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# Birthing parent and companion verbal reactions following interactions with inpatient postpartum health care team members: an observational study using naturalistic filming

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## Abstract

**Background** Respectful, equitable, and supportive health care team interactions with patients and their companions are a key part of quality health care services. Despite the importance of communication and other aspects of engagement during inpatient postpartum care, little is known about how care is experienced during this period from families' perspectives.

**Methods** This study collected video and audio data with 15 birthing families ( $n=9$  English-speaking and  $n=6$  Spanish-speaking) and their health care team members during inpatient postpartum care in a southeastern United States academic medical center. This analysis quantifies health care team member presence in family hospital rooms, assesses linguistic appropriateness of health care team member verbal communication, and describes birthing parent and companion verbal reactions to health care team member interactions. A behavioral taxonomy was applied to identify these codes in the 12 h prior to hospital discharge. Additionally, we transcribed the birthing parent and companion verbal reactions for 10-minutes each time the health care team member departed their room. This content was inductively coded to identify topics and develop themes.

**Results** A total of 160 h of video and audio data were coded across 15 participating families for this analysis. There were 19.9 h of missing data in the 12 h prior to hospital discharge due to equipment being turned off across five participants. At least one health care team member was present in the postnatal unit rooms within the observation period in 200 instances (median 13 times, range 5 to 19 times per participating family). Communication with Spanish-speaking birthing parents was linguistically appropriate for between 20.0% and 75.0% of interactions. Following health care team member presence, birthing parent and companion reactions were indeterminate 1 time, no verbal reaction 107 times, positive 25 times, confused 38 times, and negative 52 times. Many parents expressed more than one reaction. Reaction topics included clarity of information provided, postpartum pain management, hospital discharge coordination, health care team member conduct, and access to supplies.

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**Conclusion** There are strengths in postpartum patient engagement as well as areas for health care team improvement. More appropriate communication including setting of clearer expectations surrounding various aspects of services on the postnatal unit may improve patient experiences. As a part of this improved quality of inpatient postpartum care, consistent utilization of interpretation services could decrease patient confusion, enable shared decision-making, and promote positive patient-provider relationships.

**Keywords** Postpartum, Reactions, Health care team, Communication, Spanish-speaking, Hospital, Observational

## Background

Respectful, equitable, and supportive health care is critical to health outcomes and as part of a therapeutic patient-provider relationship. The Institute of Medicine recommends that health care should be patient-centered to respect and address each patient's needs and preferences [1]. The American College of Obstetrics and Gynecology (ACOG) recommends communication among health care team members, birthing parents, and their companions as an important part of obstetric services [2]. This involves clear communication to achieve shared decision-making [3,4]. Further, linguistic appropriateness is an essential part of quality communication [5] and these services are mandated by Title IV of the Civil Rights Act [6]. However, indicated interpretation services are not always utilized during inpatient postpartum care [7].

Each interaction during inpatient postpartum care is important. For example, previous research has shown that postpartum patients are more likely to meet their health goals, such as their desired breastfeeding outcomes, when they feel welcomed and supported on the postnatal unit [8]. As such, there is a need to further investigate health care team member interactions with patients and their companions. Family verbalizations once health care team members leave the postnatal unit room offer a window into positive, confused, or negative communication and other aspects of health care services. Better understanding birthing parent and companion experiences during the early postpartum period is important particularly because this period is characterized by limited, fragmented sleep, extensive patient education, and maternal and infant discharge care coordination.

Filmed health care team-patient interactions provide rich and nuanced data for both quantitative and qualitative analysis. [e.g.,9] Filming during inpatient postpartum care has previously been used to analyze patient behaviors, such as breastfeeding practices and maternal-infant sleep patterns [10]. Prior research analyzing patient perceptions of postpartum care has indicated that health care team communication gaps with patients and families, including insensitive staff attitudes and behavior, insufficient attention to the mother, and inconsistent or incorrect information, contribute to negative patient experiences [11]. The purpose of this research was to contribute new knowledge on quality inpatient

postpartum care. We aimed to identify (1) health care team member presence in family hospital rooms in the 12 h prior to hospital discharge, (2) linguistic appropriateness of the health care team member verbal communication within this period, and (3) birthing parent and companion verbal reactions to the interactions. The reactions were categorized and described as detailed below.

## Methods

The research occurred as part of a large mixed-methods study, the Postnatal Patient Safety Learning Lab, at an academic medical center in the southeastern United States. The study was reviewed and approved by the University of North Carolina at Chapel Hill Biomedical Institutional Review Board (#19-1900). This work adhered to the Declaration of Helsinki. Video and audio data were collected within the postnatal unit rooms of participating families from August to December 2020. During this time, COVID-19 regulations were in place. These regulations included restriction to one companion being permitted within each postnatal unit room. This research was not a clinical trial (Clinical trial number: not applicable).

Potential participants were approached within their postnatal unit rooms at least 6 h after childbirth. A bilingual research assistant provided verbal and written material to inform birthing parent and companion considerations for their potential study participation. Those interested were enrolled by providing written informed consent. The parents provided written assent for their infant participation. The inclusion criteria were birthing parent at least 18 years of age, fluency in English or Spanish, a liveborn singleton who was rooming-in, and access to a phone or computer for post-discharge completion of a questionnaire and interview. The exclusion criteria were maternal incarceration at the time of delivery, planning for adoption, or positive COVID-19 result (including the companion or infant). Participating families received a \$100 gift card following their inpatient study participation.

Following enrollment, the research assistant set up video and audio recording equipment in participants' postnatal rooms, as we have described [12]. After setting up the equipment, the research assistant instructed participants in their preferred language on how to turn off and turn back on the equipment as desired (e.g., turn

off recording for privacy). The instructions were provided verbally, through written material, and through demonstration. Additionally, laminated written study material was provided on top of the recording equipment to instruct any adult how to turn it off/on, which they could do for any reason. In coordination with participants, the research assistant turned on the recording equipment to start data collection. The video and audio data were collected until participants were discharged from the hospital unless the birthing parent, companion, or a health care team member turned equipment off earlier. A sign was posted on the outside of the participant's door that the research recording was in progress so that all individuals were aware of the study before entering. Video data had a running timestamp embedded. The files were downloaded and stored on a secure server for coding.

Video coding was conducted by a multidisciplinary research team using a study-developed behavioral taxonomy, with variables, codes, definitions, examples, and clarifying information. The end of the video recordings were watched to identify the time of hospital discharge. Then a behavioral taxonomy was applied to identify codes in the 12 h prior to hospital discharge. Data were coded as occurring or not in 5-minute increments for a variety of variables including health care team member presence, speaking, and linguistic appropriateness. The definition of health care team members for this study included clinicians, interpreters, and non-medical staff such as newborn photographers and nutrition services. Linguistically appropriate communication was coded as described previously [12]. For Spanish-speaking participants, verbal communication was considered linguistically appropriate when a health care team member spoke Spanish fluently as determined by a native Spanish-speaking research team member. Specifically, linguistically appropriate Spanish communication included each 5-minute period in which a health care team member spoke in sentences in Spanish without errors with a Spanish-speaking birthing parent or when interpretation services were utilized. The communication was considered linguistically inappropriate during any 5-minute coding increment in which a health care team member spoke English with a Spanish-speaking birthing parent, a health care team member spoke Spanish with a Spanish-speaking parent with words or short phrases only, a health care team member spoke in sentences in Spanish with errors with a Spanish-speaking birthing parent, or a companion interpreted information from a health care team member from English to Spanish for a Spanish-speaking birthing parent.

Following each time one or more health care team members were coded as present in the postnatal unit room, we transcribed the audio and then coded the type and content of verbal reactions by the birthing parent

and/or companion. We coded birthing parent and companion verbal reactions over two 5-minute increments, i.e., 10 min, after health care team members left the room to identify birthing parent and companion reactions to each of those interactions. The transcribed reactions were organized in a spreadsheet with participant quotes.

We categorized the reactions as positive, confused, and/or negative. Positive reactions were verbalizations of satisfaction with care provided or information on the birthing parent or infant's health status. These included indications of contentment and/or excitement, such as the birthing parent telling their companion "I was really happy to hear that!" or "They're really sweet here." (V04). Confused reactions included lack of clarity following communication with health care team members, such as stating "¿Qué dijeron?" ("What did they say?") (V03) or "What are they talking about?" (V05). Negative reactions were verbal expressions of distress or dissatisfaction, such as "It's really frustrating." (V04) or "That really upsets me." (V05). If multiple reaction types (e.g., confused and negative) occurred during the same ten-minute period, each reaction type was coded. If a health care team member entered the room within the ten-minute reaction coding period, reactions were coded for both the initial ten-minutes following the previous health care team member's departure as well as the ten minutes following their next exit. If there was no verbal reaction within the ten-minute time frame, this was coded as "no reaction."

After the reaction types were identified, the content of keywords and phrases in the transcriptions were inductively coded. In vivo coding used words from the data as codes, such as "pain." Codes also described attributes of the data, such as "health care team conduct." Inductive coding entailed repeated review of quotes, with memos and comparisons throughout the process for refinement. Coders met weekly as a group to discuss both the behavioral coding and thematic content analysis to resolve any discrepancies by consensus. The coded data were also checked for accuracy, with any missing information or inconsistencies corrected by review of the video-audio recordings.

## Results

Sixteen birthing parents, of 102 individuals approached who met inclusion criteria, consented to participate. One enrolled family was not filmed due to a technical error. All 15 participating families included a companion. Six birthing parents self-identified as Hispanic and Spanish-speaking, five identified as non-Hispanic Black, three identified as non-Hispanic white, and one identified as non-Hispanic multi-race, as shown in Table 1. Five participants had a total of 19.9 h of missing data within the 12-hours before discharge (range 1.1 h to 5.7 h), with complete data for this period with the other ten

**Table 1** Birthing parent-infant participant characteristics ( $N=15$  couplets)

	<i>n</i> (%)
<b>Birthing parent ethnicity and race</b>	
Hispanic white	6 (40)
Non-Hispanic Black	5 (33)
Non-Hispanic white	3 (20)
Non-Hispanic multi-race	1 (7)
<b>Birthing parent preferred language</b>	
English	9 (60)
Spanish	6 (40)
<b>Birthing parent age</b>	
18–24 years old	2 (13)
25–34 years old	9 (60)
35 years or older	4 (27)
<b>Parity</b>	
Primiparas	7 (47)
Multiparous	8 (53)
<b>Infant's gestational age at delivery</b>	
35+0 to 36+6 weeks	2 (13)
37+0 to 39+6 weeks	10 (67)
40 weeks or more	3 (20)
<b>Mode of birth</b>	
Cesarean section	8 (53)
Vaginal	7 (47)
<b>Couplet length of stay in postpartum unit</b>	
24 h or less	1 (7)
25–48 h	3 (20)
49–72 h	10 (67)
73 h or more	1 (7)
<b>Method of infant feeding in postpartum unit</b>	
Human milk and formula	8 (53)
Human milk	6 (40)
Formula	1 (7)

participants. Participants were discharged between 12 pm to 9 pm.

### Health care team member presence, communication, and linguistically appropriate services

There were 200 times that at least one health care team member was present in the postnatal unit room within the 12 h before hospital discharge (median 13, range 5 to 19 times). Following one of the 200 recorded health care team-patient interactions, coders were not able to determine what the birthing parent and companion said, so this verbal reaction was coded as indeterminate and excluded. The remaining 199 periods after health care team member(s) left the families' rooms were analyzed. The pattern of health care team member presence was similar between the English- and Spanish-speaking participants. Among the nine English-speaking participants, health care team members were present a median of 13 times (range 5 to 19 times), including

verbal communication a median of 12 times (range 3 to 19 times). Among the six Spanish-speaking participants, health care team members were present a median of 13 times (range 12 to 15 times), including verbal communication a median of 12.5 times (range 9 to 16 times). Health care team communication with Spanish-speaking birthing parents was linguistically appropriate between 20.0 and 75.0% of interactions per participating family.

### Birthing parent and companion verbal reactions

Out of the 199 coded time segments, birthing parents and companions did not verbalize a reaction in 107 instances (53.8%). These periods included the birthing parent and companion being asleep, watching TV, or talking about topics not related to the health care team member interaction. Among the 92 periods with a reaction, there were 25 instances including a positive reaction (12.6%), 38 instances including a confused reaction (19.1%), and 52 instances including a negative reaction (26.1%). Twenty-three of these periods (11.6%) had a combination of reactions (i.e., positive and confused, positive and negative, negative and confused). Among the Spanish-speaking participants, 11 of the 17 (64.7%) confused reactions followed communication that was not linguistically appropriate. For example, after the health care team member departed, the birthing parent asked the companion “¿Qué dijeron?” (“What did they say?”) (V03), the companion asked the birthing parent “¿Qué pasa?” (“What happened?”) (V07), and in one instance, the companion stated directly to a camera that the interpreter was not translating well: “La traductor que acaba de venir no está traduciendo bien.” (“The interpreter who came here isn't interpreting well.”) (V14).

### Topics of birthing parent and companion verbal reactions

When the birthing parents and companions verbalized positive, confused, or negative reactions, these addressed the topics of clarity of information provided ( $n=23$ ), postpartum pain management ( $n=14$ ), hospital discharge coordination ( $n=14$ ), health care team member conduct ( $n=12$ ), and access to supplies ( $n=11$ ). These topic categories are summarized in Tables 2 and 3 and described in the following sections.

### Clarity of information provided

Of the 23 reactions related to clarity of information provided, five included a positive reaction, 15 included a confused reaction, and 11 included a negative reaction. There were positive reactions after clinicians shared favorable test results. For example, after learning their infant's blood test results indicated that they did not have jaundice, one companion responded, “Oh yeah!” (V04). Also, the birthing parent expressed enthusiasm that the

**Table 2** Three most common topics of birthing parent and companion verbal reactions with representative quotes

Reaction type and topics	Representative quotes
<b>Positive reactions</b>	
Clarity of information provided	"They got [the infant's] blood and it came back and it looks like she doesn't have any jaundice, and they're probably going to clear us to go home" (V04)
Health care team member conduct	"[Health care team member's name] is perfect, she's perfect." (V05)
Access to supplies	"We about to be eatin' good tonight. The hospital is sending us home with a baked ziti." (V01)
<b>Confused reactions</b>	
Clarity of information provided	"¿Y esto qué es, para qué es esto? ("And what is this, what is this for?") (V03)
Hospital discharge coordination	"I'm not actually sure exactly what time...I think they have to make sure I have a car seat and stuff...it might have to be brung up here before I leave with her...I don't know." (V08)
Health care team member conduct	"You gotta make sure...you announce yourself, 'cause I had no idea who that was coming in, I was like ok hey, are you the new nurse or what?...You gotta give your name and what your role is, 'cause otherwise we have no idea." (V09)
<b>Negative reactions</b>	
Clarity of information provided	"No one even discussed the results with me so I need to speak with the nurse." (V05)
Postpartum pain management	"Me duele la cabeza siento que se me cierran los ojos." ("My head hurts that I feel like my eyes are closing.") (V07)
Health care team member conduct	"Yesterday I got mad because [Name] informed me that 2 to 4 is quiet time on the floor, that means nobody supposed to come in...two people came in here." (V05)

**Table 3** Most common topics by birthing parent and companion verbal reaction type

Topics	Number of times topics addressed as part of verbal reactions	Topic addressed included a positive reaction	Topic addressed included a confused reaction	Topic addressed included a negative reaction
Postpartum pain management	14	2	2	14
Access to supplies	11	6	2	7
Hospital discharge coordination	14	1	8	8
Clarity of information provided	23	5	15	11
Health care team member conduct	12	5	5	9

Note Verbal reactions could be coded more than one way, so the total reaction types are more than the number of times a topic was addressed

nurse said their cesarean section incision looked good: "[The nurse] was like that's one of the best, like cleanest, smallest, incisions...so I was really happy to hear that!" (V04).

Fifteen of the total 38 periods with confused reactions related to lack of clarity related to health information provided. For example, one birthing parent asked their companion, "Wait, so what is different with the Tucks pads?" (V05). The birthing parent also expressed lack of clarity regarding their infant's test results. In a phone call to a family member, they stated:

*"A tech just came in and said that she was here to get [baby's] bili[rubin levels], and I was like they did his bili yesterday, and um, she was like well they're doin' it again to see if it got better. And I'm like, what? No one even discussed the results with me so I need to speak with the nurse before you do this, and then... she's going to get the nurse now. So I was just wondering if you could be on the phone while they do it... or while she comes in and explains in case there's anything I'm missing?" (V05).*

Another participant similarly spoke of lack of clarity with test results: "They ain't say nothin yet about the test, only thing they told me earlier was that it improved a little but they didn't say anything else." (V06). Health information was also unclear. After the health care team member left the room, one companion asked the birthing parent "What's the difference between colostrum, I mean I know colostrum is totally different, but...why do we make colostrum...versus milk right away?" to which the birthing parent responded, "I don't remember." (V09). Birthing parents and companions expressed negative reactions related to health care decision making: one family was frustrated that the health care team member continued to ask about infant circumcision despite the birthing parent previously stating they do not want it, "¡Ya nos preguntaron muchas veces [explicit] no entienden que no [queremos]!" ("They already asked us so many times [explicit] they don't understand that [we] don't want it!") (V15).

#### Postpartum pain management

Of the 14 pain-related reactions, two included a positive reaction, two included a confused reaction, and 14

included a negative reaction. For example, one positive reaction occurred after a lactation consultant provided breastfeeding education and support, when a birthing parent who had previously experienced pain while breastfeeding noted to their companion that the pain while breastfeeding improved: "I would say like a lot better, not night and day, but better." (V04). Many reactions related to the birthing parent's postpartum pain management included confused or negative responses. One birthing parent, who described experiencing burning pain due to vaginal tearing, notified multiple clinicians of her pain and expressed frustration with the amount of time it took to be offered a spray medication: "Why the hell did they not tell me about that spray until now?...Do you know how much pain I've been in?" (V05). Another birthing parent was frustrated by receiving conflicting information about the frequency that they could receive pain medication on the postnatal unit: "Yeah, I'm confused about the medication...consistency would also be helpful, if you're watching" (V09). Following conflicting information provided by different health care team members, the participant stated that they were unsure if the medication could be taken every four or six hours and further wondered if it was safe to receive the medication on the shorter time interval.

### **Hospital discharge coordination**

A common source of confused and negative reactions for birthing parents and companions was discharge communication and timing. Of 14 reactions related to discharge, one included a positive reaction, eight included a confused reaction, and eight included a negative reaction. The positive reaction occurred when a birthing parent expressed they were happy to go home (V16). Families expressed confused and negative reactions related to lack of clarity of discharge timing: one birthing parent said that because they were not informed of a specific discharge time, that meant that they would not be discharged that day (V03), another family expressed frustration that the discharge process had taken so long that they were hungry and missed the window for ordering food (V04), and multiple families expressed stress about not knowing the discharge time so that they could pack their belongings before the discharge cart/transportation arrived (V10, V14).

One multiparous birthing parent and their companion discussed their previous experience when interpreting their hospital discharge timing. The companion noted, "That's what I'm tryna figure out, like...the timing...last time you got discharged, they told you your discharge time and then you didn't get outta here until 2, 3 hours later after that time of discharge." (V11).

### **Health care team member conduct**

Of 12 reactions related to health care team member conduct, five included a positive reaction, five included a confused reaction, and nine included a negative reaction. Several families expressed satisfaction and praise for health care team member's conduct. For example, following an interaction when a nurse checked the birthing parent's cesarean section incision, they reflected, "[The nurse] said so it looks like they did a really clean job so I was really happy to hear that!" and "They're really sweet here." (V04). In another case, a companion looked directly into the camera and applauded their clinician: "[Health care team member name] is perfect, she's perfect!" (V05).

Negative birthing parent and companion reactions often focused on the timing of health care team members' visits to the postnatal room. Regarding being discharged, one companion commented, "At least we're not gonna have someone intrude on us every 30 minutes...and you can rest." (V04). Another family was frustrated by the timing of the visit by the lactation consultant because the birthing parent had not been able to eat breakfast yet. The birthing parent expressed concern to the companion: "I was about to turn all the way up on the lactation consultant...I was like if I have to say this one more time. I should only have to say it once, I wanna eat right now!" (V05). Other negative reactions surrounded knowledge of who was entering their room and why they had entered. One birthing parent commented, "You gotta make sure...you announce yourself, 'cause I had no idea who that was coming in, I was like ok hey, are you the new nurse or what?...you gotta give your name and what your role is, 'cause otherwise we have no idea." (V09).

### **Access to supplies**

Of 11 reactions related to access to supplies, six included a positive reaction, two included a confused reaction, and seven included a negative reaction. Multiple birthing parents and companions expressed gratitude for the hospital providing a meal to take home. One family had a positive reaction to the delivery of the packaged meal because they saw it as a signal that they would be discharged soon. Birthing parents also expressed confusion about what kind of supplies the hospital could provide. For example, after a health care team member left the room, one birthing parent said "¿Será que yo pueda ir para abajo...a comprar unas toallas?" ("Could I go downstairs...to buy some pads?") (V07), wondering if they had to go to the pharmacy to buy pads instead of receiving them from the hospital. Another birthing parent was not sure if the hospital would provide them with more infant formula, telling the companion "Dilen nomas si tiene extra." ("Ask if they have extra.") (V10).



Three of the six Spanish-speaking families discussed not receiving the supplies or products they requested, and two Spanish-speaking families indicated that they requested supplies multiple times. One birthing parent asked a transport staff member to remind a nurse that they had requested formula (V07) and another birthing parent asked the companion to leave the room to ask someone about the formula they had requested, stating “Preguntale a la muchacha...se le olvido.” (“Ask the lady... they forgot.”) (V10). English-speaking families also experienced variation in the timing of receiving requested supplies, with one birthing parent noting that some members of the health care team were more likely to bring them the supplies than others: “See that’s why I like when techs come in ‘cause I ask them for the errand stuff the nurses forget ‘cause they too busy.” (V05). The time of supply receipt also impacted birthing parent stress and infant care. One birthing parent spoke out loud to herself about delaying breastfeeding while waiting for a new pair of underwear, after having bled through her previous underwear and there was not another pair stocked in the room. The birthing parent became increasingly agitated as they waited for the new underwear, and as soon as the supply was received and put on, the birthing parent apologized to the infant: “My baby girl hungry...sorry it took so long...mama was tryna get some underwear...sorry baby girl.” (V08).

## Discussion

Health care team members were frequently present in inpatient postpartum rooms in the 12 h leading to hospital discharge. The clinicians verbally communicated with the birthing parent and/or their companion most of these times, but not every time. We found similar patterns of health care team member presence and verbal communication between the English- and Spanish-speaking participants. The types of reactions verbally expressed by the groups of families after the staff departed were also similar. Overall and between the groups, there were fewer positive reactions than there were confused or negative reactions. Effective communication during clinical care is an important part of ethical practice. Meaningful communication can also decrease maternal stress and improve adherence to postpartum care plans, allowing for increased continuity and more supportive care that improves physical and psychological well-being [13]. Due to the sensitive nature of the early postpartum period, it is critical to improve the support provided through inpatient postpartum care.

This study employed an innovative approach to collect data and analyze aspects of quality inpatient postpartum care and patient-companion experiences. Naturalistic, continuous filming allowed for a generally unfiltered view of health care services and family reactions, building on

previous work that has utilized interviewing and questionnaires to obtain data about patient satisfaction [14]. In our study, birthing parents and their companions verbally reacted to health care team interactions 46.2% of the time, indicating that many interactions with health care team members were notable enough to families for comment. The verbal reactions highlighted both aspects of services that went well and gaps in care. Several positive reactions were temporally related to favorable health outcomes for the birthing parent or infant. Additionally, when health care team members demonstrated sensitivity to the birthing parent and companion’s needs and addressed them, the families expressed gratitude and praise for the care received. A key gap was lack of consistent interpretation service utilization during health care team communication with Spanish-speaking postpartum families, corroborating previous research conducted through electronic medical record chart review on a postnatal unit [7]. These findings are surprising given the requirement that health care providers who are recipients of federal funding “take reasonable steps to ensure that people with Limited English Proficiency (LEP) have meaningful access to their programs and services.” per Title IV of the Civil Rights Act [6].

Almost two thirds (64.7%) of the confused reactions among Spanish-speaking families followed lack of linguistically appropriate communication. There is an urgent need to improve access to more linguistically appropriate care to advance maternal health equity, including by increasing access to qualified medical interpreters. Previous studies have found that racial/ethnic minoritized patients experience poorer quality communication than white patients during prenatal care and during the birth hospitalization [15]. Prior research has also shown that language barriers between maternity patients and health care teams, such as lack of interpretation service utilization, “yield worse quality of care, experience of care, and health outcomes.” [16] Individuals with Limited English Proficiency (LEP) often experience intersectional discrimination related to language, xenophobia, and racism, and these populations also experience more obstetric trauma and mistreatment in childbirth [16]. To promote linguistically appropriate care, it is recommended to assess patients’ language needs, consistently utilize interpretation services as indicated and support policies that promote meaningful communication in patients’ preferred languages [16].

Regarding the clarity of information provided and health care team member conduct, there are a few important takeaways. It is important for health care team members to use precise language and offer comprehensible information to the birthing parent and companion. If a test result is only described as “better” by a clinician, this can be confusing for the birthing parent and

companion. The threshold of concern may not be clear nor is indication of repeated assessment. Harvey et al. found in 2023 that rushed or unclear information provision led to dissatisfaction and confusion among patients [17]. As a part of respectful care, it is also important for health care team members to share their name, role, and purpose when entering patients' rooms. Further, birthing parents and companions can feel frustrated when health care team members enter the room frequently or when health care team members do not honor families' needs, such as a birthing parent eating. More person-focused, appropriate communication may promote patient safety and well-being.

The verbal reactions related to maternal postpartum pain highlight a need to more proactively address birthing parents' postpartum pain and provide consistent information about pain management options and coping strategies. Previous research by Olsen et al. in 2022 linked higher postpartum pain scores with greater anxiety in the postpartum period [18], and our findings offer insight into reasons for maternal distress regarding their postpartum pain. We found that birthing parents understandably experience negative emotions when they have stated to their health care team members that they are in pain and do not receive timely access to medication or other pain management. Leziak et al. found in 2021 that open dialogue with the care team surrounding pain medication is associated with positive experiences surrounding postpartum pain management [19]. In addition to open-ended questions, we found it is important for birthing parents to be informed of what medication they can take and the frequency they can take that medication in a consistent manner across their health care team.

Birthing parent and companion verbal reactions related to access to supplies, discharge coordination, and health care team member conduct highlight a need for improved transparency and timely care. Prior research by McCarter et al. in 2022 reported that limited nursing time and conflicting information contribute to barriers to postpartum education [20], and our findings corroborate this and identify further consequences of these factors. The postnatal unit is also an unpredictable setting in which a health care team member may plan to visit a birthing parent's room at a certain time but be pulled into a more pressing situation. As such, it is understandable that it can be difficult to predict when the lactation consultant will be able to visit the room or the timing of discharge transport chair arrival, for example. However, it is important to clearly communicate expectations with birthing parents and their companions.

Numerous organizations related to maternity care including the American College of Obstetricians and Gynecologists, the American College of Nurse-Midwives, and the Society for Maternal-Fetal medicine recommend

“treating all childbearing women with kindness, respect, dignity, and cultural sensitivity throughout their maternity care experiences.provid[ing] supportive resources such as education.[and] balancing maternal-child safety and well-being with the woman's needs and desires.” [21] They also recommend involving the birthing parent's family as applicable, and communicating in a “patient-centered, timely, direct, and specific” manner [21]. Family verbal reactions following health care team member interactions in their postnatal unit rooms provides valuable new insight into contributors to postpartum hospital discharge readiness, patient satisfaction, and safety.

### Strengths and limitations

In this research study, birthing parents, companions, and their health care team members knew they were being filmed. Although their awareness may have modified behavior, practices were filmed over an extended period and reflect the healthcare system structure. Individuals can only perform to the best of their training and capacity, including when being evaluated. Study strengths include participation of both English-speaking and Spanish-speaking families. In this exploratory research, we did not test for potential between group differences in the proportion of reactions and reaction type, given the small sample sizes. However, birthing parent and companion feelings following interactions with health care team members could be considered as an indicator of quality care in future work. This data collection could be explored through a variety of feasible and acceptable methods, such as reporting of positive, confused, and negative experiences (selecting all that apply) through digital tools. If such data were routinely and universally collected, then disaggregation of patient experiences by maternal-infant characteristics, health care team members, and system structure would be possible. In this study, cameras were turned off in some participant rooms. This reflects autonomy people had as research participants. The data are likely not missing at random, so the results are limited by the interactions and behaviors not collected. Further, variation in length of stay and time of discharge could have resulted in different interactions during the 12 h preceding hospital discharge, including differences in the patterns of health care team presence. Additionally, there was one instance where coders were unable to understand what was said by the birthing parent and companion because of technical limitations with the audio data. Finally, some findings may have been influenced by COVID-19-related staffing challenges and visitor restrictions. Inpatient postpartum health care team practices and patient experiences are likely different within the study setting and across sites over time. Birthing parent and companion experiences



warrant attention and ongoing quality improvement as part of a cycle toward respectful maternity care [22].

## Conclusion

Treating patients with respect and communicating in linguistically appropriate ways are key aspects of quality inpatient postpartum care. Birthing parents and their companions deserve to be well-informed about their care and equipped for a safe hospital discharge transition. There are areas for improvement in interactions between health care team members and their patients in postnatal clinical settings. Clarity of information, postpartum pain management, hospital discharge coordination, health care team member conduct, and access to supplies were commonly brought up by postpartum patients and their companions. Accounts indicated both quality practices and opportunities for clinical improvement. Assessing patient experiences during their journeys through healthcare services may be a helpful way to identify and improve quality care to align with their needs.

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## Author contributions

M.M. contributed to conceptualization, formal analysis, and writing both the original draft and writing with review and editing. N.S.S. contributed to conceptualization, formal analysis, writing-original draft, and writing-review and editing. M.P.M. contributed to conceptualization, formal analysis, and writing-review and editing. A.M.S. contributed to conceptualization, funding acquisition, resources, project administration, supervision, and writing-review and editing. K.P.T. contributed to conceptualization, funding acquisition, investigation, methodology development, project administration, resources, supervision, formal analysis, validation, writing-original, and writing-review and editing. All authors read and approved the final manuscript.

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## Data availability

The dataset analyzed during the current study is available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

This work was reviewed by the University of North Carolina at Chapel Hill Biomedical Review Board (#19-1900) and approved in accordance with the Collaborative Institutional Training Initiative. This work adhered to the Declaration of Helsinki. Written, informed consent was conducted in person.

### Consent for publication

We have obtained written informed consent to publish these data as described in our institutional review board document.

### Clinical trial number

Not applicable.

### Competing interests

Drs. Tully and Stuebe are inventors on a patented medical device. The University of North Carolina at Chapel Hill intellectual property is licensed.

The device is not referenced or otherwise related to the content of this manuscript. The other authors report no competing interests.

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