deliver normally, so my mother started crying that I will die. So, the doctor agreed to do it. I did not get any

Figure 1. Amrita’s birth map.
injections, or fluids, or blood, or medicine. The doctor should have known to give me injection for pain and to have the baby quickly. They must throw the medicines or sell them away in government hospital, why else do they not have it? This is why people don’t trust them and would rather go to private hospital. But I did not ask for anything, I did not talk to anyone. I was angry with everyone and my husband. You’ll of course be angry at your husband when in that situation right? You are there because of him! I was happy he wasn’t in Bihar then and working in Tamil Nadu in a factory.

I was lying down to give birth and holding the hands of two dai’s tightly, to help bear down. It’s the best position to give birth in. If you sit to give birth, you can break your baby’s neck. Everyone says that. I wanted to lift my waist because that was comfortable, but the doctor pushed my body down. My mother on left and the nurse on the right were tightly keeping my legs down. It was hurting a lot, I did not like it. Then the baby came out. The Dai immediately came, took my petticoat to clean the table and I was out of there in 10 minutes, so that other women could come in and give birth. There was just one table. I did not get any cuts, or stiches.

Bihar is dirty! The toilets here were so dirty I did not want to go. My mother took me in the bushes behind the hospital to pass urine. I was in Haryana when I got pregnant and used to go for tests in a big government hospital there. The doctor and nurses in there were very loving and caring. We used to share food and everything. The doctor treated me very well for my pain. Everyone talks to you nicely, spends time with you. But when you are poor, uneducated and young you don’t get respect. I wish the doctor would check me and talk to me politely, ask me how I am, give me a bed and medicines on time and not ask for money for every little thing. Then only I will feel like telling women around me to go there when they give birth.

**Tracing Birthing Postures.** The body maps are analysed by tracing them together, to increase the understanding of the ways in which women give birth in Bihar. All the maps were traced, leaving out all the other aspects of the maps, to focus only on the posture women take or are made to take when they give birth (Figure 2).

Participants’ postures on the map portray home births and hospital births including cesarean section. The bottom left corner of Figure 2 shows a woman’s uncomfortable birthing posture along with the comfortable posture she was not allowed to assume. These traced birthing positions enable an understanding of the diversity in women’s choices, in settings with various degrees of restricted and unrestricted autonomy, be it in an obstetric or home setting. This justifies the need to understand the diversity in women’s choices in all aspects of care to ensure respectful maternity care.

**The Hybrid Birth Map.** The hybrid birth map conveys what could be the worst or best experience for a woman collectively, from the experiences of all the women interviewed from the researcher’s perspective based on women’s narratives (Figure 3). I placed the maps together and analysed women’s experience on different parts of their body for the worst experience that emerged from the participant’s collective experience. This is a subjective process. All the worst experiences on the body, such as on the hands, legs, head, chest, waist and genital area, are put together to create one hybrid birthing body portraying the collective worst experience that a woman could go through during childbirth in Bihar (Figure 3). The birthing environment is an essential part of women’s birthing experience, which was analysed to add to the environment of the hybrid map as well.

**Quality Criteria**

This study followed all the quality criteria for qualitative research i.e., reflexivity, credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985; Korstjens & Moser, 2018). Reflexivity was a part of the process from the conceptualization phase, to check my own biases and preconceptions based on my positionality and standpoint. A colleague conducted a preconception interview with me where we reflected on how these biases may influence the research, the relationship with the participants, and the data collection. The readers will find several points throughout the methods description where this has been embedded. I maintained a diary with reflexive notes throughout the course of this research to document my assumptions, biases, preconceptions and values; and how that influenced the research decisions I made. Credibility was ensured through member-checking of the completed body maps and the birthing stories. Persistent observations of many of the findings could be seen in all forms of data including the field notes, body map, birthing story, transcript and audio recordings, which further added to the credibility. These two, the body map and the birthing story, are the focus of initial stages of analysis, where participants approved both their body maps and birthing stories. This helped to ensure that the information derived from the data was plausible and an accurate representation of participant’s narrative. Co-creation of the body maps and the birthing stories and member-checking of these also makes the data dependable, along with participants’ recommendations on how to make the process of data collection better. An audit trail was maintained with detailed reporting of the research steps and decisions.

Body mapping is a very flexible and adaptive approach, which enabled me to use it to understand women’s embodied experiences of birthing. I have described the process of body mapping, including the planning, implementation, analysis, and the challenges faced in detail, to enable the transferability.
of this research to other contexts with other respondents. A thorough literature review supporting and discussing the findings, presented in the study from India and other parts of the world, were employed to ensure the confirmability of the research findings (Mayra et al., 2022).

Findings

The findings of the study have been presented elsewhere (Mayra et al. 2022) and the process has been described in Box 1. With an aim to share the methods and strengthen them based on the participants’ experience of body mapping, this section presents their: (1) overall satisfaction with birth mapping; and (2) perspectives of the utility of birth mapping.

Participant’s Overall Satisfaction With Birth Mapping

Every participant was asked about their experience of participating in the birth mapping exercise on the last meeting. They were also asked to recommend how we can make the experience better and more satisfactory for the next participant. Women expressed satisfaction about sharing their birthing experiences. Some women mentioned they did not feel the need to talk about giving birth in general because it is not in their culture. However, they felt happy talking about it because they could not share such intimate experiences with anyone else, including with their mother and husband. The trust that developed over the course of interactions was palpable in their narratives as well. Meeting new people and
interacting with them is not part of women’s routine domestic lives. Being able to participate in this exercise was new and exciting for them.

‘I felt this exercise was good! It reminded about my childhood when I used to draw pictures during my school days and did not have a care in the world. I am so happy that you came and talked to me. I feel much closer to you than to my family. I have never talked about my births with anyone. I didn’t feel the need to talk about this with anyone. We don’t have the culture of talking about birth, before or after. I was not able to talk about this with my mother, husband, anybody. I did not know I needed it. It’s after talking to you I realised, I liked to talk about my birth. Even if I wanted to, who would I talk to? So, it’s better to not have those expectations. Had this been my house, I would lock you here and not let you go! (laughs)’ (Urmila)

‘Sita: I liked it!
Interviewer: Have you spoken about these things with anyone before?
Sita: No sister
Interviewer: Do women not talk about birthing?
Sita: No (blushes)
Interviewer: Is that why you liked talking with us?
Sita: Yes. (laughs)’

‘Good! Something new happened. Usually I stay at home, but this is a new experience for me. I got some new information from you. I loved to be a part of this session. I enjoyed it!’ (Sujata)

Participant’s Perspectives of the Utility of Birth Mapping

Participants found the experience of body mapping very interesting and useful, as they shared more about their birthing experience with the exercise than they thought they could recall. When the maps were completed, they felt as though they were watching themselves giving birth. It helped them visualise their embodied experience and understand it better.

‘I feel like I am in X hospital. This is exactly me! At first I did not think I will be able to tell you everything but now that I have told you on this map, it has been drawn exactly how it was. It seems that, this is that X hospital, full of trash! You kept on asking, I went on telling and finally I told you everything.’ (Ria)

‘By doing this, the benefit is that everything came in front of my eyes like I am watching myself giving birth. I was able to recall everything, even things which I thought I had forgotten. I told you everything that happened there. This is better than just conversation. I liked it!’ (Sujata)

‘If we would have talked without the map then all these things would have probably come up but looking at this picture I feel like it’s a dream… that I am living it again because it brought back memories of my birthing experiences. This is good!’ (Paio)

Participants commented on how we could make the birth mapping exercise and experience better for future participating women. Most of them felt we are doing the exercise well and were astonished at how much they could recall because of this exercise. They agreed that birth mapping is a better method than conducting just a verbal interview them. One participant felt we should capture women’s experience in a series of maps to portray the entire experience of birthing, with more detail.

‘Not everything could come out if you would have just spoken with me. It all came out because of (doing the) map.’ (Amrita)

‘This is on paper, one sheet of paper. This is just a few hours of what I went through. You can also consider showing a chain of events… which will come after one another in sequence… like a video!’ (Paio)

Discussion

Birth mapping has many advantages. While I have an extensive experience of interviewing women to understand their birthing experiences, birth mapping has been a revelation to me. Birth mapping ensures that the participants are attentive and focused on the exercise. Women had better recall, than what they expected themselves to remember. Most women were interviewed in 3–4 interactions, but despite the higher number of interactions they remained intrigued and were determined to find time in their busy schedules to continue their participation. Participants were deeply engaged in the process. Indeed, their attentiveness is reflected in the richness of the data collected through their narratives of birth (Lys et al., 2018). The birth maps enabled the conversation to flow from one part of the body to another on the map mirroring the experiences that women felt on their body to their experiences of the birthing environment. It was easier for the participants to articulate their feelings through the map. Specific aspects such as the colours, cut outs, facial expressions, and people the women chose to put on the map, made way for relevant probing questions and gave the women autonomy in choosing what they wished to share. This made it easy for the participants to reflect on certain prompts and their perception of their experience, which was a key rationale for using this method to understand women’s experiences of childbirth. Birth mapping made the data comprehensive and rich.

Participants reported a sense of relief after sharing their experiences of childbirth. Every woman’s birthing story has aspects of disrespect and abuse. The traumatic nature of some of the stories, as highlighted by some of the participants, has been a barrier in sharing and unpacking these situations. Although, many studies report the therapeutic aspect of body
mapping (Boydell et al., 2018; Crawford, 2010; Skop, 2016; Sweet & Escalante, 2015), this study did not aim to apply this method for therapy; it only used this exploratory approach to understand embodied birthing experiences of women. We did not recruit birth trauma survivors. People who have participated in body mapping exercise have often reported a positive experience and have found the experience interesting, entertaining, empowering, helpful and a great opportunity to think reflectively and creatively (Coetzee et al., 2019; Klein & Milner, 2019; Lys, 2018; Orchard, 2017).

There is a dearth of literature on conducting body mapping and particularly the analysis of body maps (Skop, 2016). This paper contributes to both of these areas. Body mapping has proven to be an excellent choice as a data collection method to understand women’s experiences, which are sensitive in nature, such as childbirth, but requires more time and willingness from participants to share in a trusting environment. Conducting this exercise also comes with unique methodological challenges at all stages of research, which have been well described. There will be many challenges that might still arise despite the guidance presented in this paper. That being said, being mindful of the geography, culture and context of the community where the exercise is planned, helps in overcoming many of these challenges, given that the process of body mapping is flexible and allows adaptation in the field.

Studies have shown that arts-based research methods, such as body mapping, tend to minimize power-based imbalances between researcher and participant. It reverses the traditional power dynamics to present the participant as the expert knowledge producer and the researcher as the facilitator and co-creator of the outcome of the arts-based research (Boydell et al., 2018, 2020; Klein & Milner, 2019; Lys, 2018; Sweet and Escalante 2015).

I acknowledge the power-based inequalities in the interview environment between interviewers and participant. Some measures we took to address this included using the language of participants, dressing in traditional wear, and being at the same level in terms of positioning oneself physically. We strived to ensure that any interactions with the participants and their wider communities were respectful. The interviews and the birth mapping exercises were conducted with the utmost sensitivity and participants were made aware that they can revoke consent at any time as well as refuse to answer any particular question. They were informed, and frequently reminded, of their autonomy over the course of the various interactions. A research relationship often puts the researcher in a position of authority, as the creator of knowledge that they seek to discover (Sprague, 2016). Keeping that in mind, I followed the course of discussion of the participant, probing only when required. I noticed many instances that could indicate a positive shift in power balance over the course of the interactions, such as a participant’s comfort about calling us at odd hours, halting the interview to attend to the household chores when required and their frankness, humour, honesty and openness in sharing sensitive details of their experience of birthing and other aspects of their life. The trust was growing and was seen more strongly in subsequent interactions.

This study employed innovative arts-based methods of analysis which included: (1) the co-creation of the birth maps and birthing stories; (2) a thematic analysis of the body maps in line with the codes generated for the interview transcript; (3) the tracing of body outlines to portray the variations in birthing postures; and (4) creating the hybrid maps to understand the collective worst and best experiences of birthing. Studies that have analysed body maps are very limited (Skop, 2016) even though the maps are very data dense in nature (Orchard, 2017). Orchard T, in her book on ethics of body mapping, suggests the ‘axial embodiment’ approach of analysis that looks into the different layers at vertical and horizontal analytic levels of the maps to capture the complex embodied experiences of the participants (Orchard, 2017). For the birth maps, this will include understanding the different stories in each of the maps, the relations of the participant with the people and structures shown in the map, as presented in Amrita’s map. The meaning of the textual and symbolic imagery in the maps as well as the similarities and dissimilarities between the maps is important too. Another study employed a collaborative approach of making meaning of a participant’s experience, followed by a qualitative content analysis, a method emulated by this study (Sweet & Escalante, 2015). Rose (2016) suggests analysis of visual methodologies, which involves steps to focus on the semiology, composition, and discourse.

Body mapping is an economic and flexible method (Devine, 2008) that requires relatively low cost supplies for the artwork (Gubrium et al., 2016). Although commonly done in 3–4 day group workshops, this study was done on a one-to-one basis. This worked better for the participants with their availability being spread out during the day with quite a bit of distance between houses that would prove difficult to recruit participants, with the limited mobility of women in general in Bihar. Above all, body mapping caters to the need for newer approaches to better understand the context, which is a limitation with the current of public health interventions (Edwards & di Ruggiero, 2011).

Limitations

Birth mapping with individual participants can be time consuming with 2–4 interactions per respondent. It also increases travel time for the facilitators and requires facilitator’s flexibility around the participants’ availability. This could mean being available any time of the day, starting very early in the morning to very late at night. The rate of refusal to participate could be very high because the facilitators seek 3–5 hours of participants’ time in advance over the course of few days while taking consent. There is some evidence of the impact of childhood sexual abuse on women’s perception of respect, disrespect and abuse during childbirth. It was not possible to explore this driver of obstetric violence given the already sensitive nature of the study. We added an inclusion criterion for women who
have given birth in the last 5 years, but later realized that it was not necessary as number of years was not a barrier to their memory of their birthing experiences. Finally, the smaller sample size makes it less appealing in comparison to dominant research methods (Boydell et al., 2018), as data saturation can not be established (Klein & Milner, 2019). However, this is a strength of my study, because the sample size allows for a deeper dive into the complexity of the phenomena being studied. These aspects can enhance and enrich similar research when conducted in future.

Conclusion
Birth mapping is a useful method to understand sensitive topics around women’s reproductive and sexual health. This is usually difficult to explore due to women’s strong cultural silence around these issues as a result of generations of suppression and a result of deep rooted patriarchy, which can add value to other qualitative and quantitative methods of data collection and analysis. Birth mapping can be used in many ways, such as research, case discussion and understanding for midwifery, medical and nursing students in their pre-service education, so they understand the context of women and their experiences holistically before practicing care giving. Birth maps from this study are potential resources for education on respectful maternity care. This approach is a novel way to ensure women’s voices are shared and included, while allowing the other stakeholders, including researchers, care givers and policy makers, to listen and learn.

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ORCID iD
Kaveri Mayra https://orcid.org/0000-0001-8395-0738

Notes
1. Dai is a traditional untrained midwife in India.
2. ASHA is Accredited Social Health Activist, a workforce of female voluntary workers who enable many policies and programs at the community level.

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