Original Article
doi: https://doi.org/10.1590/1983-1447.2022.20210155.en

Complexity of high-risk pregnancy care in the health care network

Complexidade do cuidado da gestante de alto risco na rede de atenção à saúde

Complejidad de la atención a la embarazada de alto riesgo en la red de atención la salud

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How to cite this article:
Rodrigues DB, Backes MTS, Delziovo CR, Santos EKA, Damiani PR, Vieira VM. Complexity of high-risk pregnancy care in the health care network. Rev Gaúcha Enferm. 2022;43:e20210155. doi: https://doi.org/10.1590/1983-1447.2022.20210155.en

ABSTRACT

Objective: To understand the complexity of high-risk care for pregnant women in the health care network.
Method: Qualitative study with theoretical framework of Edgar Morin's Complex Thought and Grounded Theory methodology, Strauss's version. Data collection by theoretical sampling, including twelve health professionals and seven women users of the care network in a municipality in the south of Brazil from July to October 2018. Analysis by open and axial coding and selective integration.
Results: The phenomenon "Caring for high-risk pregnant women in the health care network", comprises four categories: Noticing autonomous decision making; Promoting care; Developing multiprofessional work; and Accessing the health care network.
Conclusion: Every high-risk pregnant woman should be seen as a singular and multidimensional being with comprehensive and continuous care, considering the complexity of local, regional, and global reality.
Keywords: Delivery of health care. Prenatal care. Pregnancy, high-risk. Health services.

RESUMO

Objetivo: Compreender a complexidade do cuidado da gestante de alto risco na rede de atenção à saúde.
Método: Estudo qualitativo com referencial teórico do Pensamento Complexo de Edgar Morin e metodológico da Teoria Fundamentada nos Dados, versão Straussiana. Coleta por amostragem teórica, participaram doze profissionais de saúde e sete mulheres usuárias da rede de atenção em um município do sul do Brasil no período de julho a outubro de 2018. Análise por codificação aberta, axial e integração seletiva.
Resultados: O fenômeno "Cuidando da gestante de alto risco na rede de atenção à saúde", compreende quatro categorias: Percebendo a autonomia na tomada de decisões; Promovendo o cuidado; Desenvolvendo um trabalho multiprofissional e Acessando a rede de atenção à saúde.
Conclusão: Toda gestante de alto risco deve ser vista como um ser singular e multidimensional com cuidado integral e contínuo, que abrange a complexidade do real a nível local, regional e global.
Palavras-chave: Atenção à saúde. Cuidado pré-natal. Gravidez de alto risco. Serviços de saúde.

RESUMEN

Objetivo: Comprender la complejidad de la atención a la embarazada de alto riesgo en la red de atención a la salud.
Método: Estudio cualitativo utilizando la teoría del Pensamiento Complejo de Edgar Morin y la Teoría Fundamentada en su versión Straussiana como metodología. Dados colectados por muestreo teórico. Participaron doce profesionales de la salud y siete mujeres usuarias de la red de atención de un municipio del sur de Brasil de julio a octubre de 2018. Análisis por codificación abierta y axial e integración selectiva.
Resultados: El fenómeno "Atención a embarazadas de alto riesgo en la red de salud", incluye cuatro categorías: Percepción de autonomía en la toma de decisiones; Promoción de la atención; Desarrollo de trabajo multiprofesional; y Acceso a la red de salud.
Conclusión: Toda embarazada de alto riesgo debe ser vista como un ser singular y multidimensional, recibir atención integral y continua, que considere la complejidad de la realidad local, regional y global.
Palabras clave: Atención a la salud. Atención prenatal. Embarazo de alto riesgo. Servicios de salud.

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INTRODUCTION

Pregnancy is a period of transformation, hope, anticipation, and preoccupation for women and their families[1]. It is a natural physiological event, but when associated to risk factors, it may lead to disability or to the death of mother and/or fetus[2]. Adequate prenatal care ensures the progress of pregnancy, enabling the birth of a healthy newborn, with no impact on the health of the mother[3].

87% of pregnant women around the world have access, at least once, to prenatal consultations with qualified health workers, and less than three in five pregnant women have four prenatal consultations. These percentages do not consider the level of ability of the health professional or the quality of care provided, factors related to whether the care will actually bring health improvements to mother and newborn[4].

The World Health Organization updated its recommendations from a minimum of four to a minimum of eight prenatal consultations to reduce perinatal mortality and improve the experience of women in this type of care. However, there are still variations in prenatal consultations from country to country.[5]. In Brazil, there is a recommendation for at least six prenatal consultations, the first of which is up to the twentieth week of pregnancy[6].

The Mother-Child Network, created in 2011 with the name *Rede Cegonha* (the Stork Network) and consolidated by Decree No. 3 from 28th September, 2017, emerged as a strategy to implement a network of care that provides women with the right to prenatal, labor, and childbirth, as well as attention to the puerperium and integral care to the child up to two years old, in addition to a logistic system (sanitary transportation and regulation). The prenatal component requires one to understand the care to the pregnant woman around the network, and to understand their actions to reach active and resolutive care[7].

Prenatal care can be understood as a complex type of care, among other reasons, due to the metabolic and hormonal changes required to maintain and develop the fetus, such as through interactions/interrelations of the points of care that form a network of care. Interactions/interrelations are here understood as the influence of elements one on another. Complexity is relative, and increases with the number of components in a system, the number of relations between them, and the uniqueness of these relations[8].

Although prenatal care uses criteria to evaluate quality, such as access, number of consultations, or gestational age at the beginning of follow up, the complexity of the care provided to the pregnant woman must be considered, especially to those considered as being under high-risk. The care provided should include shared, thorough, and comprehensive professional follow up, with the identification of risk factors and warning signs. An early adequate identification requires knowledge about obstetric physiopathology and the search for specialized services[9].

Caring for high risk pregnant women should be a process seen as unique, involving interactions, reflection, and self-knowledge, respecting and accepting the singularities of the pregnant woman as an active participant opf the process. For this care to be provided with quality, we ask the question: How do high-risk pregnant women receive attention in the health care network?

The relevance of this study is defined as it provides subsidies to improve the practice of care. Therefore, the objective of this research is to understand the complexity of high-risk pregnant care in the health care network.

METHOD

Qualitative study Edgar Morin's Complex Thought was used as a theoretical reference[8]. The methodological reference that conducted this study was the Data Based Theory, considering Strauss's version[10], seeks to understand social phenomena through the meaning of relations and interactions between subjects, allowing one to go beyond description, searching for the creation or discovery of a theory in a process or action that can explain the manner in which people are experiencing a phenomenon[10–11].

The study was carried out in a city in the South of Brazil. The municipal health care network for the attention of pregnant women in their prenatal, delivery, and puerperium, was formed by 15 family health teams, an outpatient clinic specializing in gynecology and obstetrics, and a regional general hospital. Two maternity wards are licensed and the main referral points for the delivery and prenatal care of high-risk pregnant women. The distance between them was of 214.1 km and 217.2 km, respectively.

The participants were selected using theoretical sampling[10]. Data collection started with people who would be able to provide pertinent answers to the question and to the objective of our investigation. The participants were 12 health professionals, who are graduated and work in the fields of nursing and medicine, including 10 nurses and 2 physicians. 7 nurses worked in family health teams that carried out prenatal follow ups in their area of action. Each team was formed by at least one nurse, one physician, one dentist, one dental office auxiliary, two nursing technicians, and four community health agents. Three nurses and two physicians interviewed worked in the outpatient clinic specialized in gynecology and obstetrics and were part of the team of this service. One of the physicians also worked in the regional general hospital located in the city.

According with the results of the collection and analysis of the first points of data, the other interviewees were chosen according with the need of the study to delve deeper into its subject. The sample was not defined *a priori*. We considered the hypothesis that, to understand the entire process of care to the high-risk pregnant women, it would also be pertinent to know the personal experiences of women who were in this situation. This triggered the search for a new sample with different subjects. It included six pregnant women and a woman in her puerperium, all of whom were receiving care in the health care network as high-risk pregnancies. These women were identified and selected as they were waiting for consultations with the team of the outpatient clinic specialized in gynecology and obstetrics.

The formation of sample groups with different participants, but whose experiences were relevant for the study of the phenomenon being investigated, is one of the strategies to obtain a theoretical sample[11]. Sample size was determined through the theoretical saturation of data, that is, when the information already acquired was considered to be sufficient and new information added no new concepts[10].

For inclusion as participants, health workers had to be in their current position for six months or more and to be working in family health teams and/or in outpatient clinics specialized in gynecology and obstetrics. The criteria for the inclusion of the pregnant women was to be going through a high-risk pregnancy confirmed by clinical diagnosis. Women in their puerperium were only included if their labor had not taken place more than 40 days prior.

Health workers were excluded when they were absent from work due to vacations or any type of work leave Women who were pregnant or in their puerperium were excluded when their prenatal and/or post-natal consultations were not carried out in the health care network and when they lived in a city other than that were the research was being carried out.

Data collection took place from July to October 2018. The interviews took place in the work environment of each worker and in the specialized outpatient clinic waiting room, with no limits to the access. The participants were free to choose the best place, date, and time for the interview. Interviews were recorded in an electronic audio device and lasted for a mean of 15 minutes. They were stored in a a voice recorder and transcribed in full using *Microsoft Office Word®*. They were validated by the participants and input in the software *ATLAS.ti®*, version 8.0, which was used to organize and analyze the data. No participant abandoned the research.

The first question for health professionals was: What does caring for high-risk pregnant women in the health care network mean to you? We believe that this question was open and had a broad range that allowed exploring, starting with it, the clinical practices in the care for the high-risk pregnant women, in addition to the meaning that these professionals attributed to it. Regarding the pregnant women and the women in their puerperium who participated, the interview was carried out similarly; it was open and broad, but the first question regarded their experience about the follow up of their high-risk pregnancy in the health care network.

Data analysis took place using open and axial coding, in addition to selective integration. Through these processes, data were categorized in preliminary and conceptual codes until the main categories were determined. The paradigmatic model used to facilitate the work, proposed by Corbin and Strauss (Figure 1), made it possible to establish theoretical connections between the categories and to connect these with the main category by ordering them according with conditions (reasons provided by the participants as necessary for a fact to happen, as well as how they explained their responses to specific actions), actions-interactions () responses from participants to problem events or situations) and consequences (predicted or real results to actions-interactions)[10–11].

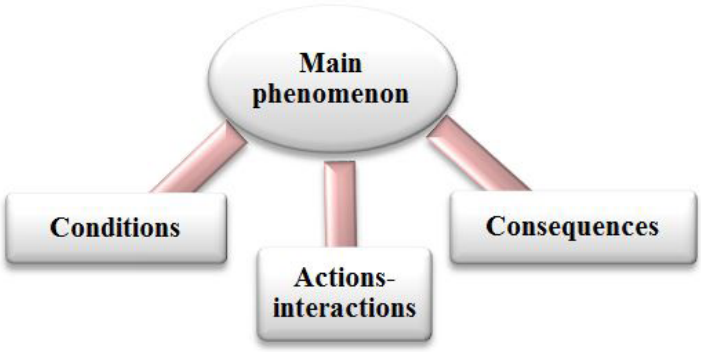

Figure 1 – Paradigm model.
Source: Authors, 2018.

During the data collection and analysis, memos and diagrams were used to register reflections and interpretations. The study was approved by the Research Ethics Committee for Research with Human Beings under protocol No. 2.772.140/2017, following recommendations from Resolutions No. 466/2012 and 510/2016 from the National Council of Health. The participants consented participation by signing the Free and Informed Consent Form and their statements were identified using the letters "P" (professionals) and "U" (users), coupled with a number indicating the order in which the interviews happened.

RESULTS AND DISCUSSION

The 12 health workers who participated in the study were females, with a mean of 36.2 years old, who were graduated and worked in the fields of nursing and medicine. They had worked in their field for a mean of 11.2 years.

The pregnant and puerperium women who participated had a mean age of 24.5 years old. One had elementary education, five had finished high school, and one had higher education. Regarding their occupation, five worked in formal jobs. Their family had a mean of 3.4 people and they had a mean of 2.6 children.

Starting with the analysis and interaction of data, the substantive theory and its four categories were created (Figure 2).

The categories are presented according with analytical components: Conditions (Noticing autonomous decision making), Actions-interactions (promoting care and developing multiprofessional work), and Consequences (accessing the health care network), as described in Figure 2.

Noticing autonomous decision making

The autonomy of the practice of nurses when caring for high-risk pregnant women in primary care stood out in regard to the making of decisions related to assistance which involved referring these women for another level of care. The nurse has a strategic role in prenatal care and their actions include nursing consultations with autonomous provision of care.

> *Depending on the risk, the physician may or may not participate. I contact the head nurse of the clinic and she schedules a more urgent consultation. This process is no difficult for me to do. When I find a high-risk urgent case, I refer it directly to the hospital.* (P04)

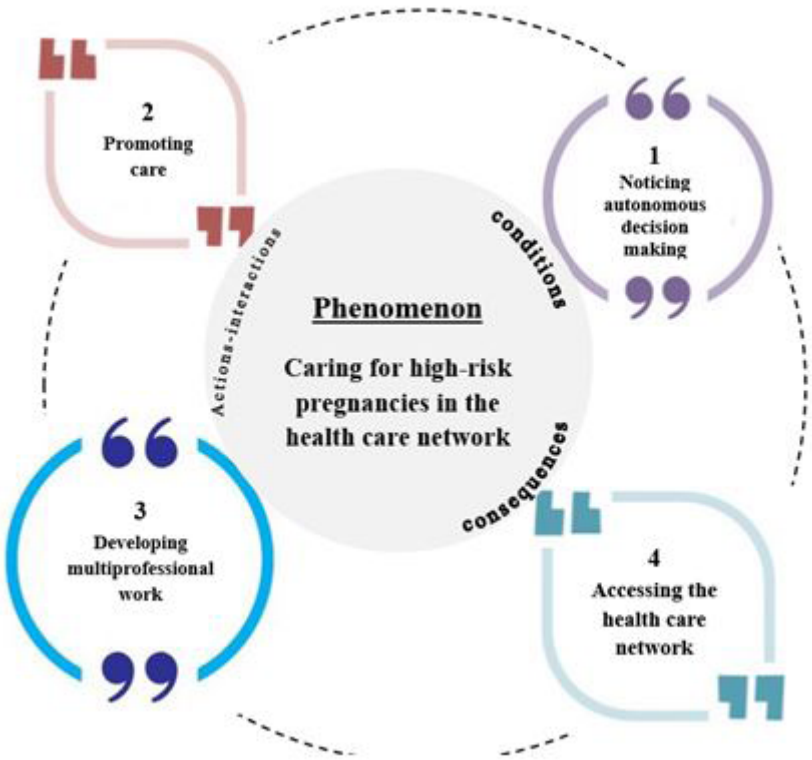

Figure 2 – Diagram representing the central phenomenon and its categories.
Source: Authors, 2018.

The first time here in the unit I listen to the main complaint, and when it is relevant, I refer it to the physician who is in the unit with me. But when he is not present and I can see it is a very serious case, I send the case to our hospital, which is our reference for a first specialized medical care. (P05)

Since the attention to pregnant women is not carried out by a single professional, physicians, due to their formation, have an essential role in finding adequate outcomes for mother and baby. However, our research showed lack of knowledge in may medical consultations in primary care, which stood out in the reports of workers from specialized attention. The lack of preparation in medical clinic has been identified as preventing autonomy in decision making. Another aspect that hinders autonomy is the turnover.

The turnover of physicians in the health teams is very high. They stay for one year and then leave to go through residence, so they are actually insecure or even lack knowledge [...] Actually, many pregnant women would not even need to go to the outpatient clinic, but we end up consulting them as a precaution. (P08)

Even when the score of the patient indicates no risk, we end up consulting them [...] we prefer it that way. The physicians in the units are very insecure. Unfortunately they are still afraid of handling pregnant women and since there is a lot of turnover, they even send them here sometimes for evaluation. (P11)

[...] we have an open door in the clinic for any doubts the team and the physician in the PHC may have. [...]. We even think about ways to improve this protocol. (P09)

In the assistance of high-risk pregnant women, the attention, in all levels of complexity, must be developed considering mother and baby health care and maintenance, with professionals who actually complement one another as opposed to just being more numerous. The simple referral of the pregnant woman from one service to the other, with no continuity and/or shared information, does not guarantee that an effective assistance is being provided[12].

The use of protocols aids in decision making and conduct. It has been proven that, with the timely and adequate implementation of evidence-based practices, coupled with trained professionals with material and structural resources available, prenatal care can save lives. It is also an opportunity to give support to women, their families, and communities, in a critical point of their lives[5].

Promoting care

A timely start to the prenatal was indicated as an essential element for the outcome of pregnancies. Our investigation indicated that the prenatal started in the health care units with nursing consultations.

[...] I usually start providing care according with the symptoms presented by the high-risk pregnant woman. Then I refer her to the general practitioner so he can prescribe the necessary medication and, if necessary, refer her to the gynecologist [...] (P01)

My clinical practice in the care for high-risk pregnancy starts in the first prenatal care, which usually is a responsibility of the nurse in the health care unit. The first consultation is where the pregnant woman will discuss everything we need to know about herself and her pregnancy, and we can identify high-risk or not in her pregnancy, while other situations will be analyzed throughout the prenatal. When the pregnancy is determined as a high-risk one, I follow the principle of not doing tomorrow what can be done today. (P04)

According with a Brazilian study, prenatal coverage is high, but this picture changes as other parameters are considered. As we consider recommendations such as the minimum number of consultations and exams and the relationship with the maternity ward where delivery will take place, the number of adequately managed cases goes down to little more than one quarter of all women, number which decreases even more if we consider its connections to motherhood[13].

In this regard, the prenatal care up to the moment of delivery and the definition of a proper maternity ward to refer high-risk pregnancies to is a part of health care. High-risk pregnancies should not be treated as diseases, but as conditions that require detailed follow up. Avoidance of maternal and neonate deaths is more associated with technical prenatal and birth conditions than it is to sophisticated technology use in intensive care[14–15].

This research showed that the identification of risk in primary care in the beginning of pregnancy and during it is a preoccupation of specialized workers, since prenatal follow up aims to identify risks earlier, preventing and managing disease. On the other hand, the experience of high-risk pregnant women showed they trusted the care they received during the prenatal, be it in specialized attention or primary care?

My doctor in the unit sent me to the clinic because my first doppler ultrasound showed pre-eclampsia, and now

it was because my baby is too small for the gestation time. (U02)

I started in the unit [...] the nurse made a few exams and the doctor saw it was high-risk because my thyroid exam was altered. I think I was in the third month already. (U03)

The actions of trained professionals in the prenatal care include recommendation, orientation, referral, investigation, evaluation, prescription, and solicitation, and should be based on proper scientific evidence[5]

An analysis of the assistance to pregnant women in Brazil, a potential trigger of for the permanence of a bond between the pregnant woman and the unit she came from[9]. Another study shows that many pregnant women who, at first, undergo prenatal care in high-risk clinics, after stabilizing the clinical framework, go back to intermediary or low risk (primary care), and continue in this classification until the end of their pregnancies[12].

Developing multiprofessional work

For a quality assistance, actions of care must include interaction between different professionals. In this context, three nurses interviewed in the health care units stated that they evaluated the pregnancy risks with the physician of the team and, together, referred the patient to the proper level of attention.

I generally start providing care according with the symptoms of the pregnant woman. Then I refer her to the general physician so he defines the proper drug treatment and refer her to the gynecologist. This is a responsibility of the physician of my unit, but we work together. (P01)

Together with the physician of my unit, we discuss the case and contact the lab. I and he send it [...]. We sit together, talk, and decide together. (P03)

We consult the patients in the health unit together, we evaluate the situation of the patient and if it is a risk situation we send her to the clinic [...] where she will follow up with the gynecologist(P06)

The research details actions that take place in the practice and reiterate the importance of them, but one can observe that the work of physicians and nurses is still fragmented. This fragmentation has, as one of its factors, the absence of this professional in some times of attention in the health unit.

The primary health care, which is the entryway to the SUS, has an important role in screening potential issues in pregnancy. Among these, social, environmental, and psychological conditions, as well as the health of pregnant women and their personal and family history stand out. Primary care also determines the flow of referrals of high-risk pregnancies in the health care network, since it is responsible for enlisting these women, stratifying them according to risk and connecting them to other levels of health care[16].

Accessing the health care network

Regarding the articulation for the attention and referral of the pregnant woman to another level of care, workers from primary health care units report there are no difficulties. In the specialized outpatient, on the other hand, shortcomings were found in regard to the general hospital and to referral maternities, especially in regard to the communication between the attention sites for the referral of high-risk pregnancies.

Women with high-risk pregnancies have consultations in the maternity ward, coming from referrals with no notes. [...] we have to simply believe what they tell us. (P08)

The greatest problem we find is that, in an emergency, the pregnant woman is there consulting with me in the outpatient, her pressure is 160/100 and I need to screen fast for pre-eclampsia. Then I have to hospitalize her and the screening is done in two days in the hospital, because she has to rest and be medicated because her pressure is high. It is hard, but at least before we had a neonate unit they refused that, saying they could not attend the woman and the newborn if the case was grave. (P09)

Since I work in the hospital too, I know it is not a referral hospital for high-risk cases, and it is difficult because we do receive high-risk pregnancies [...] But we do not have that good a support for high-risk pregnancies, which is very bad. We have a lot of time when this pregnant woman needs to be referred to another hospital according with the regulation. We cannot find a bed, either there is a bed for the mother or for the baby, for both is really difficult [...]. (P12)

Thus, this research points at issues that have a high impact on mother and child health, as indicated by the statements of health workers when they mention how difficult it is to find beds for high-risk pregnant women. It is evident that the third level of care provided in the regional hospital suffers a lack of adequate infrastructure to care for high-risk pregnancy and for births that require neonate intensive care units. However, the reports of the women attended in the high-risk outpatient clinics of referral maternity wards in the capital indicated they were satisfied.

[...] I have received good care everywhere. In the clinic in [...] the city administration even transports us. (U03)

I was attended [...] and I liked it a lot, they explain everything to us. The only think that was written for me in a piece of paper was the date of my next consultation. (U04)

The workers from the high-risk clinic stated that they guided the pregnant women to continue attending their health unit to follow up their pregnancy. Health workers from primary care units stated that they carried out this follow up. However, pregnant women, when asked, were unanimous when they said that, after being referred to the high-risk clinic, they did not go back to primary care.

I've been there [health unit] because I came here [high-risk clinic] and they wrote a piece of paper telling me to go their [health unit] to schedule the attention here [high risk clinic]. Now I always come here for attention. (U02)

I didn't go back to my unit, now I only go to consultations here [high risk clinic] and in Florianópolis. (U04)

A Chinese study attempted to explore the relations of complications of pregnancy and the neonate results of a specific population of regional births. Its objective was to show how high-risk pregnancies were connected to the perinatal and neonate regional deaths. By doing so, this research showed, in a study setting of 151 hospitals that provide neonate care services, that strategies such as: characterizing the incidence of prenatal and labor complications; the type of labor associated with perinatal and neonate risks; and the results of regional hospitals may be able to facilitate the estimation of the effectiveness of policies and programs related to pregnancy and labor around the country, as well as the limits of overload and resources[17].

In this regard, it stands out that a region-specific care network, articulated with adequate records about conducts and referrals during the care for high-risk pregnancies is better than a fragmented, unilateral, and simplified attention, suggesting multidimensional, contextualized, integrated, and singular care, focusing on the wellbeing of the pair mother-developing baby[17–18].

As a result, the new can only be created according with the possibilities of transformation and recognizing the complexity of its realities and interactions. In the care for high-risk pregnancies, contradictory notions, such as order and disorder, certainty and uncertainty, are part of a the same complex phenomenon observed[8]. The order is based on a health care that functions integrated in the network. Disorder, in turn, elucidates that which does not work adequately in this same network. Although there is more access and available professionals, there are gaps in the quality of the services provided, especially in regard to guaranteeing comprehensive and singular care for high-risk pregnancies[19].

This is coupled with the repercussions of the main characteristics of the health network: the formation of horizontal relations between attention networks, the center of communication in primary care, the centrality of the health needs of a population, continuous and integral care with accountability, multiprofessional care, and the sharing of objectives and commitments with sanitary and economic results[20].

A collective formed by all practices, attitudes, and components of this system is what sustains the dynamic of care. However, in the context studied, the efforts for the collaboration in the care for high-risk pregnancy in the three levels of care is still insufficient to redefine these relations.

Strengths and weaknesses were found in the consolidation of this attention network. Among the strengths, we can mention the ease of access to health services between PHC and the municipal high-risk outpatient clinic, even if the referrals are not well made, with satisfactory communication between these two parts of the attention.

Concerning the weaknesses, they include disarticulation between the levels of attention considered in this study, especially in referrals from the high-risk clinic to the regional general hospital in the city, and to referral services of medium and high complexity in the capital of the state, in such a way that there is no guarantee that there will be access to these levels of care, even when it is extremely necessary.

Primary care is close to the pregnant women, and as such, can establish bonds with the community by improving referrals and counter-referrals between it and the secondary and tertiary levels of health. A complementary tool for care is the electronic record in information systems, which has been an important ally for the management of patient flow in SUS.

Embracing pregnant women is a responsibility and generates many challenges, and the prenatal and all processes of care are as important as their outcome.

CONCLUSION

The results showed weaknesses in the care provide to high-risk pregnancies in the health care network. Among these, stand out the lack of effective communication between health workers in the different levels of care, emphasizing verbal communication, health care fragmentation, the inexperience and turnover of physicians, the discontinuous treatment of high-risk pregnant women in primary care after they are referred to other levels of care, and the referrals and counter-referrals between secondary and tertiary levels of care and the referral maternity wards.

The dissemination of shared attention in all levels of care is a strategy for work to be integrated and for the increase effectiveness of necessary changes. However, for it to take place, health workers must be responsible for the continuity of care, and for work processes to be organized.

The findings of this investigation also suggest that all women undergoing high-risk pregnancies must be seen as multidimensional and unique beings, who require comprehensive and continuous care, which is accordance with complex reasoning, which accepts the complexity of the real in local, regional, and global levels.

Limitations of this study include the fact that it was carried out with sample from a single city and the time demanded by the complexity of the method. However, its contributions for the field of health and nursing include the fact that it shows how necessary an integrated network is to care for high-risk pregnancies, by elaborating a theoretical model for practical application, based on the comprehension of meanings attributed by the participants. The reflections presented here are expected to encourage innovations for teaching and research, in studies with methodological rigor and production of quality knowledge that can subsidize the organization of health services and professional practice.

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The authors declare there are no conflicts of interest.

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Associate editor:
Helga Geremias Gouveia

Editor-in-chief:
Maria da Graça Oliveira Crossetti

Received: 06.16.2021
Approved: 12.06.2021