



Between the search for assistance and its realization: the peregrination of pregnant and postpartum women with Maternal Near Miss

Entre a busca por assistência e sua efetivação: peregrinação de gestantes e puérperas com quadro de Near Miss Materno


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Abstract

This mixed-method and sequential exploratory study aims to identify patterns related to the trajectory of pregnant and puerperal women who evolved to risk situations, from arrival in a first care service to admission to a tertiary maternity hospital. The quantitative phase analyzed 1,703 medical records and hospitalization records of women assisted in three tertiary maternity hospitals in the Metropolitan Region of Fortaleza, Ceará, from 2010 to 2019. The qualitative phase was conducted from January to September 2020 with 14 women survivors of Maternal Near Miss (MNM), using Schütze's Autobiographical Narrative Interview. The findings reveal how delays related to professionals and the health system contributed to the pilgrimage of pregnant and postpartum women and, consequently, to the MNM cases. The peregrination of these women is associated with problems in the structures of the Care Network and the services. Thus, it becomes necessary to use tools to monitor the quality of the service provided by health professionals and to provide well-established care processes, physical structures, and the healthcare networks that support the follow-up of these processes. **Keywords:** Maternal Near Miss; Women's Health; Comprehensive Health Care; Obstetrics; Public Health.

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Resumo

Este estudo, de caráter misto e sequencial exploratório, objetivou identificar padrões relacionados a trajetória de mulheres gestantes e puérperas que evoluíram para situações de risco, desde sua chegada em um primeiro serviço de assistência até sua admissão em uma maternidade terciária. A fase quantitativa analisou 1.703 prontuários e registros de internação de mulheres assistidas em três maternidades terciárias da Região Metropolitana de Fortaleza, no Ceará, entre 2010 e 2019. Na fase qualitativa, realizada entre janeiro e setembro de 2020, participaram 14 mulheres sobreviventes ao Near Miss Materno (NMM), por meio da Entrevista Narrativa Autobiográfica de Schütze. Os achados desvelam como atrasos relacionados aos profissionais e ao sistema de saúde contribuíram para a peregrinação de gestantes e puérperas e, conseqüentemente, para os quadros de NMM. A peregrinação destas mulheres associa-se a problemas nas estruturas da rede de atenção e dos serviços de saúde. Assim, fazem-se necessários o uso de ferramentas de acompanhamento da qualidade do serviço prestado pelos profissionais de saúde, os processos assistenciais bem estabelecidos, as estruturas físicas e as Redes de Atenção à Saúde (RAS), que suportem o seguimento desses processos.

Palavras-chaves: Near Miss Materno; Saúde da Mulher; Assistência Integral a Saúde; Obstetrícia; Saúde Pública.

Introduction

Since 2011, the World Health Organization (WHO) has recommended the use of Maternal Near Miss (MNM) as an indicator of the quality of obstetric care (Souza et al., 2011) in an institution. MNM occurs when a woman survives, due to adequate healthcare services, after serious clinical complications that put her life at risk during pregnancy, childbirth, or the postpartum period (Pattinson; Hall, 2003). The extension of the “three delays model” (Thaddeus; Maine, 1994), initially associated with maternal mortality, introduces to the MNM universe (Pacagnella et al., 2014) the debate on pregnant women’s peregrination as a factor associated with unfavorable outcomes.

The three delays model proposes a structured sequence for delays in care, in three phases: delay related to patients; delay related to accessibility to the reference service; delay related to medical care (Thaddeus; Maine, 1994). The peregrination of pregnant women in search of birth assistance is one of the components of the second delay in exchange with the third, because diagnosis and initiation of appropriate therapy in a smaller institution are crucial for timely referral to the reference unit in cases of need (Combs Thorsen; Sundby; Malata, 2012; Echoka et al., 2014; Lire et al., 2017; Mgawadere et al., 2017). Peregrination is understood as the flow of pregnant women through at least two services in search of adequate obstetric care at the time of birth (Menezes et al., 2006; Mgawadere et al., 2017; Andrade; Vieira, 2018). It is important to note that, if a pregnant woman with a serious complication takes a long time to get to a hospital that is able to meet her demand, her likelihood of death increases, even if the destination facility is a tertiary level institution with adequate equipment and qualified staff (Menezes et al., 2006; Lotufo et al., 2012; Andrade; Vieira, 2018).

In Brazil, the *Rede Cegonha* (RC - Stork Network) was created in 2011, regulated by Ordinance No. 1,459, of June 24, with the aim of expanding access and improving the quality of care assistance in prenatal, childbirth, the puerperium, and in children up to 24 months old. Its integration into the *Rede de Atenção em Saúde* (RAS - Healthcare Networks) aims to coordinate health services, enabling them to act

cooperatively and interdependently based on their levels of complexity, increasing the efficiency of care processes (Arruda et al., 2015). However, despite the undeniable advances made and the importance of RAS and RC, overcoming the fragmentation of maternal and child health care is still a challenge (Freitas; Araújo, 2018).

It is well established that detailed information about the problems faced is fundamental for formulating policies and improving the quality of obstetric care (Hogan et al., 2010). Thus, based on the assumption that the trajectories of pregnant women provide body and materiality for lapses in the care networks, the following questions emerge: “what are the paths taken by pregnant and puerperal women who progressed to MNM, from seeking care to arriving at the reference health unit?”; “there is a hierarchical RAS and a regulation service to organize it, why is the peregrination of pregnant women still a reality?”

Thus, this study was designed to identify patterns related to the trajectory of women who progressed to MNM, from their arrival at a first care service until their admission to a tertiary maternity hospital. This research is justified by the need to identify lapses in the processes of the pregnant women’s care network, providing support for an effective improvement in care.

Methodology

This is a mixed-method study, which adopted an exploratory sequential design carried out in three tertiary maternity hospitals in the Metropolitan Region of Fortaleza, Ceará, from 2010 to 2019. A brief overview of the structure of maternal and child health care in the state is therefore in order.

Ceará is the eighth most populous state in Brazil, with an estimated population in 2017 of 9,020,460 inhabitants, of whom 75.5% live in urban areas and 24.9% in rural areas. In terms of regionalization, the state is organized into five macro-regions—Fortaleza, Sobral, Cariri, Sertão Central, and Litoral Leste/Jaguaribe. According to the Master Plan for the Regionalization of Health Actions and Services in Ceará - PDR (2014), the macro-region of Fortaleza, with its 19 municipalities, was home to a population

of 4,560,149 in 2014, corresponding to 51.9% of the state’s population in the period. Figure 1 shows the macro-regions of Ceará, the regional departments of Fortaleza and the location of tertiary maternity hospitals, identified by red triangles.

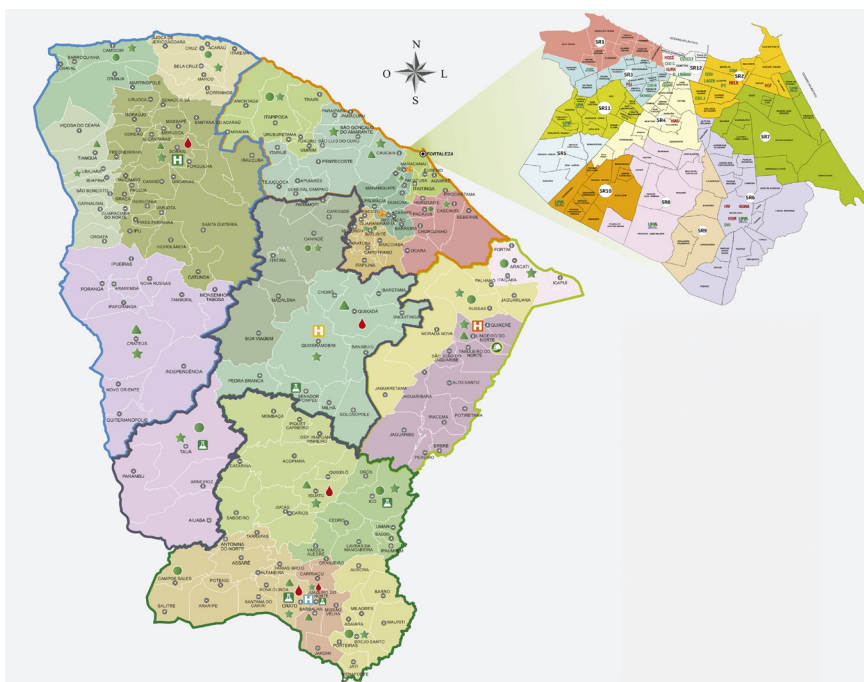
Having adhered to the Rede Cegonha Regional Action Plan, the 2012-2014 State Plan included 11 municipalities in this policy, covered by 20 hospitals, 10 of which were in Fortaleza. All municipalities have committed to carrying out normal-risk births. Although two have committed to supporting high-risk births, which still carried out today in only three hospitals in the city of Fortaleza (Ceará, 2012).

In 2015, the Government of the state of Ceará initiated the *Nascer no Ceará* (NC - Born in Ceará) Program, aiming to restructure the line of maternal and child care based on attention to high-risk pregnant women and guaranteeing qualified assistance to pregnant women and newborns in 184 municipalities in Ceará, with the regionalization and decentralization of health actions and services of the Brazilian National Health System (SUS). In its initial stages, the NC carried out the situational diagnosis of maternal and child health care, developed health care protocols for pregnant women that contextualized reference and regulatory services, qualified medical professionals and nurses—both in technical issues and in the dynamics of RAS—and presented a proposal for the reorganization of services based on matrix support and regionalization¹. Since 2019, however, the program has been paralyzed and its restructuring proposals have not been implemented. It is worth noting that this interruption was in the context of the health emergency linked to the Covid-19 pandemic and that in 2023 a new government began. As of the date of writing this manuscript, NC activities have not resumed, although the program has not been officially suspended.

The quantitative stage of the research consisted of a cross-sectional and analytical study of a historical series, carried out from the analysis of medical records and hospitalization records of women assisted in three tertiary maternity hospitals in the Metropolitan Region of Fortaleza, Ceará, from 2010 to 2019.

¹ Available from: <<https://www.saude.ce.gov.br/nascer-no-ceara/>>. Access on: Mar. 06, 2023.

Figure 1 – Map of the state of Ceará and its macro-regions, highlighting the Fortaleza regional departments and the location of the tertiary maternity hospitals



Source: Adapted from the Health Department of the state of Ceará and the Municipal Health Department of Fortaleza (Ceará, 2020).

A total of 3,352 medical records were analyzed. The inclusion criterion was being a pregnant or postpartum woman admitted to participating maternity hospitals as a result of pregnancy. Medical records that were unavailable and those of women who were still hospitalized during the study period were excluded. Data were obtained by analyzing medical and hospitalization records. The specific instrument recommended by the WHO was used to identify women who met the criteria for MNM (WHO, 2011). Sociodemographic variables (age, color/ethnicity, marital status, and education) and data on the current pregnancy, issues and complications and ways of getting to the reference maternity hospital were also collected.

Of the total analyzed, 1,703 women had been to at least one health institution before reaching one of the three tertiary services included in the survey. From their medical records, we sought to identify delays relating to three spheres: in the diagnosis at the institution of origin, in the beginning of therapy in the institution of origin (after diagnosis), and in transfer. These last data were extracted from notes or

referral forms attached to the medical records, from the hospitalization summary document, from the anamnesis carried out upon admission—generally by a medical student—and from admissions carried out by nursing staff.

Data were analyzed in IBM SPSS v. 25. The exploratory analysis was described with frequencies and their respective confidence intervals (95% CI). Quantitative variables were analyzed using the non-parametric Wilcoxon test. To evaluate the association of independent variables with outcomes characterizing Near Miss (=1) and non-Near Miss (=0), the hypothesis test (Fisher's exact test) and odds ratio (OR) were used, adopting a 95% confidence level.

In this design, quantitative data were collected and analyzed before qualitative data, which complemented and contributed to the understanding of the phenomena analyzed in the first stage (Creswell, 2007).

For the qualitative stage, 14 postpartum women participated who met criteria for MNM and were admitted to participating maternity hospitals from January to September 2020. To collect data, the

autobiographical narrative interview technique proposed by sociologist Fritz Schütze (1983) was used, which can be organized into three stages. In the first stage, the participant is asked to provide a spontaneous report from a generative question (Jovchelovitch; Bauer, 2002). In this survey, we adopted the question: “I am researching the life stories of women who had serious complications during pregnancy, childbirth or after childbirth. To do this, I ask you to tell your story however you see fit. Tell me your entire journey, from your prenatal care to your admission to the intensive care unit (ICU) and what happened after your discharge. You can take as long as you like, start and finish your story as you wish, telling your life so that I understand who you are. For you to tell your story freely, I won’t interrupt you. You must tell me when the story is over, and only then will I ask you some questions to clarify what I didn’t quite understand. All right?”. Subsequently, questions were asked to clarify ambiguities, doubts, and narrative lapses (“immanent questions”). In the third stage, the recorder was turned off and questions were asked that required the informant to rationalize and theorize about the event in question (“exmanent questions”) (Schütze, 1983; Jovchelovitch; Bauer, 2002).

The audios were transcribed immediately after each interview, and the notes obtained from the exmanent questions were added to the material. After transcriptions, the texts were structured into narratives, which were re-presented to each participant in order to validate the information and correct lapses and inaccuracies. Concluding the construction of each narrative, data organization began by formal analysis, as proposed by Schütze (1983). The data were first divided into indexed material (rational and concrete content, which can be ordered chronologically) and non-indexed material (subjective content, such as value judgments, feelings, and reflections) (Jovchelovitch; Bauer, 2002). The indexed content was organized in order to reconstruct individual trajectories, and the non-indexed material was incorporated into the trajectories and organized into meaning cores for saturation analysis purposes. For each narrative, the data was organized to allow comparisons between the trajectories and the emerging cores of meaning, enabling the identification of regularities and contrasts (Jovchelovitch; Bauer, 2002). Data saturation was considered from the moment regularities became the rule.

Subsequently, the qualitative data were interpreted together with the quantitative data. In the end, a graphic scheme was constructed that summarizes the patterns found in association with the second delay and the peregrination of women in MNM situations. In order to maintain anonymity, participants were identified by fictitious names. The three reference hospitals were named H1, H2, and H3. The remaining hospitals received random identifications with other letters of the alphabet.

This research project was approved by the Ethics Committee of the Universidade de Fortaleza with number 027/2009, with the Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico (FUNCAP) as sponsor, via the research program for the SUS, call 01/2017.

Results

Of the 1,703 women who had been to at least one service before arriving at the reference maternity hospital, 7.6% progressed to MNM. The majority were black (54.7%), ranging from 20 to 29 years of age (47.4%), had completed primary education (40.9%), and lived with a partner (61.7%) (Table 1).

Fourteen women participated in the qualitative stage; their characteristics are summarized in Table 2.

Table 1 – Profile of participants in the quantitative stage, Fortaleza, 2010 to 2019

Participant characteristics	N	%
Near miss		
Yes	129	7.6
No	1574	92.4
Age		
12 to 19	346	20.3
20 to 29	808	47.4
30 to 39	463	27.2
40 to 46	86	5
Race/Color		
Black	931	54.7

continues...

Table 1 – Continuation.

Participant characteristics	N	%
White	723	42.5
Others	20	2.9
Schooling		
Illiterate	30	1.8
Incomplete primary education	537	31.5
Primary education	697	40.9
Secondary education	421	24.7
Higher education	18	1.1
Marital status		
Lives with partner	1,050	61.7
Does not live with a partner	653	38.3

Table 3 shows the odds of MNM associated with delays between arrival at the first institution and arrival at the tertiary institution among women who underwent at least one transfer. Delay in diagnosis at the institution of origin increases the risk by 3.3 times in relation to timely diagnosis (95% CI 2.2-5.2), delay in starting treatment increases the risk by 3.1 times in relation to timely start (95% CI 2.0-4.8), and delay in case referral increases the risk by 3.7 times (95% CI 1.4-2.0) in relation to timely referral.

The elaboration of narratives contributed to the understanding of the events found in the quantitative stage. The delay in diagnosis at the institution of origin, for example, occurred even in cases whose risk and management are already well established in the literature, such as pre-eclampsia and postpartum hemorrhage, and cannot be justified by a lack of structure. The narratives below provide similar accounts from women treated in different services and municipalities:

The pressure was 15x10. [...] They didn't give me medicine in the drip, no. They said I was nervous and that it would go down. (Joana, 23 years old, White, from Guaiuba).

When I arrived at the hospital, my blood pressure was at 14x9. The nurse wrote it down in the chart, but the doctor didn't see it or didn't care, because no one said anything. I stayed there in labor, until the pressure rose higher. I heard the nurse talking about 16, the blood pressure, but the doctor said it was from pain. Only when it rose to 18 did they give me medicine to lower my blood pressure. (Jurema, 24 years old, Indigenous, from Caucaia)

I was bleeding a lot. My mother warned them many times, but they said it was normal. [...] In the early hours of the morning, I passed out when I tried to get up. I was pale. (Elisa, 15 years old, White, from Maracanaú)

I was left bleeding. I told the nurse, but she said it was normal. In the early hours of the morning, I started to bleed more. I got up to go to the bathroom and passed out. (Lúcia, 20 years old, White, from Pacajus)

The delay in diagnosis also occurs due to the transfer of responsibility for care, culminating in multiple transfers between institutions, as Suelen, a woman who works in a textile factory and lives with her husband, three children and mother-in-law, tells us:

The cesarean section went very smoothly [...]. The problem started later. After two days I was in a lot of pain, a lot of pain. I went to the hospital where I had the cesarean section and they said it was normal. Then I went to the second maternity hospital, but they also said it was normal. I came home and started to have a fever. My husband thought it would be good to come with me to Fortaleza soon. We went to the hospital with the company insurance, but the plan had a waiting period. Then I went to the nearest maternity hospital. There they said that I should go to the place where I had the C-section because it was a complication. We went back to the first hospital, in my municipality, and they said it was normal. Then we went to the second hospital again because it was too bad. (Suelen, 39 years old, Black, from Maranguape)

Table 2 – Characteristics of participants in the qualitative stage, City, 2010 to 2019

Participant	Age	Municipality of origin	Gestational age at admission	Number of PN consultations	With partner	Skin color/ethnicity
Vera	37	Fortaleza	36	5	Yes	White
Fátima	32	Fortaleza	36	3	Yes	Black
Letícia	32	Caucaia	35	5	Yes	Black
Berenice	38	Aquiraz	32	4	Yes	White
Conceição	28	Fortaleza	36	6	Yes	Black
Teresa	41	Fortaleza	38	4	No	Black
Clara	22	Cascavel	38	6	No	White
Elisa	15	Maracanaú	40	8	No	White
Joana	23	Guaiuba	30	4	No	White
Suelen	39	Maranguape	Postpartum	4	Yes	Black
Cicera	19	Caucaia	Postpartum	9	No	Indigenous
Lúcia	20	Pacajus	36	9	Yes	White
Jurema	24	Caucaia	35	6	Yes	Indigenous
Raquel	32	Fortaleza	37	8	No	Black

Table 3 – Risk of developing MNM associated with delays at the institution of origin among women who have undergone at least one transfer and the methods of arrival at the tertiary service

			Near miss		
	Yes	No	OR	95%CI	p-value
Delays at the institution of origin (n=1,703).					
Delay in diagnosis at the institution of origin	38(71.7%)	15 (28.3%)	3.3	2.2-5.2	" 0.001
Delay in starting treatment at the institution of origin	32(69.6%)	14(30.4%)	3.1	2.0-4.8	" 0.001
Difficulties in referencing the case and/or with regulation	41(43.6%)	53(56.4%)	3.7	1.4-2.0	" 0.001
Methods of arrival					
Direct spontaneous search	19 (3.6%)	516 (96.4%)	1		
Transfer by rescue service	3 (4.9%)	58 (95.1%)	0.8	0.3 – 2.6	0.7
Unscheduled inter-hospital transfer (unregulated)	35(16.9%)	172(83.1%)	4.8	3.1 – 7.4	"0.001
Scheduled inter-hospital transfer (regulated)	6(16.9%)	156(83.1%)	0.6	0.2 – 1.6	0.2
Referral without regulation of non-hospital service	1(2.1%)	47 (97.9%)	0.6	0.2 – 1.6	0.2

The transfer of responsibility, however, can also occur between sectors of the same institution, in a circular pattern, as the sequence in Suelen's account shows us:

They called the surgeon to look. He came, examined me, but said nothing. I know that I was still there for two days, going from the surgeon to the obstetrician and from the obstetrician to the surgeon and I ended up having sepsis. It was only then that they sent me here. Here they operated on me and actually I had appendicitis. The belly was just pus. (Suelen, 39 years old, Black, from Maranguape)

This process of transfer to multiple services and/or intersectoral places the patient in a situation in which no professional is responsible for her care. Suelen's comments also highlight the lack of effective communication between professionals and patients, which contributes to diagnostic delays and peregrination. Team changes during shifts mean that on each return to the previous sector, the patient is evaluated by a new professional, who reaches similar conclusions to the previous one without investigating the problem in depth:

Every time I came back it was a new doctor. A new surgeon and a new obstetrician. I had already memorized what each person was going to say, until the point when I was too weak to remember anything. (Joana, 23 years old, White, from Guaiuba)

Even after diagnosis, delays in starting treatment can still occur, as shown by the narratives of Joana (who had already experienced a delay in diagnosis) and Raquel (timely diagnosed with pre-eclampsia). Joana, 23 years old, White, single, lives with her mother, sister, and nephew, and works as a cleaner, helping her mother. Raquel (32 years old, Black, single) lives with her two children and works in a cafeteria. Both of them reported not having received intravenous or intramuscular medication, which are the routes of administration of magnesium sulfate (medication indicated for preventing eclampsia):

When the blood pressure reached 16x10 they put medicine under the tongue to lower it, but they

didn't put medicine in the IV. (Joana, 23 years old, White, from Guaiuba)

I arrived and my blood pressure was 17x10. They said it was pre-eclampsia, that they were going to give me a pill to lower the pressure. They did not give me an IV. I waited for a vacancy at a more structured hospital, but it took a long time. I had two seizures in the hospital and had others in the ambulance on the way here. (Raquel, 32 years old, Black, from Fortaleza)

Cícera's account of hemorrhagic complications corroborates the previous narrative about the delay in instituting therapy. Cícera is a 19-year-old Indigenous woman from Caucaia, single, who lives with her mother and works with her sister in an informal business:

I was just on saline drip. It was just a saline drip, there was no medicine, until the clinical doctor on duty called the obstetrician and he prescribed medicine to stop the bleeding. This took a while, because it was early in the morning and the obstetrician took a while to answer. (Cícera, 19 years old, Indigenous, from Caucaia)

Even after the decision to refer the patient to a hospital capable of providing the necessary assistance, this may be delayed by different factors. Following Cícera's narrative, we highlight three of them: the difficulty of integration between precarious private assistance and the SUS, the difficulty of transportation and the distorted use of emergency services for removal:

My delivery was private because I wanted a cesarean section and I had a package. But they couldn't transfer me via SUS and there was no more medicine to stop the bleeding. There was also no ambulance there at the time. Then they called the Mobile Emergency Care Service (SAMU), but the ambulance took a long a time and arrived in the morning. (Cícera, 19 years old, Indigenous, from Caucaia)

The difficulty of transportation is also associated with attitudinal flaws that are culturally naturalized

in some locations, as Clara (22 years old, White, single, from Cascavel), with no work or academic activity during the research period, tells us: “*The ambulance wasn’t there. [...] There, it is common for the driver to keep the ambulance at home and only come if called.*”

The lack of vacancies in reference services also emerges as a factor associated with delays in transfer, as we observed in the narrative of Vera (37 years old, White, married, from Fortaleza), a telemarketing operator. Despite the timely diagnosis, the procedure was postponed due to the unavailability of places in reference institutions. In the report below, the originating institution is a secondary hospital, which had an incomplete team. According to Vera’s explanations, the hospital had only one obstetrician on the day of her admission and there was no pediatrician during part of the day:

They said my blood pressure was high and my delivery was risky. I stayed there in the emergency room, taking medication in my vein to lower my blood pressure and prevent a seizure. [...] My mother asked why it was taking so long to deliver the baby and the nurse said they were waiting for a place in another hospital. [...] I stayed in the emergency room waiting for this vacancy for a whole day. [...] Then the baby’s heart got complicated (cardiotocography showing fetal distress). [...] They performed the cesarean section, in a hurry. [...] I had a seizure during the surgery, and I don’t remember it anymore. When I woke up, I was already in the ICU. (Vera, 37 years old, White, from Fortaleza)

Both Vera and Jurema had their conditions worsened by the difficulty of finding vacancies in reference services. However, not all patients reach tertiary institutions via regulation. Irregular transfers may be carried out due to lack of vacancies or delay in regulatory response, considering the urgency of the case:

They were going to send me to H1, but there was no vacancy there. [...] So, they decided to send me to another place without even calling. They said that as it was serious, they wouldn’t be able to take me back [...]. (Joana, 23 years old, White, from Guaiuba)

This attempt at irregular transfer, however, did not reduce the risk of MNM, as shown in Table

3, which also presents the risk associated with the different ways patients arrived at the tertiary services studied. The risks faced by patients who underwent at least one service before arriving at the reference maternity hospital were calculated in relation to those who sought directly one of the three institutions participating in the research. The only method that presented an increased risk of developing MNM was exactly unscheduled intra-hospital transfer (OR=4.8; 3.1-7.4).

The sequence of Joana’s narrative contributes to understanding some of the lapses related to this unregulated transfer alternative:

[...] They said they weren’t going to take me back, but they did, right? The ambulance went to a hospital first. I didn’t even get out. It was full. [...] Then he brought us to hospital H3. I was already in bad shape here. I had two seizures in the ambulance. (Joana, 23 years old, White, from Guaiuba).

Joana accumulated delay factors in her peregrinations: her diagnosis of pre-eclampsia was delayed, even though she already had high blood pressure on admission; the start of treatment after diagnosis was delayed due to lack of supplies; the regulated transfer did not occur due to unavailability of places and the peregrination was consolidated during the transfer which was not agreed with the central regulation or the other services. It is clear that factors related to delays can be cumulative, contributing to the worsening of the situation.

Unregulated referrals also come from non-hospital units, components of Primary or Secondary Healthcare. Fátima (32-year-old married woman from Fortaleza), who works as a general services assistant, for example, was having her prenatal care at the Basic Health Unit (UBS). Although she was affiliated to a hospital, she was told at the UBS, during a consultation, to go immediately to a tertiary service, carrying only a note written on a prescription form:

I was 7 months pregnant and at my appointment they sent me to the emergency room because my diabetes was over 300. They wrote a note on the prescription for me to go to the emergency room. I went to the center first, where my other son was

born. But I didn't even go in with the note. They said at the door that it was full [...] and I went to H1. At H1 they first said I couldn't stay because it was full, and I didn't have a referral. But my husband managed to talk about diabetes and when the doctor saw the note, she measured my sugar on my finger and admitted me at once. (Fátima, 32 years old, Black, from Fortaleza)

Sometimes, referral to the tertiary service occurs via contact between professionals, without the intermediary of central regulation, as exemplified by Elisa (15 years old, White, single, student, from Maracanaú), who lives with her grandparents and mother: "The doctor who was at the time of the bleeding called the doctor who was on duty here, and she received me even though it was full. They called it vacancy zero."

The narratives also highlight attempts to circumvent regulation difficulties by transferring responsibility for travel to the patient, worsening the peregrination process, as we observed in Letícia's account:

[...] the doctor on duty said that [...] there was no way they could help me there and that if he committed me, they would need to ask for a place in Fortaleza. And when you ask like that, it's hard for them to give it. He asked if I knew anyone in Fortaleza and

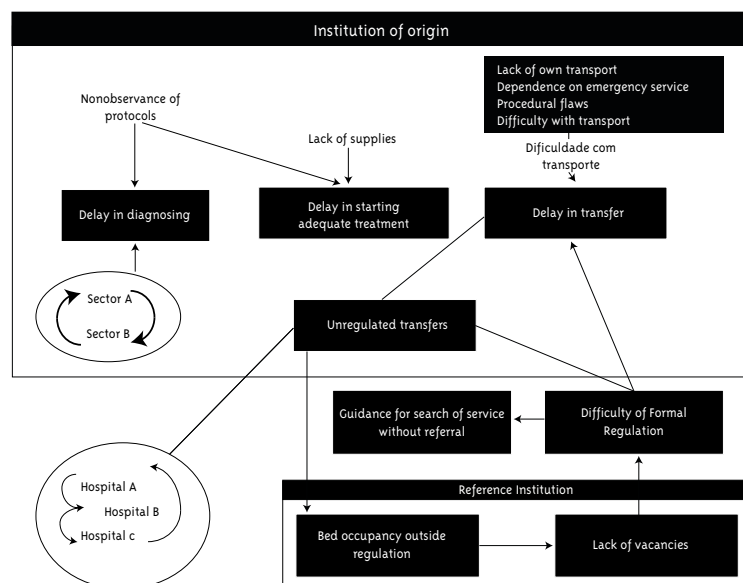
told me to tell the hospital that I lived with them. (Letícia, 32 years old, Black, from Caucaia)

This transfer of responsibility to the patient is aggravated by conditions of social vulnerability, as we see in Cícera's narrative, who presented bleeding in the episiotomy suture area that became a hematoma, progressed to fasciitis, and culminated in sepsis:

I went back to the hospital a few days after being discharged and the doctor said that she needed to open the cut, that it could be blood or pus, but that she was without an anesthesiologist and that it was risky to start and then not be able to finish. She said that she had two seriously ill patients waiting for a place for three days and none was coming [...] so it would be better for me to go straight to the hospital in Fortaleza with my own legs. I said I couldn't go, and she sort of hinted that if I stayed there, she wouldn't be able to do anything, because she couldn't get a place. My mother went out asking people she knew to help pay for transportation for us to go. (Cícera, 19 years old, Indigenous, from Caucaia).

Figure 2 groups the patterns related to the delays found in the joint interpretation of quantitative and qualitative data.

Figure 2 – Patterns of delays in obstetric care found after joint interpretation of quantitative and qualitative data.



Discussion

The results of this research show how failures in hospital care delay the arrival of women with serious conditions at reference maternity hospitals, increasing the risk of MNM. These lapses are linked to assistance issues—such as non-observance of protocols and ineffective and violent communication—as well as structural aspects, highlighting flaws in the regionalization and referral/counter-referral processes.

Notably, the delay in diagnosis and implementation of appropriate therapy occurs even in the face of conditions with well-defined clinical protocols and high epidemiological risks, such as puerperal hemorrhage and pre-eclampsia. It is worth mentioning that these are the main causes of maternal death and are considered preventable causes (Pacagnella et al., 2014; Sheldon et al., 2014; Sotunsa et al., 2019; Zanette et al., 2014) that should not be neglected.

The narratives provided place these delays in the sphere of non-observance of established protocols and the transfer of responsibilities, subjecting the patient to multiple hospital and intersectoral transfers until diagnosis. These findings are in line with those of a study carried out in Rwanda, which found that delays at the diagnostic and therapeutic level due to human error or mismanagement were present in 65.3% of MNM cases (Benimana; Small; Rulisa, 2018). A multicenter study carried out in Brazil, including 6,706 women with severe hypertensive disorder in 27 maternity hospitals in the country, found that most women with severe hypertension suffered some type of delay in care (55.6%) related to the health system (OR 2.86; 1.89-4.33) or health professionals (OR 2.45; 1.53-3.92) (Zanette et al., 2014), corroborating the findings of this study. Regarding postpartum hemorrhage, it is already established that factors related to the health system and inadequate obstetric care are important determinants of survival from this condition (Ronsmans; Graham, 2006). Even so, it remains one of the main causes of maternal morbidity and mortality (Hogan et al., 2010; Umashankar et al., 2013; Sheldon et al., 2014; Sotunsa et al., 2019), which correlates with lapses in care found in this study.

Non-observance of protocols in the accounts were often accompanied by violent forms of communication.

Despite studies highlighting the role of interrelationships in the continuity and quality of care (Almeida et al, 2021; Jesus et al 2018), communication problems are frequently reported in the literature, accounting for between 40% and 66% of care reports (Attanasio; Kozhimannil, 2015; Domingues et al., 2016).

The situations narrated in this text can also be classified as obstetric violence (OV). OV is any action or omission towards a woman during prenatal care, childbirth, or the puerperium that causes unnecessary pain, harm, or suffering, carried out without her explicit consent or in disregard of her autonomy (Fundação Perseu Abramo, 2010). This construct therefore includes both the disrespectful and abusive treatment of patients and other elements of poor-quality care, such as non-adherence to best practices based on scientific evidence (Katz et al, 2020). Therefore, communication failures associated with different forms of obstetric violence, such as those evidenced in the narratives, can be directly related to the occurrence of MNM (Lansky et al, 2019).

In addition to lapses in assistance, the results obtained in this study highlight structural problems, such as flaws in the regionalization process and regulatory systems. The organization of RAS should respond to effectiveness determinants based on an economy of scale (ES) logic. To this end, the organization of the territory, the presence of effective regulatory mechanisms and qualified regional planning are crucial in determining the ease and difficulties of access (Borsato; Carvalho, 2021). One of the key points in this process are the referral and counter-referral flows, which demonstrate how the dialogue between the levels of care is structured (Dubeux; Freese; Felisberto, 2013). In this way, the women's narratives in this research highlight, via regulatory failures, important lapses in the integration of the care network.

Lapses in regulatory systems are also associated with the poor distribution of services. The narratives highlight the lack of preparation of maternity hospitals in peripheral municipalities to provide adequate assistance. These smaller establishments are reported in the literature as frequently presenting low occupancy rates and lacking in structure and human resources, consequently having a poor cost-effectiveness ratio, ending up playing a role locally

that is equivalent to that of primary health care (PHC) (Rocha et al, 2017). These establishments do not provide adequate ES, providing ineffective care and requiring patients to travel (Borsato, Carvalho, 2021). This, combined with inadequately distributed tertiary hospital care, as shown in Figure 1, and this creates a scenario that is conducive to the establishment of regionalization problems (Rocha et al, 2017; Borsato; Carvalho, 2021).

This scenario is compounded by difficulties in traveling and accessing essential places, such as health services. Since this is a constitutional right, it is necessary to consider issues of population mobility and the provision of multiple forms of transport leading to these institutions (Feitoza; Aredes, 2015).

Our findings therefore corroborate those of Borsato and Carvalho (2019), in that, despite efforts to implement the legal framework regarding RAS, the process of health services regionalization still suffers from biases that impact on the integration and activity of the care network.

Another emerging problem is the intersection between the public and private sectors. The discussion of both issues requires considering the concomitant implementation of conflicting projects in the health area. While in the early 2000s there was a commitment to ensure advances in access to care provided by the SUS, on the other hand there was a stimulus to the growth of the private sector with a focus on the C and D income segments. The blatant underfunding—which would worsen in the following years—coupled with the progressive increase in demand—resulting from the greater longevity of the population and technological innovations in health—culminated in growing difficulties in providing care. These issues led to significant waiting times for many procedures and an insufficient supply of beds and hospitalization spaces (Cordilha; Lavinias, 2018), which contributes to the difficulty of transfer as evidenced in the narratives.

As a more immediate effect of this overload, the 21st century saw the progressive expansion of medical services companies, known as “popular” companies, which focused their attention on users dissatisfied with the waiting times of the public system—the so-called SUS overflow (Godoy, 2015). It turns out that this expansion of the private sector, in a highly segmented way, generated potentially

more limited accessibility, without planning lines of care and returning the patient to the SUS when the cost of their treatment becomes high or when care becomes difficult to be provided at the agreed value to the most vulnerable segments.

Therefore, the results show that delays in assistance to pregnant and postpartum women are multifactorial and complex. The peregrination of these women is associated with problems in the structures of RAS and services, but it is also linked to significant lapses in care, requiring greater management to have greater control over following the established protocols.

Final considerations

This study showed that the peregrinations of pregnant and postpartum women is a complex phenomenon, associated with multiple factors, including delays related to professionals (such as disregard for care protocols, communication, and obstetric violence), the health system (lapses in the regulatory system, availability of beds, referral and counter-referral flows, regionalization of the SUS, and the relationship between public and private/supplementary networks), and structural issues (such as urban mobility problems).

Improving obstetric care and reducing peregrinations requires a health system that has tools for monitoring the quality of service provided by health professionals, well-established care processes, physical structures and RAS that support the monitoring of these processes. These measures can only be achieved by strengthening the SUS and overcoming underfunding and the public-private dichotomy.

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Contribution of the Authors

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