

Assessment of adherence to best practices in labor and childbirth care by care providers working in public hospitals in the Federal District of Brazil

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Abstract *Objective: To assess adherence to best practices in labor and childbirth care by doctors, nurses, obstetric nursing residents, and obstetric medical residents working in public hospitals in the Federal District of Brazil. Method: A cross-sectional study was conducted with care providers working in 11 public hospitals in the Federal District of Brazil between January and March 2015. A questionnaire containing 20 sociodemographic questions and 50 five-point Likert items was administered. The average scores of each group and each hospital were analyzed. Results: Nurses obtained the highest scores for the use of evidence-based practices (57.8 ± 12.9), while doctors achieved the highest scores for the work process dimension (72 ± 8.5). Medical residents obtained the highest scores for organization of labor and childbirth care (56.5 ± 8.5). No statistically significant differences were found between groups. Hospital scores ranged from 55 to 64. No statistically significant differences were found between hospitals. Most professionals encourage natural childbirth. Conclusion: It is necessary to strengthen actions to promote greater adherence to best care practices, both in relation to organization of labor and childbirth care and to the attitudes and values of health professionals.*

Key words *Women's health, Health knowledge, attitudes, and practices, Humanized childbirth, Health services research*

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Introduction

Women's health, particularly antenatal and labor and childbirth care, has been a prominent issue on Brazil's health agenda since the 1990s. In this respect, there has been a shift away from the biomedical model towards an integrated and regionalized approach that addresses perinatal risks and ensures timely access to quality primary and specialist care^{1,2}.

The organizational model for labor and childbirth care proposed by the Ministry of Health in the 1990s and reinforced in 2011 follows international recommendations. It consists of practice guidelines for the delivery of quality evidence-based and comprehensive care for women and their newborn babies, recognizing that women and their families are the main actors in maternal healthcare³.

The guidelines envisage the organization of thematic antenatal, childbirth, and infant care where work processes are the driving force behind change in practice. The approach reinforces the use of soft and soft-hard technologies (technical and scientific knowledge) for childbirth care in cases of low-risk pregnancies and deliveries. Efforts have been made to strengthen maternity services and develop innovative strategies to overcome conflicts generated by power relations that permeate the everyday actions of health workers in hospital settings⁴.

Brazil's guidelines are aligned with recommendations put forward by the American College of Obstetricians and Gynecologists and Society for Maternal-Fetal Medicine⁵. In 2015, these organizations published guidelines for organizing an integrated system for regionalized obstetric care with services that provide care at different levels of complexity. These services should have health professionals with special training and facilities with adequate technical support. The implementation of these guidelines requires a global approach that supports respectful and humanized antenatal, intrapartum, and postnatal care³.

The Federal District of Brazil has an estimated population of three million, 65% of which uses public health services. Births in the district dropped from 46,967 live births in 2001 to 44,538 in 2014⁶. Caesarean section rates have steadily climbed, from 39.9% in 2000 (19,416 caesarean sections compared to 29,180 normal births) to 52.9% in 2014 (28,393 caesarean sections compared to 25,122 normal births), far exceeding the ideal rate recommended by the World Health Organization (WHO). These statistics have fuelled

debate about medically indicated caesarean sections, where mother and baby can be exposed to unnecessary risks, including maternal death⁷.

The federal district's Department of Health (SES-DF) adhered to the *Rede Cegonha* (the Stork Network) in 2011 and has since developed a range of actions, including improvements in coordination and communication between primary care and birth locations, changes in the obstetric care model, greater adherence to best obstetric care practices, and changes in work processes envisaging the adoption of evidence-based care strategies.

The delivery of quality comprehensive care for women poses a huge challenge for the federal district's and country's health systems alike. However, a number of potential synergies have been identified to advance effective change in labor and childbirth care through the implementation of best perinatal practices. These practices include the review of routine care and process and outcome monitoring, improvements in the ambience of healthcare facilities, and provision of obstetric nursing care for low-risk deliveries⁸.

Studies have highlighted knowledge gaps in the assessment of professional practices and the evaluation of health services^{9,10} remains a challenge for the majority of health providers given the complexities involved⁹. In view of the above, the aim of this study was to assess adherence to best practices in labor and childbirth care among doctors, nurses, and obstetrics residency program residents working in public hospitals in the Federal District.

Method

A cross-sectional survey was conducted in the 11 public hospitals that make up the federal district's *Rede Cegonha* between January and March 2015. The SES-DF is responsible for administering 16 hospitals, 11 of which provide labor and childbirth care, and one childbirth center. According to the National Registry of Healthcare Establishments, these facilities have a total of 806 maternity beds (607 SUS beds and 199 nonSUS beds) and 512 obstetric professionals (416 doctors and 105 nurses). Seven of the hospitals have obstetrics and gynecology doctor residency programs and obstetrics nurse residency programs.

Stratified sampling was used whereby participants were divided into subgroups (obstetricians, obstetric nurses, medical residents, and nursing residents) based on the proportion of profes-

sionals allocated to each participating hospital, resulting in a final sample of 261 health professionals, comprising 111 nurses (42.6%) and 150 doctors (57.5%).

The respondents were interviewed by a team of three nurses, two of whom were obstetric nurses. The team administered a questionnaire containing 20 sociodemographic questions and 50 five-point Likert items (totally disagree, partially disagree, don't know, partially agree, and totally agree) designed to assess the adoption of best practices in labor and childbirth care across three dimensions: organization of labor and childbirth care (items 1 to 12), evidenced-based practices (items 13 to 35), and work process (items 36 to 50). Negatively worded questions were reverse scored, in accordance with the questionnaire instructions¹¹.

A previous study¹² conducted to assess the reliability of the instrument found Cronbach's alpha values of 0.53, 0.78, and 0.76 for dimensions 1, 2, and 3, respectively, after excluding 11 items. To ensure the reliability of the data of the present study, the questionnaire was therefore administered excluding the suggested items, resulting in 39 items that obtained an overall Cronbach's alpha value of 0.80.

The categorical variables were analyzed using the frequency distribution and proportions. To analyze the Likert questions, the score was transformed to a scale ranging from zero (terrible) to 100 (excellent)¹³. After calculating the average scores, the following parameters adapted from Costa et al.¹⁴ were applied to the professionals and hospitals: good = 90 to 100; satisfactory = 70 to 89; poor = 50 to 69; and inadequate = 0 to 49.

The Kolmogorov-Smirnov test was used to check normality. Analysis of variance (ANOVA) was performed with the continuous variables. Where ANOVA showed a statistically significant difference, post-hoc testing was performed using Tukey's TSD with Bonferroni correction. The categorical variables were analyzed using contingency tables assessed using Pearson's chi-squared test or Fisher's exact test. Post-hoc testing was performed with Bonferroni correction when appropriate. A 5% significance level was adopted ($p < 0.05$). Statistical analysis was conducted using the software Statistical Package for Social Sciences 20.0 Mac (SPSS 20.0 Mac, SPSS Inc., Chicago, Illinois, USA).

The project was approved by SES-DF's Health Ethics Committee (application number CAAE 01918712.6.0000.5553). All participants signed an informed consent form. This study was part

of a wider study, entitled Organization, Access, and Continuity of Maternal and Infant Care in SES-DF, and was funded by the Research Support Foundation (*Fundação de Apoio à Pesquisa*).

Results

The average age of the nurses, nursing residents, doctors, and medical residents was 37.6 ± 8.5 , 27 ± 7.3 , 43 ± 8.7 , and 27 ± 1.9 years, respectively. The professionals were predominantly female in all categories. The majority of the professionals were specialists; however, the frequency of qualifications apart from specialist training was greatest among doctors. Average hours worked per week was above 40 to residents (Table 1).

With respect to labor and childbirth care practices (Table 2), the lowest average scores were obtained for the first dimension (organization of labor and childbirth care): 7.8 ± 12.9 , 53.8 ± 12.5 , 56.0 ± 13.8 , and 57.6 ± 12.5 for nurses, nursing residents, doctors, and medical residents, respectively. Significant differences in scores between nurses and doctors were observed in relation to certain items in this dimension, notably: prior visit for familiarization with the birth location; operating beyond capacity; and participating in antenatal meetings to discuss improvements in antenatal and labor and childbirth care. The scores for the first two items were greater among nurses.

Average scores for the second dimension (evidenced-based practices) were 56.3 ± 7.1 , 56.4 ± 7.3 , 56.5 ± 8.5 , and 56.2 ± 6.6 for nurses, nursing residents, doctors, and medical residents, respectively (Table 3). Seven of the 21 items in this dimension showed significant differences in scores between nurses and doctors, notably: labor and childbirth care ($p = 0.01$); nonpharmacological pain management ($p < 0.01$); auscultation of the fetal heart during labor ($p < 0.01$); informing the mother of progress in labor ($p < 0.01$); use of intravenous rehydration during labor and childbirth ($p < 0.01$); encouraging pushing during the expulsion stage ($p < 0.01$); and performing routine episiotomy ($p < 0.01$).

Average scores for the third dimension (work process) were 67.4 ± 15.6 , 63.7 ± 15.8 , 68.2 ± 15.2 , and 72.0 ± 11.4 for nurses, nursing residents, doctors, and medical residents, respectively (Table 4). Seven of the nine items showed significant differences in scores between nurses and doctors, notably: providing information to the mother before commencing procedures ($p < 0.01$); joint

Table 1. Profile of study participants.

Parameter	NUR (N = 83)	NUR-R (N = 28)	DOC (N = 116)	DOC-R (N = 34)	P-value
Average age, years (SD)	37.6 (8.5)	27 (7.3)	43 (8.7)	27 (1.9)	
Average hours worked per week (SD)	39.2(12.7)	59.3(3.8)	40.7(15.7)	60.9(6.3)	< 0.01
Female, n (%)	74(89)	27(96.4)	73(63)	29(85.3)	< 0.01
Schooling, n(%)					
Doctorate	0(0.0)	0(0.0)	2(1.7)	0(0.0)	< 0.01
Master's	3(3.6)	1(3.6)	11(9.5)	0(0.0)	
Specialist training course	58(69.8)	9(32.1)	102(87.9)	9(26.4)	
Degree	22(26.5)	18(64.3)	1(0.8%)	25(73.5)	
Encouraged normal childbirth among friends or family, n (%)	72(86.7)	28(100)	89(78.1)	31(91.2)	0.02

NUR: nurses; NUR-R: resident nurses; DOC: doctors; DOC -R: resident doctors; SD: standard deviation, NS: Not significant.

Table 2. Average and standard deviation of practices in the first dimension - organization of labor and childbirth care. Brasília-DF, 2015.

	NUR (N = 83) M(SD)	NUR-R (N = 28) M(SD)	DOC (N = 116) M(SD)	DOC-R (N = 34) M(SD)	P-value
I arrange a bed in another childbirth care center when there is no bed available in this service.	74.7(28.8)	64.3 (27.4)	70.7(29.0)	70.6(28.8)	NS(0.41)
I routinely receive mothers so they can familiarize themselves with the birth location.	67.5(38.7)	75.7(35.8)	33.3 (36.2)	27.0 (27.8)	< 0.01
Educational activities are carried out with mothers and companions at prior visits to promote maternal bonding.	67.2(32.5)	80.7(26.9)	59.6 (29.7)	55.3 (27.4)	0.02
We usually operate beyond the capacity of the maternity facility.	11.3(21.0)	17.9 (27.4)	6.4(16.1)	11.7(22.1)	0.04
The team is insufficient for the number of mothers seen daily.	11.1(23.0)	22.9(31.6)	11.0(22.3)	22.3(24.5)	NS(0.13)
It is easy to contact the primary care antenatal team and/or high-risk center when necessary.	43.6(25.8)	48.6(25.2)	44.5(27.4)	50.0(30.0)	NS(0.60)
I take part in antenatal team meetings to discuss improvement in antenatal and labor and childbirth care.	33.0(23.3)	50.0(32.9)	43.9(30.2)	47(25.5)	0.01
We experience difficulties in performing diagnostic and therapeutic support in other services when needed.	19.3(25.1)	27.1(21.9)	10.7(21.3)	25.3(28.8)	< 0.01
Electronic patient records facilitate access to information from other health centers.	72.5(27.2)	68.6(31.9)	71.4(27.5)	84.1(17.6)	NS(0.07)
Organization of labor and childbirth care	57.8(12.9)	53.8(12.5)	56(13.8)	57.6(12.5)	NS(0.52)

NUR: nurses; NUR-R: resident nurses; DOC: doctors; DOC -R: resident doctors; SD: standard deviation, NS: Not significant.

clinical decision-making ($p < 0.01$); team discussion of scientific evidence ($p < 0.01$); integrated action between doctors and nurses ($p < 0.01$); encouraging normal childbirth ($p < 0.01$); and undergoing periodic training ($p < 0.01$).

Figure 1 presents the average scores for each hospital. Significant differences were found between the different services across all dimensions ($p < 0.01$), with scores ranging from 50 ± 3 (hospital H3) to 62 ± 5 (hospital H1). The lowest

scores were obtained for dimension 1 (organization of labor and childbirth care) in all the hospitals, with scores ranging from 31 ± 9 (hospital H7) and 49 ± 8 (hospital H1), while the second dimension (evidence-based practices) showed the highest scores, except in hospitals H4 and H9, with scores ranging from 56 ± 7 (hospital H9) and 78 ± 7 (hospital H5). Scores for the third

dimension (work process) ranged from 55 ± 10 (hospital H8) and 66 ± 8 (hospital H4).

Figure 1 presents the average scores for each hospital. The scores of the dimension 1 (organization of labor and childbirth care) ranged from 46 ± 9.8 (hospital H6) and 61 ± 8 (hospital H8). The scores of the second dimension (evidence-based practices) ranged from 52 ± 4.8

Table 3. Average and standard deviation of practices in the second dimension – evidence-based practices. Brasília-DF, 2015.

	NUR (N = 83) M(SD)	NUR-R (N = 28) M(SD)	DOC (N = 116) M(SD)	DOC-R (N = 34) M(SD)	P-value
Normal childbirth occurs on maternity bed in this service.	87.0(24.7)	95.7(15.7)	85.0(26.6)	94.1(9.2)	NS(0.62)
I routinely restrict oral fluid and food intake during labor.	48.4(29.3)	57.9(23.9)	54.3(28.4)	45.3(28.4)	NS(0.16)
I use curtains and/or dividers to ensure mother's privacy during pre-labor.	79.8(29.0)	96.4(12.20)	77.6(29.6)	94.1(11.6)	< 0.01
I encourage the mother to have a companion of her choice.	86.3(25.2)	90.7(23.4)	77.2(28.3)	85.3(23.3)	0.02
I recognize that companions hamper care procedures.	59.0(28.4)	73.6(18.9)	44.7(27.8)	47.6(26.1)	< 0.01
The companion is rarely informed of the mother's status.	56.9(29.7)	59.3(24.6)	62.9(24.8)	60.0(23.1)	NS(0.45)
I give advice on relaxation techniques to help ease pain during labor and childbirth.	86.5(21.7)	97.9(6.3)	87.4(19.3)	85.9(19.4)	0.04
I encourage mobility during labor.	93.5(15.0)	99.3(3.8)	94.1(13.5)	95.9(8.2)	NS(0.18)
I use nonpharmacological pain management methods, such as massages and relaxation techniques.	78.1(24.9)	100.0(0.0)	68.4(27.6)	63.5(28.1)	< 0.01
I allow the mother to choose the position during labor and childbirth.	83.9(22.6)	100.0(0.0)	84.8(20.7)	80.0(23.1)	< 0.01
I routinely perform auscultation of the fetal heart every 30 minutes during active labor.	59.0(26.9)	90.0(14.9)	83.3(20.1)	83.5(17.4)	< 0.01
I use the partograph to monitor labor	50.4(30.0)	82.1(30.5)	60.3(31.5)	64.1(28.2)	< 0.01
I inform the mother of progress in labor.	84.8(23.5)	97.1(7.1)	94.7(13.3)	97.1(7.2)	< 0.01
I promote skin to skin contact in the first 30 minutes after birth.	90.1(19.3)	95.7(8.4)	93.3(14.9)	96.5(7.7)	NS(0.14)
I routinely perform routine enemas in pre-labor.	77.3(11.6)	80.0(0.0)	76.6(11.9)	75.3(12.1)	NS(0.38)
Perineal shaving is routinely performed in this service.	69.9(22.2)	72.1(21.3)	73.8(17.2)	64.7(24.6)	NS(0.13)
Intravenous rehydration is used during labor and childbirth.	21.2(20.8)	30.7(22.1)	32.1(26.2)	34.1(28.5)	0.01
Intravenous oxytocin is used to induce labor.	22.2(20.0)	26.4(21.1)	25.2(20.5)	29.4(24.2)	NS(0.37)
Pushing during the expulsion stage is encouraged.	15.7(22.3)	46.4(30.8)	9.0(15.5)	13.5(22.9)	< 0.01
Routine episiotomy is performed in this service.	31.6(25.4)	41.4(27.7)	49.0(26.3)	58.8(25.1)	< 0.01
I perform the Kristeller maneuver when necessary.	47.0(30.8)	74.3(18.7)	32.8(27.8)	45.3(31.3)	< 0.01
Best obstetric practices	56.3(7.1)	56.4(7.3)	56.5(8.5)	56.2(6.6)	NS(1.00)

NUR: nurses; NUR-R: resident nurses; DOC: doctors; DOC -R: resident doctors; M: mean, SD: standard deviation; NS: Not significant.

(hospital H7) and 58 ± 5 (hospital H8). Scores for the third dimension (work process) ranged from 62 ± 18 (hospital H9) and 77 ± 14 (hospital H3) (Figure 1).

Statistically significant differences in scores between hospitals were found in five of the nine items of the first dimension (organization of labor and childbirth care), notably: prior visit for familiarization with the birth location ($p < 0.01$); educational activities with mothers during prior visits to promote maternal bonding ($p = 0.02$); and difficulties in performing diagnostic and therapeutic support in other services ($p < 0.01$).

Significant differences in scores were found in 13 of the 21 items of the second dimension (evidence-based practices), notably: advice on relaxation techniques to help ease pain ($p = 0.04$); and freedom to choose the position for labor and childbirth ($p < 0.01$). The average score for these items was over 80 in all hospitals. With respect to the items encouraging women to have a birth companion of her choice and nonpharmacological pain management, only two hospitals failed to achieve scores of over 80 ($p < 0.01$). It is also important to stress the differences in scores found in the following items related to obstetric interventions: intravenous rehydration during labor

and childbirth ($p = 0.01$); encouraging pushing during the expulsion stage ($p < 0.01$); performing routine episiotomy ($p < 0.01$); and performing the Kristeller maneuver when necessary ($p < 0.01$).

Significant differences in scores across hospitals were found in seven of the nine items of the third dimension (work process), notably: "following ministry of health recommendations on labor and childbirth care", with average scores of over 80 in all hospitals ($p < 0.01$).

The last question of the instrument asked whether professionals encouraged normal childbirth among friends or family. Positive responses were obtained from 100% of nursing residents, 91.2% of medical residents, 86.7% of nurses, and 78.1% of doctors

Discussion

The findings reveal significant potential and gaps in labor and childbirth care practices in the hospitals studied. The scores for practices related to organization of labor and childbirth care were low among both professionals and hospitals, signaling inadequate implementation¹⁴. Among the

Table 4. Average and standard deviation of practices in the third dimension - work processes. Brasília-DF, 2015.

	NUR (N = 83) M(SD)	NUR-R (N = 28) M(SD)	DOC (N = 116) M(SD)	DOC-R (N = 34) M(SD)	P-value
I follow ministry of health labor and childbirth care recommendations.	85.1(17.9)	95.0(10.4)	89.0(13.5)	93.5(9.5)	< 0.01
Mothers are informed before using interventions to accelerate labor.	72.8(28.4)	77.9(25.1)	91.9(12.1)	92.4(18.4)	< 0.01
Clinical decisions are shared among the shift team.	57.3(27.7)	60.0(24.9)	91.6(16.3)	92.9(10.9)	< 0.01
I discuss scientific evidence regarding labor and childbirth care with my team.	61.0(28.4)	82.1(22.0)	84.1(19.7)	86.5(15.4)	< 0.01
Doctors and nurses work in an integrated manner in this service.	60.7(27.5)	53.6(26.1)	81.0(19.9)	67.6(31.1)	< 0.01
Normal childbirth is encouraged by the multiprofessional team here.	73.7(26.7)	72.1(22.0)	91.0(14.3)	89.4(14.1)	< 0.01
Professionals in this service undertake periodic training.	48.0(24.8)	48.6(22.7)	65.2(24.8)	68.8(21.6)	< 0.01
Satisfaction surveys are conducted with users here.	30.8(19.3)	40.7(25.8)	45.2(23.0)	48.8(20.4)	NS(0.09)
Provision of childbirth care by nurses is restricted only to some shifts (rare).	21.7(29.0)	20.0(28.3)	27.1(27.6)	34.7(28.8)	NS(0.19)
Work process	67.4(15.6)	63.7(15.8)	68.2(15.2)	72.0(11.4)	NS(0.66)

NUR: nurses; NUR-R: resident nurses; DOC: doctors; DOC -R: resident doctors; M: mean, SD: standard deviation; NS: Not significant.

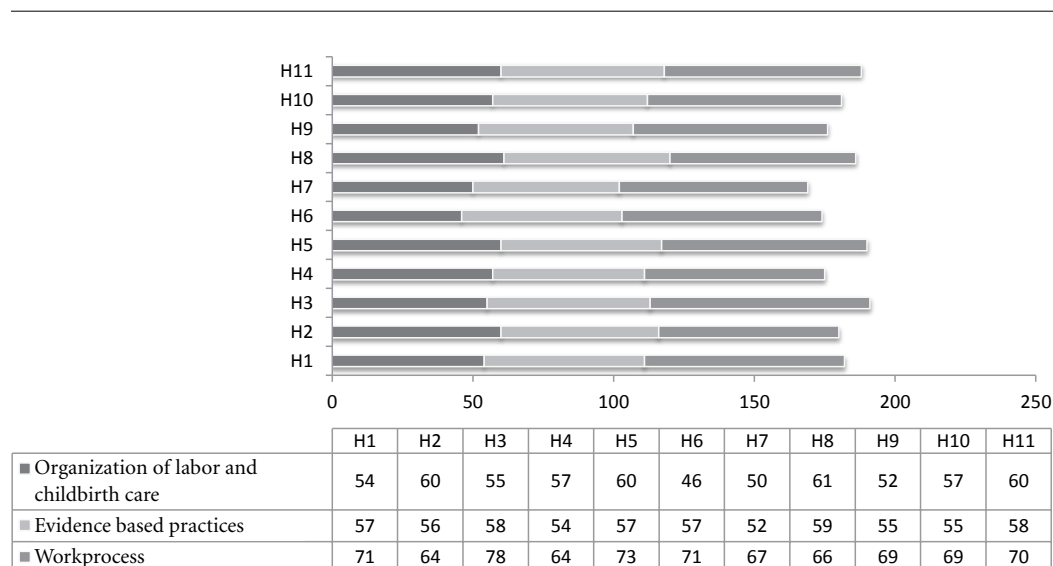


Figure 1. Average scores of hospitals for best practices in obstetric care and changes in care providers' work processes. Brasília-DF, 2015.

hospitals, the findings show gaps in the implementation of ministry of health recommendations, especially for the items relating to maternity care within the defined territory, educational activities, coordination and communication with other birth and low-risk antenatal locations, sufficient staff and bed capacity, and ambience of maternity facilities.

The results of this dimension demonstrate the challenges in changing the organization of healthcare services, which are currently fragmented and isolated, and in adopting an integrated approach. This requires the establishment of horizontal relations between different services in order to develop points of interrelated care with multiple and permanent communication channels¹⁵. Strengthening primary healthcare services, in this study represented by antenatal services, is critical to ensuring quality care, sharing of clinical information, defining childbirth plans, and familiarization of mothers with birth locations. In this respect, the scores obtained by the services demonstrate clear weaknesses in coordination and communication between points of care¹⁶.

In the second dimension (evidence-based practices), implementation was poor in both categories of health professionals and across all hospitals¹. The best scores were obtained for the following practices: presence of a companion; non-pharmacological pain management; auscultation

of the fetal heart during labor; and informing the mother of progress in labor. The findings also show that the following practices persist: use of intravenous rehydration; encouraging pushing during the expulsion stage; routine episiotomy; the Kristeller maneuver; use of early amniotomy; and use of oxytocin to induce labor. These results show that health professionals only partially adopt best practices and are consistent with the findings of Leal et al.¹. There is therefore an urgent need to reshape the labor and childbirth care model, given that many adverse outcomes are directly related the quality of care.

These findings may reflect the professionals' conceptions of humanized childbirth, a matter widely discussed in training programs. Humanization refers to the process that begins in pre-labor, with actions focusing on the newborn, mother and companion developed by a multi-professional team¹⁷.

A study conducted in four public hospitals in Tehran that observed 24 mothers during pre-labor, childbirth and after birth and interviewed 100 mothers after birth showed that professionals adopted best practices together with obstetric interventions. The findings show that restrictions persist in relation to oral fluid and food intake during labor, choice of birth position and mobility during labor, and skin to skin contact immediately after birth. It was also shown that

practices such as use of early amniotomy, use of oxytocin to induce labor, exerting pressure on the bottom of the uterus, and episiotomy persist¹⁸.

A recent overview of 23 systematic reviews (16 Cochrane and 7 nonCochrane) relating to the most common care practices for the management of normal labor and delivery in the first stage of labor concluded that evidence does not support routine enemas, perineal shaving, early amniotomy, continuous electronic fetal heart rate monitoring, and restriction of fluids and food during labor. It suggests that practices such as continuity of obstetric care, encouraging nonsupine positions, and freedom of movement during labor should be routine. Furthermore, it highlighted that there is insufficient evidence to support routine administration of intravenous fluids and antispasmodics during labor and that more evidence is needed regarding delayed admission until active labor and use of the partograph¹⁹.

The third dimension includes practices related to team meetings, joint decision-making, communication between maternity care staff and women in labor, integrated actions conducted by a multiprofessional team, patient satisfaction surveys, recording of information, and the role of nurses in the delivery room. The scores show inadequate implementation of these practices by the health professionals and across the hospitals as a whole.

The findings in this dimension, which refers to attitudes and practices related to the work process, reveal both barriers to and facilitators of change in childbirth care practices. A study conducted in 2007 with professionals from Argentina and Uruguay showed that barriers to change include limited access to information and that participants noted that resistance to change was developed in medical school where they were not trained to view medical knowledge as dynamic²⁰. A study undertaken in Iran between 2013 and 2014 showed that key barriers to adopting evidence-based practices were lack of knowledge and skills, lack of motivation to change or adopt new behavior, lack of decision-making authority, fear of legal action, and poor health professional-patient communication. Other significant barriers included shortage of equipment and inappropriate physical structure of birth settings and the fact that the decisions taken by doctors often go against the norms of best practice²¹. Both studies showed that women had limited capacity to influence change²¹⁻²⁴.

Based on the parameters proposed by Costa *et al.*¹⁴ (score between 50 and 62), the imple-

mentation of ministry of health guidelines in the hospitals is poor. Scores are influenced by care infrastructure, user profile, management models, and whether the hospital has residence programs. With respect to the latter, the existence of a nursing residence program has been shown to have a particularly strong influence²⁴.

The findings of this study, together with those published by the *Nascer no Brasil* (Born in Brazil) survey, raise a number of questions about the quality of obstetric care in Brazil^{1,25}. The findings also reveal significant weaknesses in health information systems, hindering access to patients' medical records and sociodemographic information. These factors weaken coordination between different points of care, especially when it comes to sharing of information and resources between health facilities²¹⁻²³.

Despite the efforts made by the government and professional associations, the findings show that, as in other parts of Latin America, the prevailing model of care in the capital of Brazil is characterized by the medicalization of childbirth, where best practices and unnecessary interventions coexist^{23,24}. Nonetheless, the findings also show the adoption of evidence-based practices¹⁶⁻²⁴. To improve outcomes, health professionals need to experience healthcare settings in which all aspects of labor and childbirth care, from facility structure to routine practices, favor physiological childbirth. Lack of resources and infrastructure to support interventions has been highlighted as a major barrier to providing humanized childbirth care¹⁹⁻²¹.

Our findings show that 84.9% of the respondents encouraged normal childbirth among friends or family. Other studies investigating this type of attitude among obstetric care providers were not identified, highlighting the need for further research into the influence of professionals' beliefs and values on adherence to best practices.

Study limitations include the fact that it was not possible to interview all professionals involved in labor and childbirth care, including nongraduate staff who provide daily assistance to mothers. In this respect, multidisciplinary team working is critical to transforming the obstetric care model and promoting change in practice.

This study provides a valuable contribution to the evaluation of health services, given that it shows the challenges of ensuring compliance with best practices for labor and childbirth care, such as difficulties in maternity settings, relations between care providers, and obstetrics training. The findings therefore constitute an important

input to strategies for enhancing obstetric and newborn care in line with the best practices proposed by the WHO in pursuit of the Sustainable Development Goals, which include the reduction of maternal mortality and ending preventable deaths of newborns.

This study can also contribute to the institutionalization of health evaluations encompassing health professionals' knowledge, attitudes, and practices, given the difficulties in systematizing evaluation tools and obtaining reliable data, documents, and information for this purpose. The findings also indicate a need to change obstetric residency programs, providing more in-depth training and qualification of care providers in order to enhance care management using a holistic, evidence-based approach centered on self-care, humanization, safety, and human rights.

Conclusion

The findings of this study show that strategies are needed to change the obstetric care model and organization of the capital's healthcare system and care provider work processes and to promote a more innovative and less conservative approach to care. Continuing training of care providers should be strengthened, emphasizing best practices in labor and childbirth, and steps should be taken to enhance integration between services and the definition of territories and the population base covered by maternity facilities.

Collaborations

EMP Carvalho and LBD Göttems worked on study conception and design, data collection, analysis and interpretation, and drafting this article; FF Amorim and LA Santana worked on data analysis, the critical revision of the article, and approved the final version to be published.

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