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Original Article

Non-invasive technologies in assisting high-risk parturient women: nurse-midwives' perceptions

Tecnologias não invasivas na assistência às parturientes de alto risco: percepções de enfermeiras obstétricas

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ABSTRACT

Objective: to know nurse-midwives' perceptions about factors related with the use of non-invasive care technologies in the care of high-risk parturient women. **Methods:** qualitative study, with 10 nurse-midwives from the obstetric center of a high-risk maternity hospital in a university hospital. Data were collected by semi-structured interviews and subjected to content analysis. **Results:** prenatal care with a focus on female autonomy, the availability of specific materials and the sector's infrastructure are facilitating factors. Work overload, the devaluation of nurse-midwives' knowledge by some medical professionals and the lack of institutional support for teamwork are limiting factors. **Conclusion:** the factors referred to show the need to boost collaborative work in assisting high obstetric risk, encourage the use of non-invasive care technologies and improve nurses' working conditions.

Descriptors: Obstetric Nursing; Technology; Pregnancy, High-Risk; Nursing Care.

RESUMO

Objetivo: conhecer as percepções de enfermeiras obstétricas sobre os fatores relacionados com o uso das tecnologias não invasivas de cuidado na assistência às parturientes de alto risco. **Métodos:** estudo qualitativo, com 10 enfermeiras obstétricas do centro obstétrico de uma maternidade de alto risco de um hospital universitário. Os dados foram coletados por meio de entrevistas semiestruturadas e submetidos à análise temática de conteúdo. **Resultados:** a assistência pré-natal com o enfoque na autonomia feminina, a disponibilização de materiais específicos e a infraestrutura do setor são fatores facilitadores. A sobrecarga de trabalho, a desvalorização dos saberes das enfermeiras obstétricas por alguns profissionais médicos e a falta de apoio institucional ao trabalho em equipe são fatores limitadores. **Conclusão:** os fatores referidos evidenciam a necessidade de impulsionar o trabalho colaborativo na assistência ao alto risco obstétrico, incentivar o uso das tecnologias não invasivas de cuidado e melhorar as condições laborais das enfermeiras.

Descritores: Enfermagem Obstétrica; Tecnologia; Gravidez de Alto Risco; Cuidados de Enfermagem.

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Introduction

The relevance of qualified and safe care for high-risk pregnancies lies in the fact that the main causes of maternal death come from preventable situations through the guarantee of early access to prenatal care, risk classification, bonding, assistance multidisciplinary and interdisciplinary at different levels of complexity, with shared clinical practices based on scientific and adoption of good obstetric practices[1-2].

Moreover, welcoming, a sensitive approach to subjectivities and emotional support are essential for comprehensive assistance to high-risk pregnancies, considering the biopsychosocial repercussions of obstetric risk for women, who experience related anxieties, anxieties and fears with gestational outcome, which can culminate in the perception of loss of autonomy and personal inability to control morbidity and the body itself[2].

In this context, the performance of nurse-midwives adds humanistic values, as they understand that clinical-biomedical reasoning is not the only alternative to understand and explain phenomena of life and the health-disease process and, therefore, admit that different care options and strategies can and must live with the autonomy and right of choice of women[3].

Under this perspective, although due to ethical and legal issues in the exercise of the profession, the isolated care of nurse-midwives in the delivery of high-risk pregnant women is not foreseen, these specialists can contribute with a humanized, safe, qualified care with a high degree of satisfaction for women with the use of non-invasive care technologies, defined as a set of structured knowledge whose main purposes are: to encourage female autonomy; to favor parturition, with a minimum of intervention and invasion on the body of women; and to promote a positive and pleasurable experience of giving birth[3-5].

The attribute non-invasive resides in the way nurses relate to women, i.e., in attitudes that subvert the medicalized obstetric logic. For this reason, non-invasive care technologies predominantly involve actions that nurses develop in a shared way with parturient women, such as: offering emotional support and guidance; sensitive and continuous monitoring; demonstrations of availability, welcoming and empathy; incentive for the companion's participation; valuation of subjectivities; respect for the role of women; and promoting well-being. It is noteworthy that some of these actions can be mediated by industrial instruments, such as radio for background music, Swiss ball, birthing stool, shower, bathtub, stool ,and essential oils[3].

Despite the positive obstetric results resulting from this care process, it is known that nurse-midwives may face difficulties in using non-invasive care technologies, especially in highly medicalized environments, such as those found in high-risk maternity hospitals, where they predominate the focus on pathology, biomedical knowledge and interventions[2-4,6]. In this context, the following question emerged: What factors are related to the use of non-invasive care technologies in assisting high-risk parturient women in nurse-midwives' perceptions?

Considering that in scientific literature the approach of these technologies prevails in situations of habitual risk, this research offers subsidies for the qualification of obstetric care for high-risk parturient women, since nurse-midwives must develop their care focused on these women and not on the morbidity feature. Thus, these specialists need to recognize the importance of their care process, as well as high-risk care settings should favor the use of non-invasive care technologies.

Considering the exposed, this study aimed to know nurse-midwives' perceptions about factors related with the use of non-invasive care technologies in the care of high-risk parturient women.

Methods

This is a qualitative study carried out with ten nurse-midwives who work in the obstetric center of a high-risk maternity hospital in a university hospital in the state of Rio de Janeiro, Brazil. The choice of this

setting is justified because it is a tertiary reference unit in attendance to high maternal risk that, in 2017, performed 385 cesarean sections and 243 normal deliveries, in addition to other obstetric procedures.

Specialists in nursing-midwifery, working for at least six months in the institution's obstetric center, understood as sufficient time for workers to integrate into the work process and build perceptions about its dynamics, were included. Professionals on leave of any kind during the data collection period were excluded. Thus, of the eleven nurse-midwives who work in that sector, only one was not included in the survey due to sick leave.

Data collection was carried out by one of the authors in the period from July to August 2017 by through in-depth semi-structured interviews, guided by the following open-ended questions: Are there factors that favor the use of non-invasive care technologies in your practice as a nurse in the obstetric center? Do you find it difficult to use these technologies? Tell me about the circumstances involved in your work in assisting at-risk women. In addition to these questions, the script also included participants' sociodemographic and professional variables such as sex, age, training time and performance in assisting the birth process in the institution, academic titles aggregated after graduation, and characteristics of working hours at the maternity hospital.

The recruitment of nurses started with a previous contact, by phone or face-to-face approach at the institution and, after the acceptance of participation, a meeting was scheduled to carry out the individual interview, in an environment of participants' choice and with guaranteed privacy. All interviews took place at the workplace, before or after the shift, and had an average duration of 60 minutes, being recorded in audio files, with their subsequent transcription, without using any software.

It is noteworthy that a pilot interview was carried out, which revealed the suitability of the instrument and, therefore, was included in the analysis corpus. Also, it is noteworthy that there were no refusals or losses of participants during the data collection process, which ended with the inclusion of all eligible participants in the study.

As a technique of analysis, thematic content analysis was adopted, involving pre-analysis, for systematization of ideas emerged from the interviews, followed by text skimming, material exploration and organization, for definition of registration units, and coding, when the units of meanings were identified and grouped into larger sets[7]. This last phase was reviewed by two doctoral researchers and members of the research team, culminating in two thematic categories: Factors that facilitate the use of non-invasive technologies in assisting at-risk pregnant women and Limiting factors in the use of non-invasive technologies in assisting at-risk pregnant women, with 26 and 109 registration units, respectively.

In compliance with the ethical and legal aspects of research with human beings, participants signed the Informed Consent Form, explaining voluntary participation and the maintenance of anonymity. For that, the letter N was adopted for the interviewers, followed by an Arabic number, representing the order of the interviews. The project was approved by the Research Ethics Committee of *Universidade do Estado do Rio de Janeiro*, under Certificate of Presentation for Ethical Consideration (*Certificado de Apresentação para Apreciação Ética*) 64217016.7.3001.5259 and Opinion 2,171,248/2017.

Results

Participants are female and are, on average, 37 years old, with 13 years of graduation and eight years of experience in assisting the birth process at the institution. In relation to professional training, eight have only a certificate of specialist in nursing-midwifery and two added other academic titles, since one of these nurses granted the title of master and the other, the title of doctor. With regard to working hours at the maternity hospital, these professionals work on a 12-hour shift, in the day or night, at 60-hour intervals.

Factors that facilitate the use of non-invasive technologies in the care of at-risk pregnant women

This category revealed that nurse-midwives consider prenatal care with a focus on autonomy and women's rights as facilitators for the use of non-invasive care technologies in the birth process of women with high-risk pregnancies: *The technologies must be worked on since the prenatal period because it is useless to arrive at the time of delivery and I offer it all without her having previously known about it.... you have to empower women also in prenatal care regarding the use of technologies!* (N01). *From the moment she is empowered since prenatal care, when she comes to give birth, she will already come with those constructions that she had throughout her life deconstructed because throughout prenatal care she will break this!* (N02). *Encouraging prenatal care, guiding women to collect their rights as citizens. Because technologies are also equal rights! If she knows that these technologies are here and that they can bring benefits, the woman will charge! This charge will directly reflect on the practice of that professional who is watching* (N10).

Other facilitating factors mentioned were the maternity obstetric center's structure, which favors individualized and private assistance, and the institutional availability of instruments for use of some non-invasive technologies such as: *Swizz ball, birthing stool, and massagers, you have it in all pre-births! And, in terms of structure, you have an individualized pre-delivery! You can stay there: you, the patient and the companion!... here, you have patients' privacy guaranteed!* (N04). *The physical structure! They have conditions for being pre-delivery, delivery and puerperium beds and for favoring privacy, walking, the bath... there are equipment: massager, ball...* (N09).

Limiting factors for the use of non-invasive technologies in assistance to high-risk parturient women

This category showed that nurses' workload, resulting from the development of diverse tasks in the same work shift, was considered as a factor that negatively interferes with the use of non-invasive care technologies: *There are days when you end up having to provide assistance to a serious woman who is arriving, for one in the cesarean section, for one with a normal delivery or for one with broken bag. So, you end up prioritizing and leaving technologies aside. Provide direct assistance to those who need it most* (N05). *Most of the time, you have to deal with many things... unstable patients! And you have no way to dedicate yourself, for example, to a woman in labor. So, there is not always time... there is not always the way to use technologies. We often try, but end up doing what we get* (N07).

Furthermore, they also highlighted the devaluation of nurse-midwives' knowledge by some medical professionals and the lack of institutional support for teamwork: *We realize that they -the physicians- do not respect us! ... If there was support, a dialogue between the nursing and medical heads... so, to be working together!* (N02). *The medical team's attitude towards us... of not having a partnership with us! But, regardless of appreciation, the respect, whether they believe it or not, whenever I have the opportunity to use technologies with women, I do.* (N03). *It turns out that you work a woman, the physician arrives, does a neck reduction, breaks a bag and intervenes in some way that is totally out of our vision and our proposal* (N04). O*ne day I was using a shawl* (pelvis movement technique)*, it was with music, dim light... and the medical resident said, "I am trying to understand what is it that you are doing?" But she didn't say that as something she was interested in learning. She spoke ironically!* (N06).

Despite these difficulties, most of them use non-invasive care technologies, however, they underline feelings of devaluation and demotivation: *I try to offer, in a subtle way, bathing, walking, breathing and dim light because they have to have this support! They already have a very heavy emotional burden due to pathology... but we have a lot of work philosophies that discourage us from using technologies. There are interventions that they* (medical professionals*) make and we do not know why they do not evolve in the medical record!* (N05). *The difficulty is that there is a team that does not leave, does not speak directly to you or makes fun... you are a little shy about using technologies. Even so, we use it, but it is a factor that inhibits it a little.* (N07). *There is a lack of greater interaction with the medical team and their involvement because it seems that we live in a different world from theirs! They don't believe in technologies and we do. It is a counterpoint of ideas and it is a struggle!... it ends up discouraging!* (N08).

Discussion

As a limitation of this study, we point out the fact that this was carried out in a single high-risk ma-

ternity, highlighting the need for further investigations in these care settings. However, the facilitating and limiting factors of the use of non-invasive care technologies evidenced are similar to those found in larger researches, which reveal that the organization of work and the predominance of the biomedical model impose challenges to the performance of nurse-midwives with these technologies, even in low-risk maternity hospitals.

Thus, the results obtained point to importance of management to boost collaborative work in assisting high-risk parturient women, encourage the use of non-invasive technologies and promote improvements in the working conditions of nurse-midwives, with a view to qualifying and safety of obstetric care in this setting. Furthermore, it is recommended to carry out observational surveys and intervention, which address the strategies adopted by nurse-midwives for the use of these technologies and the institutional initiatives aimed at mitigating the critical nodes related to with performance of these specialists in the context of high risk in the perspective of collaboration and interprofessionality.

Among the participants in this study, it was found that prenatal care with a focus on autonomy and women's rights is a facilitating factor for the use of non-invasive care technologies in the parturient process of high-risk parturient women. Access to information during pregnancy, especially knowledge about childbirth and birth, equips women to exercise their rights in health care, making them confident to participate in decisions about their care, claim their role and choose, among other obstetric practices, the use of non-invasive technologies of care, for to experience parturition with satisfaction and respect to their citizenship[6,8-9].

In this sense, as mediators of educational activities with pregnant women, nurses must understand that relational skills are essential to promote the exchange of knowledge and experiences; problematize social constructions about gestating, giving birth and being born; deconstruct myths crystallized in common sense; and to favor the autonomy of women based on clarifications about the power of the female body in the processes of pregnancy and parturition, as well as the different possibilities of using non-invasive technologies of care in labor and delivery[8-9].

According to participants' perception, nurses' educational actions in prenatal care are relevant to promote the autonomy of pregnant women and, consequently, favor the use of non-invasive care technologies at the time of delivery. However, it is considered that the promotion of autonomy is an attribution of all professionals who work in the line of health care for women, since that the exercise of this right can be limited in different care spaces in face of impersonal, authoritarian practices and standardized, unnecessary obstetric interventions and attitudes of trivialization of subjectivities[6,8].

As other facilitating factors, nurse-midwives pointed out the obstetric center's infrastructure, which offers individualized rooms with pre-delivery, delivery and puerperium beds, and the availability of specific materials for the use of some non-invasive care technologies, such as Swizz ball, birthing stool, massagers, and shower.

The appropriate infrastructure of obstetric centers involves furniture, equipment, supplies and interpersonal relationships that promote human, welcoming and resolving actions. In this context, the implementation of places for obstetric care at all stages of parturition and birth, such as rooms with pre-delivery, delivery and puerperium beds, is essential to create an atmosphere of privacy and comfort, which provides well-being, favor the welcoming of the companion and encourage the women's active participation. It is also added the offer of areas for walking and instruments used for relaxation, pain relief and stimulating the physiological evolution of labor[10-11].

On the other hand, in this study, factors limiting the use of non-invasive care technologies by nurse-midwives in assisting at risk pregnant women were revealed, with emphasis on work overload, resulting from of accumulation of the functions performed by generalist nurses and specialists in nursing-midwifery, as well as managerial and assistance activities.

To this end, there is a nursing team composed of less than the institution's service demands. In this context, they feel frustrated by the only option left to them: prioritize assistance to women who need closer monitoring to the detriment of comprehensive care, with the provision of non-invasive care technologies for all parturient women[4,11-13].

These characteristics of participants' work process reveal the intensification of work, which is a worldwide phenomenon typical of the capitalist mode of production. With deleterious repercussions on various professional categories in the public and private sectors, this process reveals exploitation, resulting from a historical construction of obtaining more work, which tends to weaken the collective capacity of workers to question problems, protect their health and reflect on labor[12-13].

In nursing work, the intensification results from the deficit of workers, the excessive workload and pace, the specificity of caring for several patients, the diversity of managerial and care functions, as well as psychic wear, inherent to professional activities developed in the hospital environment. Consequently, these working conditions have a negative effect on the quality of care, the well-being and satisfaction of workers, triggering depersonalization and demotivation at work[4,11-14].

Some of these repercussions were identified in participants' speeches, because, when reporting the circumstances involved in working with high-risk women, they find themselves unmotivated and discouraged from using non-invasive care technologies. According to them, these feelings emerge from situations of devaluation of their knowledge, by some medical professionals and the lack of institutional support for teamwork.

This finding suggests that collaborative work in the care of high-risk parturient women is a challenge to be overcome in the context of this study. Interprofessional collaboration understands the organization and provision of assistance as a responsibility shared by different health professionals, who have skills and distinct knowledge, which act autonomously and interrelate through negotiations to meet women's needs and respect for their values and preferences, actively involving them in the management of their health and in making decisions about their care[15-17].

Collaborative work in obstetrics is a reality in countries such as Canada and the Netherlands, where the practice is shared between family physicians and nurse-midwives, or even between these and obstetricians in the context of care for low-risk pregnancies. On the other hand, in the United Kingdom, France, Australia and New Zealand, nurse-midwives attend, in collaboration with physicians, to pregnancies with complications[15].

As determinants of collaborative arrangements in health care, the following stand out: interactional factors, which correspond to the relationships between professionals based on trust, mutual respect and open communication; organizational factors, expressed in institutional culture, professional philosophy, team resources and administrative support; and systemic factors, involving social aspects, such as power, status and care management[18].

Many health systems face barriers to the effectiveness of collaborative work, as is the case in Brazil, especially due to professional rivalries, philosophical differences, hospital rules and regulations, deficit in human resources and absence of an institutional culture of interprofessional collaboration[17,19].

As the results of the present study indicate, the distances between medical staff and nurse-midwives originate from interactional, organizational and systemic factors, which influence the autonomy, scope of action and collaboration between these two professional groups. It is noteworthy that this panorama is even more challenging for collaborative work in tertiary university hospitals, places where nurses with a non-interventionist view of care can experience situations of conflict in the face of an interventionist culture and the hierarchical nature of the hospital, where physicians have differentiated occupational status and positions of influence[4,13-14,17-20].

In this sense, the behaviors of medical professionals identified in participants' statements can be

seen as a failure to recognize the role of nurse-midwives in assisting high-risk parturient women, enhanced by institutional management that does not seem to foster collaborative work. It is worth mentioning that this work configuration interferes in the autonomy of nurse-midwives and can trigger experiences of suffering due to the lack of social significance of their activities and destabilization of their professional identity[13-14,19].

For these specialists, non-invasive care technologies are referential identities that generate belonging, confer distinctions and create representations for society. Therefore, as a way of preserving the biomedical logic and its status in the institution, medical professionals devalue nurses' knowledge in an attempt to disqualify their care process[3,11,13-14].

Although the study setting is a reference maternity hospital for high obstetric risk, the care profile does not prevent the performance of nurse-midwives in assisting parturient women, as their practice is legally supported their care; their care, when involving the predominant use of relational technologies, favors the exercise of citizenship and contributes to the effectiveness of public policies in the perspectives of quality, safety, humanization and satisfaction of women with health care[3-4,6,9,11,13-14].

Therefore, it is important that institutional management recognizes the values associated with the performance of nurse-midwives, with the use of non-invasive care technologies. Therefore, an analysis of the current situation of teamwork is necessary, together with the development of permanent education to promote collaborative work based on the following perceptions: women occupying the centrality of care; the team has a shared vision of assistance, acts by integrating their knowledge to achieve common goals and understands that leadership is situational and dynamic; therefore, communication is essential[16-17,19-20].

The incorporation of these principles by the team members translates into an interprofessional culture that is a precursor to collaborative work in obstetric care, which has been presenting an expressive potential for implementing evidence-based practices and reversing unfavorable rates of maternal and neonatal morbidity and mortality, through the appropriate use of technologies and the reduction of unnecessary interventions[15-16,19].

Conclusion

Nurse-midwives consider that prenatal care with a focus on female autonomy, the availability of specific materials and the obstetric center's infrastructure are factors that facilitate the use of non-invasive care technologies in assisting high-risk parturient women. However, the organization of the work of these specialists in this place imposes situations that limit this use, such as work overload, the devaluation of their knowledge by some medical professionals and the lack of institutional support for teamwork.

Collaborations

Ares LPM and Prata JA contributed to the design of the project, data collection, analysis, interpretation and article writing. Progianti JM and Pereira ALF collaborated in the relevant critical review of intellectual content and in the approval of the final version to be published. Mouta RJO, Amorim LB and Gioia LG collaborated in article writing.

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