The authors reply

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Expanding the discussion

The authors thank their colleagues for having accepted being discussants of this article on obstetric interventions during labor and delivery of Brazilian women considered to be of habitual obstetric risk. The contribution by each of them made expanded and enriched the discussion, by shifting it from the scientific realm of health to the context of culture, ethics and social relations as a whole.

It is with great excitement and motivation that we respond to their comments, addressing some selected aspects only, due to space limitations of this section.

Guilherme Cecatti made some important notes on methodological issues, particularly addressing the lack of information on the use of forceps in Brazil, in the article. This was suppressed, given the many outcomes addressed in our investigation. However, considering that one of the core purposes of our paper was to present an overview of birthcare in Brazil in women considered at normal obstetric risk, we thank Cecatti the chance of commenting about this topic. The frequency of forceps use was very low, of 1.4% for all women, and of 1.9% for those of habitual obstetric risk, with higher prevalence seen in the Southeastern region, capital cities, and users of the Brazilian Unified National Health System (SUS), as well as in adolescents, white, and primiparous women, without differentiation of the obstetric risk group. In regards to obstetric aspects, there was a higher frequency of all other interventions for those women in which forceps was used, particularly peridural anesthesia, use of ocytocin, Kristeller's maneuver, and episiotomy, which reached the high proportions of 60%, 56% and 86%, respectively. Some studies have shown that the frequency of forceps use in Brazil is low, and the main reason for this obstetric procedure to have been dropped almost entirely was the lack of medical training to qualify doctors to perform surgical vaginal delivery care, and their concern with law suits [1,2]. In our investigation, we had no way to assess the proper use of forceps, and therefore we cannot state whether or not this low rate of use is a positive factor, more so when such procedure is associated to high prevalence of Kristeller's maneuvre, and higher severe morbidity rates and maternal near miss [3] .

Another aspect mentioned by Cecatti was the decision, by the authors, to include in the study women of habitual obstetric risk previously submitted to a c-section. It is correct to imagine that these women may present higher risks during labor and delivery compared to those who did not previously experience a c-section. However, it seemed appropriate not to consider a previous c-section an excluding factor for normal obstetric risk because: (a) in this group, the proportion of women previously submitted to a c-section was the same of the obstetric risk group, 20%. This means that in regards to this aspect, there was no difference between the two groups; (b) scientific evidences show successful experiences in having a vaginal delivery after having had a c-section [4]. The most important international protocols, among them the one of the American College of Obstetricians and Gynecologists [5], indicate the importance of providing women with previous c-section the experience of being in labor, as a strategy to decrease the repetition rate of this surgery. In Brazil, where the rates of c-section are the highest in the world, it is instrumental that such a strategy de in place in the routines of maternity facilities. In our study, more than 80% of women classified as being of habitual obstetric risk with previous c-section were submitted to another c-section, 88% of them being performed without the pregnant women going into labor. The excessive use of c-section in this group discloses a worrisome scenario in Brazil, given the growing tendency of this procedure be performed in primiparous women.

As to the use of epidural analgesia, we agree with Cecatti that it should not be considered unnecessary, but it is striking in Brazil the inequalities in the offer of pharmacological and non-pharmacological pain relief techniques. The birth and delivery care model that does not favor physiological childbirth uses drugs excessively, increases pain and fear of delivery and, paradoxically, to relieve the suffering of the women, uses more drugs.

As for the uterine fundal pressure, there is no evidence of this being beneficial. The potential risks of Kristeller maneuver include uterine rupture, anal sphincter lesion, fractures or brain damage in newborns, among others [6]. Unfortunately we have no way to assess the conditions in which the maneuvre was performed on the women who were investigated in this study; however, we believe it was not performed in more than one third of women classified of presenting

habitual obstetric risk. In a setting of so many interventions and institutional abuse, Kristeller maneuvre should be considered an unnecessary practice until robust evidences of their effectiveness and safety justify their use.

Maria Luiza Riesco highlights the importance of the study and its originality, and draws attention for a possible decrease in the performing of episiotomy, considering the data published by the 2006 *Brazilian National Survey of Demographics and Health* (PNDS). A decrease in the incidence of episiotomy in Brazil might have occurred. However, one should be careful when comparing PNDS data with data from the *Birth in Brazil* study because: (1) PNDS included all women who had a vaginal delivery, and the *Birth in Brazil* study only considered those of normal obstetric risk; (2) PNDS asked about the occurrence of episiotomy in mothers of live births over the past 5 years, and important recall biases may occur. In the *Birth in Brazil* survey, the question was asked in the maternity, in the immediate post-partum; (3) the question PNDS asked was whether or not a cut was made in the vagina (episiotomy) [7], in the *Birth in Brazil* survey, the women were asked about how was their perineum after the birth, and the response alternatives were: It did not rupture, there was no cuts, and no stitches; There was a small rupture that did not need stitches; There were no stitches, but she does not know if there was rupture; There was rupture and she was stitched; They cut and stitched; Could not inform. It was considered that episiotomy was performed in those women who informed having been cut and stitched only, i.e., women who were sure the health practitioner had made an incision in the perineum. If we consider women who told they were sutured, the proportion would be 71% of those who had a vaginal delivery, which is very close to the proportion found by the PNDS. Thus, the question remains on whether we moved forward in this regard, or if the differences in the results of both investigations are due to the use of different methodologies.

Suzanne Serruya addresses the lack of autonomy by the woman to lead childbirth in Brazil, and mentions that the hospital routines establishing what can and what cannot be done are standardizing procedures that set aside "the unique and always particular experience of giving birth". The hospital, as the traditional setting to treat sick people, imposes rules on fasting, being bedridden with an IV line, approaching birthcare to curative-therapeutic practices. The health practitioner is brought into the childbirth setting, and she highlights that the incorporation of scientific-based practices, which respect childbirth ownership by the woman can be very rewarding for them. That would contribute to decrease the asymmetry of power, and would open new possibilities, with a fresh role in labor and delivery, and the development of an environment of creativity and well-being. It must be said that similar to the asymmetry between health practitioners and users of the services, there is asymmetry also among health practitioners: doctors vs. nurses, nurses vs. nursing technicians, etc. Difficulties in working as a team generates an environment of isolation and of experiences not being shared, and, particularly in Brazil, the almost exclusion of the obstetric nurse/midwife in birthcare, just the opposite of what happens in developed countries. In this investigation, only 15% of the births were assisted by an obstetric nurse/midwife, and that was more often seen in areas with few doctors. Yet, it was seen that in vaginal deliveries assisted by obstetric nurses/midwives, the use of good practices were more frequent and obstetric interventions much less performed (data not shown), in accordance with what has been described in the international literature [8].

Serruya also draws attention to the need of changes to occur in the professional training, something we fully agree with, given that the new cohorts of practitioners are being taught according to the same old practices. Thus, priority should be given to teaching hospitals in the development of the "Stork Network" an innovative strategy of the Ministry of Health intended to implement Normal Delivery Centers (NDCs) within hospitals or in their vicinities, while organizing a referral pre-natal care system for hospitals, transportation for the maternity, implementation of good practices for labor and birth, including the right of the woman to freely select a companion of her choice through the period of admission. Another feature of this program is to prioritize obstetric nurses/midwives in assisting habitual risk labor and delivery, in collaboration with the medical team, and also to promote setting adequacy and proper environment for physiological labor, delivery and birth [9].

The Stork Network initiative is targeted to the public health system, which assists more than 75% of the childbirths among the Brazilian population; if it is duly implemented in the public health system, it can change the current birthcare scenario in Brazil, and impact obstetric and perinatal indicators of the country.

Soo Downe pinpoints the financial costs of unnecessary interventions that could be channeled to meet other health needs of the country, with which we agree in full. The 2010 WHO Global Health Report, in regards to the global costs of c-section procedures, noted that the excessive use of this technique was a barrier for the univer-

sal health coverage [10]. This document indicates Brazil and China as being accountable for almost 50% of unnecessary c-section procedures in the world. In Brazil, if we add these costs to other costs for unnecessary interventions on vaginal delivery, we would have an astonishing amount of money wasted in the country.

Another important issue raised by Soo Downe were the ethical principles in the health practitioner/patient interaction, in which the first ethical commitment "*Primum non nocere: First, Do No Harm*" or the principle of non-maleficence, is one of the Hippocratic bioethical principles taught to health-related disciplines students worldwide. This principle is a reminder that health practitioners should always consider the possible harms an intervention may cause. The principle of beneficence, on the other hand, considers whether or not an action or intervention is beneficial enough, and how acceptable and appropriate it is. Despite differences of opinion, there are ideas broadly accepted, one of them being the ethical concept of respect to women in childbirth. In the lack of sufficiently established scientific evidences, for instance, in regards to good obstetric practices on walking [11], eating [12], freedom to select the position for delivery [13] etc., the recommendation is that the woman decides what is best for her.

The origins of the expression "humanization of childbirth" and the assessment of obstetric care as an event that ignores and emotional and social aspects of birth have guided different public policies in Brazil. Many researchers have investigated the understanding of the word "humanization", describing its different (and many a time opposing) meanings, its possibilities of changing the medical culture, the understanding of the anatomy and physiology of women, and gender relations [14].

In regards to the c-section procedure, it is argued that Brazilian women tend to perceive it as safer than vaginal birth, one that provides better quality of care, and, often, as an indicator of differences in social status [15,16]. For some women, their attempt to medicalize the childbirth process is a practical solution to overcome the problems they face within the health system.

In terms of the socio-biological conditions that prompted the rapid increase in the use of technology to initiate, regulate and monitor the childbirth process, it is argued that vaginal delivery is perceived as being of high risk for the health of the woman and for her sexual life, which established the cut-above and cut-below paradigm of c-sections and episiotomies [17].

The lack of consensus about non performing interventions in normal vaginal delivery is most certainly a crucial matter for discussion. To reduce unnecessary procedures, a ministerial ordinance for the Stork Network strategy defined normal vaginal delivery as a birth that started spontaneously, without being induced or expedited, without interventions such as the use of forceps or c-section performance, without the use of general, spinal-block or epidural anesthesia during childbirth [9,18].

Soo Downe adds that recent publications have indicated long-term health hazards from the excessive use of obstetric technologies, such as oxytocin, antibiotics and other drugs, including the development of type 1 diabetes, asthma, multiple sclerosis, allergies, obesity, etc. Even though scientific evidences about these relations are weak, as they depend on a long period of accurate follow-up of birth cohorts, these hypotheses seem reasonable. The development of the epigenetic theory that reinforces the idea of multiple causes and reciprocal influences among the different levels of organization (molecular, cellular, organic, behavioral, and social) greatly enhanced the possibilities of understanding the development of illnesses in humans. [19].

Eugene Declercq is surprisd by Brazl's insistence in systematically increase c-section rates, in opposition to some developed countries that have kept them on a stable, low-level rates, or to some other countries whose levels are not so low but that more recently started to work to lower them, and are being successful. He also questions if those women considered of normal obstetric risk attended by the private sector are different from those served by the public sector, to account for the higher rate of interventions in the former, and how the efforts of the Brazilian Ministry of Health may have influenced the higher frequency of good obstetric practices in the public sector.

We also share the wish of having, fairly soon, better days for childbirth care in Brazil, a country of continental size, with striking social and regional inequalities, which makes the analyses of health indicators and their determinants quite complex. The issues raised by Eugene Declercq are deep and impressive. It is certainly not possible to address them here in details, but we can provide an overview about what goes on in the country.

Childbirth-wise, the past 20 years were marked by intense discussions and conflicts. On one hand, the Brazilian Ministry of Health has been developing governmental initiatives to change the childbirth care model, such as regulating, with ordinances, the role of obstetric nursing/midwives, and the right of a companion

during hospital-stay for childbirth, the implementation of normal delivery centers, the establishment of a maximum number of c-sections per facility, funding for adequacy of hospital settings, training of practitioners to comply with good obstetric practices, among others. The Brazilian Ministry of Health, aware that the development of protocols alone is not enough to change care-delivery practices, have adopted the strategy of having support people to work directly with the local teams to change the care-delivery routines and in the implementation of good practices. This was done, initially, in maternity clinics in the Northern and Northeastern areas of the country, and, more recently, in the whole country through the Stork Network.

However, there was no consensus in the adoption of these strategies. There has been some resistances to change voiced by some professional bodies, which often took some arbitrary measures that were beyond their mandate.

The governmental initiatives and the successful experiences of some clinics, the holding of scientific events where models from other countries were presented took place in tandem with a social movement of women requesting changes in the way birthcare is provided in the country. In consequence, there has been a growing number of discussion groups in social networks, street demonstrations and public rallies, articles about childbirth in the media, and an increase in the number of women who demand childbirth at home.

Over these 20 years, we have also seen an increase in the preference of women for c-section, from the beginning of the pregnancy. Such preference is according to having a c-section performed in a previous pregnancy, and private funding of childbirth. Women assisted by the private sector have higher socioeconomic status, more access to adequate prenatal care, and are seen by the same doctor throughout their pregnancy. It should be noted that, in the private sector, c-section is performed in almost 90% of deliveries, most of them with no medical indication [20,21]. The option for a c-section is not influenced by the doctor only, but by a cultural scenario about the risks of vaginal birth which include a lack of assurance that the woman will have control of her childbirth process, will have a place at the maternity clinic, will have a doctor she knows at the time of delivery, and the fear of pain, among other reasons.

It should be noted that the higher use of obstetric interventions and c-sections in women served by the private sections has been observed in a number of countries around the world, not only in Brazil [22,23,24] .

Finally, to conclude, we revisit the points mentioned by Maria A. Gomes, about the movements set in place in Brazil to change the obstetric care model. The good results found in the Southeastern area, particularly in the cities of Belo Horizonte and Rio de Janeiro, where an ongoing implementation of good perinatal care practices is developed. In Rio de Janeiro and São Paulo, more and more women with private health-care plans seek public maternity clinics to give birth, because of the option of having normal vaginal delivery, which is becoming rare in the private sector.

A relevant aspect we share is a national investment to qualify obstetric nurses/midwives, and the recent change in opinion of the Brazilian Federation of Gynecology and Obstetrics (FEBRASGO), which has passed to advocate practices known to increase the satisfaction of pregnant women with vaginal delivery, support of the Normal Delivery Centers, and the presence of obstetric nurses/midwives in birthcare, even in the private sector. This facts show an appreciation of scientific evidence-based obstetrics, fostering the hope that the model will effectively change.

The results shown in this study, of a smaller proportion of obstetric interventions in the Southeastern region may indicate a trend that will be consolidated with an increased role performed by the women in defining childbirth care policies, and improvement of the quality of such care in the Public Health System.

It was not by chance that the *Birth in Brazil* investigation took place at this point in time, with public funding, to unveil, for the first time on a national level, the scenario of delivery and childbirth care in Brazil. In order to change, all the players, institutions, non-governmental organizations, health practitioners, social movements, mothers, and families need, first of all, be aware, and bothered by this reality. We hope the *Birth in Brazil* investigation is of help in the completion of this step.

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