







Original Article

## Coordination and longitudinality: care in high-risk pregnancy from the perspective of nurses\*

Coordenação e longitudinalidade: o cuidado na gestação de alto risco sob a perspectiva do enfermeiro

Coordinación y longitudinalidad: el cuidado en la gestación de alto riesgo desde la perspectiva del enfermero

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### Abstract

**Objective:** to evaluate the quality and extent of the essential attributes longitudinality and coordination in the care of high-risk pregnant women from the perspective of the PHC nurse. **Method:** exploratory study, quantitative approach, conducted in health units in the city of Guarapuava, Paraná. The participants were 21 nurses, who had been working for at least six months in the institution. The sociodemographic characterization instrument and the questionnaire Primary Care Assessment Tool, health professionals version, were applied. The attributes of longitudinality and coordination were evaluated. Descriptive and bivariate statistics were performed using the Statistical Package for the Social Sciences program. **Results:** satisfactory scores were obtained in the attributes evaluated in the nurses' view. The negative correlation between the age of the participant and the coordination score was obtained in the care integration component. **Conclusion:** it is emphasized the need for strengthening these attributes, since they directly impact the quality of care for high-risk pregnant women. **Descriptors:** Pregnancy, High-Risk; Primary Health Care; Quality of Health Care; Nursing; Health Evaluation

## Resumo

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**Objetivo:** avaliar a qualidade e extensão dos atributos essenciais longitudinalidade e coordenação no cuidado à gestante de alto risco sob a perspectiva do enfermeiro da atenção primária em saúde. **Método:** estudo exploratório, de abordagem quantitativa, realizado em unidades de saúde, no município de Guarapuava, Paraná. Participaram 21 enfermeiros, atuantes há pelo menos seis meses na instituição. Foi aplicado o instrumento de caracterização sociodemográfica e o questionário *Primary Care Assessment Tool*, versão profissionais de saúde. Avaliou-se os atributos de longitudinalidade e coordenação. Realizou-se estatísticas descritivas e bivariadas, utilizando o programa *Statistical Package for the Social Sciences*. **Resultados:** obteve-se escores satisfatórios nos atributos avaliados na visão dos enfermeiros. Identificou-se a correlação negativa entre a idade do participante e o escore de coordenação, no componente integração dos cuidados. **Conclusão:** ressalta-se que é preciso fortalecer esses atributos, uma vez que os mesmos impactam diretamente na qualidade do atendimento à gestante de alto risco. **Descritores:** Gravidez de Alto Risco; Atenção Primária à Saúde; Qualidade da Assistência à Saúde; Enfermagem; Avaliação em Saúde

## Resumen

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**Objetivo:** evaluar la calidad y extensión de los atributos esenciales longitudinalidad y coordinación en el cuidado a la gestante de alto riesgo desde la perspectiva del enfermero de la APS. **Método:** estudio exploratorio, de abordaje cuantitativo, realizado en unidades de salud, en el municipio de Guarapuava, Paraná. Participaron 21 enfermeros, que actúan desde hace al menos seis meses en la institución. Se aplicó el instrumento de caracterización sociodemográfica y el cuestionario *Primary Care Assessment Tool*, versión profesionales de salud. Se evaluaron los atributos de longitud y coordinación. Se realizaron estadísticas descriptivas y bivariadas, utilizando el programa *Statistical Package for the Social Sciences*. **Resultados:** se obtuvieron puntuaciones satisfactorias en los atributos evaluados en la visión de los enfermeros. Se obtuvo la correlación negativa entre la edad del participante y el puntaje de coordinación, en el componente integración de los cuidados. **Conclusión:** se resalta que es necesario fortalecer esos atributos, una vez que los mismos impactan directamente en la calidad de la atención a la gestante de alto riesgo. **Descriptor:** Embarazo de Alto Riesgo; Atención Primaria de Salud; Calidad de la Atención de Salud; Enfermería; Evaluación en Salud

## Introduction

High-risk pregnancies are diagnosed when the pregnant woman has some disease or sociobiological condition that negatively influences the evolution of pregnancy and may increase the possibility of maternal and neonatal death.<sup>1</sup> In Brazil, the records of information systems on maternal mortality show that in 2021 more than 92,500 maternal deaths were recorded, which indicates 107 deaths per 100,000 births.<sup>2</sup>

The Primary Health Care (PHC) is characterized as the main gateway of assistance to women to the services offered by the Unified Health System (UHS). With the social, cultural, demographic and health changes in Brazil, this service needs to be organized and aligned with the perspectives of professionals and users. In Brazil, the Family Health Strategy (FHS) is one of the care models of PHC.<sup>3</sup>

The health needs of women who do not have problems during pregnancy are generally solved with simple procedures at the primary level of care. Some may need more complex procedures that can only be solved in high technology density services, with sophisticated health teams and technology. However, although pregnant women are classified as high risk, follow-up in the FHS should be continuous as a user of the UHS.<sup>4</sup>

A risky pregnancy can have negative impacts on the mother, fetus and family, as well as complications in the health of the binomial. Thus, the embracement of pregnant women in the FHS should be critical, humanized, following the guidelines of the Ministry of Health in relation to care for this population.<sup>5</sup> In this circumstance, seeking consistent indicators to assess the quality and reality of the service becomes essential.<sup>6</sup>

PHC units are recognized as quality when organized under four essential attributes: access to first contact, longitudinality, comprehensiveness and coordination; and three derived attributes: family centralization, community orientation and cultural competence.<sup>7</sup>

Access to first contact is related to accessibility and the use of the service as a source of care. The longitudinality attribute is defined as a fundamental characteristic of the care provided by the health team in mutual relationship with individuals and family members over time. In this follow-up, the existence of a therapeutic bond marked by the responsibility of the health professional and the trust of the user should be considered.<sup>8</sup>

The integrality comprises the services provided to the community in the different points of attention and that must meet the needs of promotion, prevention, rehabilitation, cure and palliative care. The coordination attribute is considered the articulation between the numerous services and activities related to health, influencing the other essential and derived attributes. These actions of bond between user and team need to be synchronized continuously, considering any level of complexity and regardless of where they occur or the type of professional service provided.<sup>9</sup>

The attribute derived from family centralization considers the family context related to the potential for care and the use of family approach tools by PHC. Community orientation aims to recognize the needs of the community, as well as the organization and planning of the service to meet the demands of the same. The attribute of cultural competence concerns the adaptation of the service with the cultural characteristics of the population served.<sup>10</sup>

With the objective of analyzing the aspects of structure, process and results of health services, from the existence and extension of the attributes of PHC, an instrument called Primary Care Assessment Tool (PCATool) was created in 2001, proposed for adults, health professionals or managers of health services.<sup>11</sup>

For this evaluation, the nurse is essential, because he/she is responsible for the classification and reclassification of risk during prenatal care, carry out the referral to the high-risk service, when necessary, in addition to preventing injuries and ensuring the maintenance of health and well-being of the mother-child binomial in health care and education actions.<sup>12</sup>

Given the above, the study expects to answer the following research question: What is the quality and extent of the essential attributes longitudinality and coordination in the care of high-risk pregnant women from the perspective of the nurse working in PHC? Thus, the objective is to evaluate the quality and extent of the essential attributes longitudinality and coordination in the care of high-risk pregnant women from the perspective of the PHC nurse.

## **Method**

This is a descriptive and exploratory study, with a quantitative approach, carried out in FHS units, located in the city of Guarapuava, Paraná. This municipality currently has 33 active Family Strategy units. The research was developed through an online survey, via Google Forms®. A virtual questionnaire was chosen due to the pandemic established and declared by the World Health Organization on March 11, 2020.

The study population consisted of nurses who worked in the FHS for at least six months. The choice of service time occurred because it is the period necessary for the employee's environment in the work scenario.<sup>8</sup>

All nurses who were in the institution for the minimum recommended time were included. As exclusion criteria were listed professionals away from work, regardless of the reason.

Data collection took place between October and November 2020. Initially, the telephone contact was made by the numbers of the respective health units made publicly available by one of the researchers requesting the nurse of the unit, in order to explain how the research would be developed. Subsequently, access to the questionnaire was made available. It is noteworthy that the completion of the data collection instrument took place voluntarily, in electronic format, accessed through a link with an initial message, containing an invitation and the term of free and informed consent.

Two instruments were applied, the first, referring to sociodemographic and professional issues and the second, incorporating the questionnaire Primary Care Assessment Tool-Brazil (PCATool-Brazil, health professionals version), prepared and validated in Brazil, that evaluates the presence and extent of essential and derived attributes of PHC in health care services and the degree of user affiliation with the health service.<sup>10</sup>

For this study, the attributes related to the care provided to high-risk pregnant women were evaluated, in the perception of the health professional, namely: longitudinality and coordination with the respective subcategories integration of care and information system.

The coordination attribute is considered the articulation between the numerous services and activities related to health influencing the other essential and derived attributes. These actions of bond between user and team need to be synchronized continuously, considering any level of complexity and regardless of where they occur or the type of professional service provided.<sup>10</sup>

Instrument responses are Likert-type. Each item receives the following score: "certainly yes" value = 4, "probably yes" value = 3, "probably not" value = 2, "certainly not" value = 1 and "do not know/do not remember" value = 9. For each component, a mean score was calculated, based on the quotient between the sum of the value of the items and the number of items.

The scores were converted into a scale from 0 to 10, considering the following formula:  $X = (\text{score obtained} - 1) \times 10 / 3$ . When converted to a scale from 0 to 10, they were considered satisfactory for Primary Care when presenting scores greater than or equal to 6.6.<sup>13</sup>

The information was tabulated in spreadsheets of type Excel® and later analyzed by the Statistical Package for the Social Sciences, version 20.0. Descriptive univariate statistics (means, standard deviation and frequencies) and bivariate statistics (chi-square test of association and Pearson correlation) were performed. The Kolmogorov-Smirnov test was used to assess whether the continuous variables followed the normal distribution.

The chi-square test was applied to evaluate the association of attributes with gender and marital status variables. The Pearson correlation test was used to analyze the association with the continuous variables: age, training time and working time in the FHS. For all analyses, the significance level adopted was 5% ( $p < 0.05$ ).

The study was authorized by the Municipal Health Department and approved by the Research Ethics Committee of the State University of the Midwest, with the opinion n. 4.188.429 (CAAE: 35089020.0.0000.0106) on August 3, 2020. All participants consented to integrate the study by agreeing to the Informed Consent Form online, obeying the ethical aspects established by Resolution 466, of December 12, 2012, of the National Health Council.

## Results

Of the 33 nurses who worked in the FHS, 21 (63.6%) participated in the study who met the selection criteria. Among the participants in the study, there was a predominance of female nurses (90.5%) and married (71.4%), as shown in Table 1.

**Table 1** – Distribution of study participants, according to sex and marital status. Guarapuava, 2020. (n=21)

Variables	n	%
<b>Sex</b>		
Feminine	19	90.5
Masculine	2	9.5
<b>Marital Status</b>		
Married	15	71.4
Single	6	28.6

As for the participants' age, the mean age was 34 years (SD+9.1), with a minimum of 23 years and a maximum of 64 years. According to the training time, the average was nine years of graduation (SD+7.8), with a minimum of one year and a maximum of 32

years of graduation. Regarding working time in the FHS, there was an average of six years of work (SD+6.2), with a minimum of six months and a maximum of 19 years (Table 2).

**Table 2** – Characterization of study participants, according to age and time of professional activity. Guarapuava, 2020. (n=21)

Variables	n	Mean	Standard Deviation	Minimum	Maximum
Age	21	34.9	9.1	23	64
Training Time	21	9.7	7.8	1	32
Time Working in the FHS	21	6.8	6.2	0.5	19

The analysis of the scores of longitudinality and coordination in the care of high-risk pregnant women unveiled the predominance of satisfactory scores for the two attributes evaluated and their subcategories (Table 3).

**Table 3** – Distribution of scores in care for high-risk pregnant women, according to longitudinality and coordination. Guarapuava, 2020. (n=21)

Variables	n	%
<b>Longitudinality</b>		
Unsatisfactory	3	14.3
Satisfactory	18	85.7
<b>Coordination</b>		
<b>Integration of Care</b>		
Unsatisfactory	3	14.3
Satisfactory	18	85.7
<b>Information System</b>		
Unsatisfactory	1	4.8
Satisfactory	20	95.2

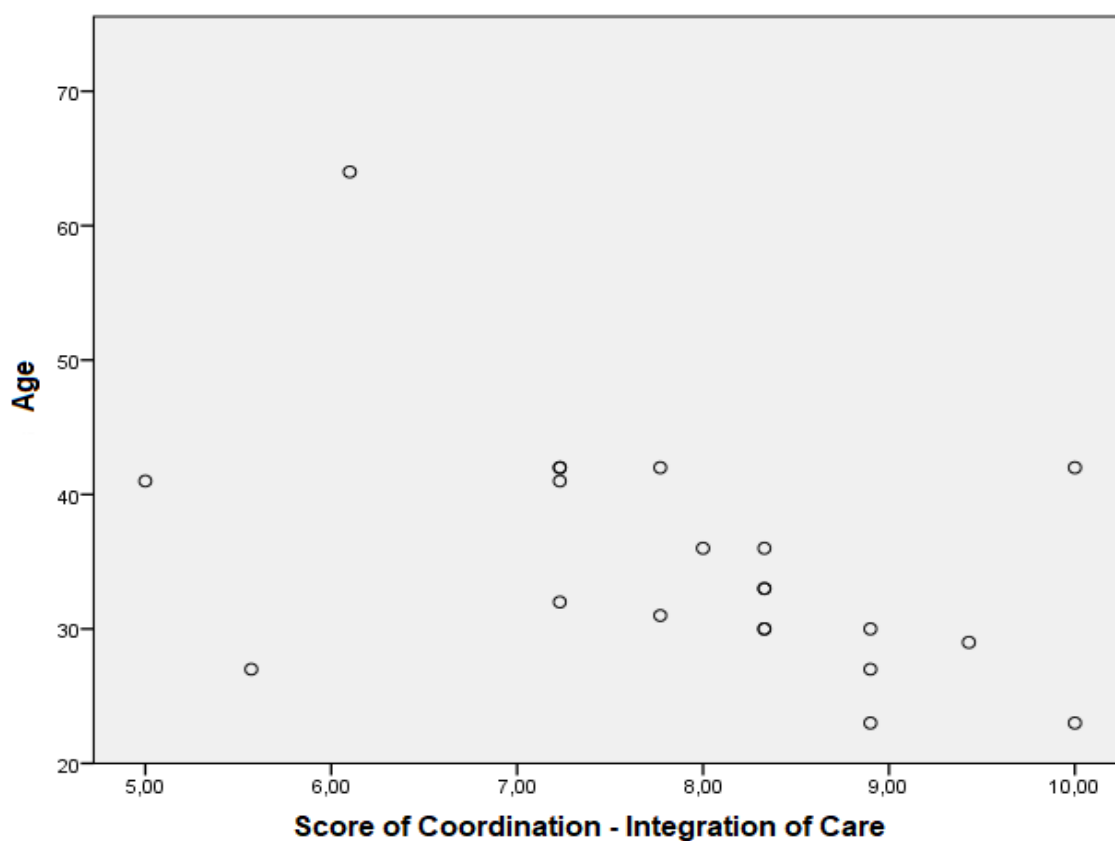
Between the two attributes analyzed, it is evident that the subcategory of coordination - information system was the one that presented the highest average in the score (8.2). It is noteworthy that for the longitudinality score, the lowest value found was 5.5. And for the subcategory score coordination - integration of care was 5.0 and for the subcategory score coordination - information system was 5.5 (Table 4).

**Table 4** – Analysis of scores in the care of high-risk pregnant women, according to longitudinality and coordination. Guarapuava, 2020. (n=21)

Variables	n	Mean	Standard Deviation	Minimum	Maximum
Longitudinality	21	7.4	0.9	5.5	9.5

Coordination					
Integration of Care	21	7.9	1.3	5.0	10.0
Information System	21	8.2	1.3	5.5	10.0

As for the bivariate association analysis, a significant association was found between the age of the nurse and the coordination score - integration of care (Figure 1), a negative correlation was verified (Pearson's linear correlation coefficient = -0.474;  $p < 0.05$ ),



**Figure 1** – Coordination score – integration of care versus age. Guarapuava, 2020. (n=21)

## Discussion

The characterization data of the nurses who participated in this study confirmed the profile expected by the population served. Most of the nurses working were women, young and with little time of training working in PHC. Similar data were identified in a study conducted in Goiás with health professionals, which also used the PCATool-Brazil version of health professionals.<sup>14</sup>



Knowledge of this sociodemographic information of professionals is important, as it can influence health care services related to monitoring and care provided to high-risk pregnant women. As for the analysis of the attributes of PHC, there are satisfactory scores regarding the components of longitudinality and coordination – integration of care and coordination information system.

The longitudinality attribute is defined as a fundamental characteristic for the care provided by the health team and its consistent use over time in a mutual bond between health team, individuals and families. In this follow-up, the existence of a therapeutic relationship marked by the responsibility of the health professional and the trust of the user should be considered.<sup>15</sup>

Regarding care for high-risk pregnant women, the attribute of longitudinality is an important element in PHC, as it ensures attention throughout the prenatal follow-up. National guidelines make PHC responsible for the longitudinal care of these women, which makes the satisfactory evaluation of this attribute paramount.<sup>16</sup>

However, all these aspects depend mainly on how these professionals work on a daily basis, their perception of offering a referral service within the PHC and even the opinion of the pregnant woman under the care she is receiving.<sup>17</sup> In this context, the embracement in the health unit emerges as a strategy to strengthen the relationship between professional and user, which is strongly related to good communication, because it favors the continuity and effectiveness of care, through active listening, empathy and interpersonal bond.<sup>18</sup>

Thus, when the attribute of longitudinality is evaluated negatively may indicate failures of the service in relation to the link established with its users, causing the lack of demand from the pregnant woman for the service. However, when the score is satisfactory, it affects the reduction of the number of hospitalizations, correct diagnoses, strengthening health promotion and disease prevention actions, contributing to the reduction of costs generated from possible hospitalizations.<sup>6</sup>

Regarding the coordination attribute, this ensures the continuity of care of high-risk pregnant women and focuses on analyzing whether the FHS nurse receives information regarding the care of these patients from specialized care. From the perspective of health professionals, research points to satisfactory scores.<sup>5</sup>

The reason for satisfaction with this score may be linked to the integrated electronic medical record system, which is available in the municipality in which the present study was conducted, facilitating the exchange of information between PHC and specialized care. However, one of the challenges of the UHS is to qualify the PHC to exercise coordination of care and organize strategic points for specialized care that are able to ensure that the line of comprehensive care is broadly articulated with PHC and provides adequate responses to their health needs to UHS users.<sup>19</sup>

In the case of care for high-risk pregnant women, an important factor related to the coordination of care for specialized care is assigned to the maternity hospital/referral hospital. Several communication failures are found in health scenarios, especially regarding the low use of the referral and counter-referral system with quality and losses in clinical follow-up. Thus, we see the need for changes in care practice aimed at patient safety, continuity of care and the implementation, in fact, of networking.<sup>20</sup>

According to the literature, the coordination item goes beyond a reference and counter-reference system, but should be seen as a strategy used to facilitate the flow of the patient and support communication between professionals, considering the various points of the health network.<sup>21</sup> When analyzing the association, only the negative correlation between the age of the study participant and the coordination score was identified, that is, the older the nurse, the lower the coordination score, integration of care component. In a study conducted in Rio Grande do Sul with health professionals facing the care of children and adolescents living with the diagnosis of HIV (Human Immunodeficiency Virus) there was a correlation between the low age of the professional and the high overall score of the attributes of PHC.<sup>22</sup>

There was no significant correlation between the time of training and work in the FHS, with the attributes already related. A similar result can be observed in another study conducted with health professionals using PCATool-Brazil.<sup>12</sup> Thus, it is possible to infer that the presence of the attributes in a PHC unit is not linked to the fact that it is conducted by a newly trained professional or by another with more experience time.

However, studies point out that professionals tend to evaluate health services satisfactorily and positively.<sup>23-24</sup> Differently when applied to users, the mean score is generally lower compared to health professionals.<sup>25</sup> In Minas Gerais, the mean of essential

attributes was 6.89 and was lower than in the present study, but still considered satisfactory. In the state of the Northeast region of the country the average was 7.6.<sup>24</sup>

The limitations of the study are linked to the difficulty in the participants' face-to-face approach, due to the COVID-19 pandemic, which resulted in little participation of nurses in the study. Although the instrument is available for evaluation from the perspective of the pregnant woman, there was no application for data comparison.

It is believed that the research contributed to deepen the knowledge about the perception of nurses, with regard to the attributes of PHC directed to high-risk pregnant women. Due to the relevance of the theme, it is suggested that other research evaluating the other attributes in the view of other professionals and the pregnant woman be performed. Therefore, there is no evidence in the literature associating the attributes studied with the care provided pregnant women at high risk.

## Conclusion

The study aimed to evaluate the attributes of PHC of longitudinality and coordination, given the care provided to high-risk pregnant women. The results revealed satisfactory scores in these attributes in the view of nurses. However, it is emphasized that there is still a demand for investment in linking the pregnant woman to her maternity reference and in strengthening these attributes in PHC, emphasizing that the attribute longitudinality and coordination impact on the quality of care provided to high-risk pregnant women. Considering that the quality of assistance to pregnant women is a priority of governments and health programs in Brazil, knowing the existence and extent of these attributes contributes to the direction of care provided by nurses.

The PCATool instrument proved to be effective in its application and handling, which highlights that the periodic evaluation of primary care services is a strategy for the implementation of intersectoral for the safety of continuity of health care and improvement in the flow of users in the health care network. It was also evident the importance of conducting research in relation to PHC, to guide the formulation and reformulation of public policies.

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