



Gestational risk stratification: course to support nursing consultations in primary care

Estratificação de risco gestacional: curso para subsidiar a consulta de enfermagem na atenção primária

Estratificación del riesgo gestacional: curso de apoyo a la consulta de enfermería en atención primaria

ABSTRACT

Objectives: To describe the experience of implementing and evaluating a training course on gestational risk stratification designed to support nursing consultations in Primary Health Care. **Methods:** This study adopts a descriptive, qualitative approach and is presented as an experience report. The course was developed based on an instructional design project and organized into four modules delivered in a hybrid Virtual Learning Environment, totaling 30 hours. **Results:** A total of 264 nurses from the state of Santa Catarina enrolled in the course offered between September 2023 and April 2024, of whom 119 completed it. The educational content was provided in text, infographic, and video formats. Participants evaluated the course positively, highlighting the strengthening of professional practices promoted through the exchange of experiences and the training opportunities that enhance the quality of care provided to pregnant women in Primary Health Care (APS) settings. **Final considerations:** The gestational risk stratification course was regarded by participants as an important continuing education strategy that supports nursing consultations in Primary Health Care and fosters nurses' critical thinking and clinical judgment. **Descriptors:** Nursing; Prenatal care; Primary Health Care.

RESUMO

Objetivo: Descrever a experiência de implementação e avaliação do curso de formação sobre estratificação de risco gestacional para subsidiar a consulta de Enfermagem na Atenção Primária à Saúde. **Métodos:** Estudo descritivo com abordagem qualitativa, do tipo relato de experiência. O curso foi desenvolvido a partir de um projeto instrucional, sendo organizado em quatro módulos em um Ambiente Virtual de Aprendizagem em formato híbrido, com duração de 30 horas. **Resultados:** Um quantitativo de 264 enfermeiros do estado de Santa Catarina iniciou o curso, realizado entre setembro de 2023 e abril de 2024, dos quais 119 concluíram. Os conteúdos foram apresentados em formato de texto, infográficos e vídeos. Os enfermeiros avaliaram positivamente o curso, sinalizando o fortalecimento de ações que são promovidas mediante troca de experiências e a oportunidade de capacitação para potencializar a qualidade dos atendimentos realizados às gestantes, no cenário da Atenção Primária à Saúde. **Considerações finais:** O curso de estratificação de risco gestacional foi avaliado, pelos participantes, como uma importante estratégia de educação permanente que contribui para subsidiar a consulta de Enfermagem, na Atenção Primária à Saúde, orientando o pensamento crítico e o julgamento clínico dos enfermeiros. **Descritores:** Enfermagem; Cuidado pré-natal; Atenção Primária à Saúde.

RESUMEN

Objetivo: Describir la implementación y evaluación de un curso de capacitación sobre estratificación del riesgo gestacional para apoyar las consultas de enfermería en Atención Primaria de Salud. **Métodos:** Estudio descriptivo, cualitativo, de tipo experiencial. El curso se desarrolló con base en un proyecto instructivo y se organizó en cuatro módulos en un Entorno Virtual de Aprendizaje híbrido, con una duración de 30 horas. **Resultados:** 264 enfermeros del estado de Santa Catarina iniciaron el curso, de los cuales 119 lo completaron. El curso se desarrolló entre septiembre de 2023 y abril de 2024. El contenido se presentó en texto, infografías y videos. Los enfermeros evaluaron positivamente el curso, destacando el fortalecimiento de las acciones que se promueven a través del intercambio de experiencias y la oportunidad de capacitación para mejorar la calidad de la atención brindada a las mujeres embarazadas en el entorno de Atención Primaria de Salud. **Consideraciones finales:** El curso de estratificación del riesgo gestacional fue evaluado por los participantes como una importante estrategia de educación continua que contribuye a apoyar las consultas de enfermería en Atención Primaria de Salud, orientando el pensamiento crítico y el juicio clínico de los enfermeros. **Descriptores:** Enfermería; Atención prenatal; Atención Primaria de Salud.

Luana Roberta Schneider¹

ID 0000-0001-9724-8667

Grasiele Fátima Busnello¹

ID 0000-0002-2027-0089

Silvana dos Santos Zanotelli¹

ID 0000-0001-5357-0275

Adriana Paula Franceschina¹

ID 0000-0003-3211-1963

Edlamar Kátia Adamy¹

ID 0000-0002-8490-0334

¹Santa Catarina State University – UDESC.

Corresponding author:

Luana Roberta Schneider
luana.schneider@udesc.br

INTRODUCTION

Given the current scenario of rising maternal and neonatal mortality rates in Brazil, structural challenges persist, including social and racial inequalities and limitations in prenatal care, compounded by chronic underfunding of the health-care network. In response to this context, the Ministry of Health (MS) implemented an amendment to Consolidation Ordinance No. 3/2017 in 2024, establishing the Alyné Network through Ordinance GM/MS No. 5,350, dated September 12, 2024⁽¹⁾.

This initiative seeks to strengthen actions aimed at maternal and child health on an ongoing basis, outlining principles and objectives such as expanding access to prenatal care, ensuring the performance of essential tests, linking pregnant women to referral maternity hospitals for delivery, adopting evidence-based practices, guaranteeing the right of women to choose a companion, and, ultimately, reducing maternal and child mortality rates in the country^(1,2).

Primary Health Care (APS) functions as the organizer of the health network and the coordinator of care, remaining responsible for supporting pregnant women even when they are also being monitored in other levels of care. This role is essential because it is within the territory—where families and communities live—that social relationships and health needs emerge. The planning and organization of the Health Care Network (RAS) should ensure access to comprehensive care for all women throughout the stages of pregnancy and the postpartum period⁽³⁾.

Reducing maternal and infant mortality is a central priority of public health policies at all levels of management and care worldwide⁽⁴⁾. In Brazil, approximately

92% of maternal deaths are considered preventable and occur predominantly due to hypertension, hemorrhage, and puerperal infections, a pattern consistent with global trends^(5,6).

Care for pregnant women is a shared responsibility of health managers, professionals, and the RAS. In this context, qualified prenatal care is essential for preventing or identifying maternal and fetal conditions at an early stage, thereby supporting the healthy development of the newborn and reducing risks to the pregnant woman. Within this framework, the risk stratification of pregnant women is organized into three levels: low, intermediate, and high risk⁽³⁾.

Healthcare for high-risk pregnant women remains a significant challenge for the health system, as it has a direct impact on maternal mortality rates. Identifying potential risk factors for the mother's and fetus's health as early as possible is therefore crucial. With this aim, the MS developed—and the Santa Catarina State Health Secretariat (SES-SC) adapted—a gestational risk stratification tool that supports comprehensive care for pregnant women, offering health professionals a foundation for more informed decision-making and timely interventions. This stratification process should be applied during all prenatal consultations^(3,7,8).

Nursing consultations are supported by the Professional Practice Law (Law No. 7,498, dated June 25, 1986) and regulated by Decree No. 94,406, dated June 8, 1987. Regarding the regulation of nursing activities in the care of pregnant women, women in labor, postpartum women, and newborns, Resolution No. 516, dated June 24, 2016, of the Federal Nursing Council (CFE) establishes that the provision of pre-

natal care for normal-risk pregnancies is an activity exclusive to nurses, who must provide care in a comprehensive, holistic, individualized, and humanized manner⁽⁹⁾. According to MS protocols, nurses possess the technical skills and scientific knowledge necessary to care for low-risk pregnant women in Primary Health Care and play a key role in the care of medium- and high-risk pregnant women as members of the multidisciplinary team^(3,7).

In this context, nurses must be familiar with gestational risk stratification, as pregnant women classified at risk require dynamic, continuous care that is coordinated and shared across different levels of complexity in the health system. Nevertheless, it is within the APS that these women maintain their primary connection with the health team, which reinforces the team's responsibility and contributes to more effective and safer care for pregnant women^(3,6).

Given this scenario, training nurses to meet these demands is essential. In response, a professional development course was developed to enhance the knowledge and confidence of APS nurses in performing gestational risk stratification during prenatal consultations.

Considering the challenges connected to improving the quality of care for pregnant women in APS—particularly regarding gestational risk stratification and the central role of nursing in this process—there is a clear need for training strategies that support clinical practice. In this context, the following research question emerges: How can implementing a training course on gestational risk stratification improve the quality of nursing consultations in the APS? Therefore, the objective of this study is to describe the experien-

ce of implementing and evaluating such a training course designed to support nursing consultations in the APS.

METHODS

This study adopts a descriptive, qualitative approach, taking the form of an experience report developed during the implementation of a training course on gestational risk stratification for nurses working in Primary Health Care (APS). The demand for this course emerged from nurses linked to a regional health department in the state of Santa Catarina, who reported difficulties in providing adequate care to pregnant women during prenatal consultations, particularly concerning performing gestational risk stratification.

The course was organized within a Virtual Learning Environment (AVA), enabling the development and integration of web-based content grounded in real or simulated experiences for educational purposes⁽⁷⁾. Its structure was created using the Modular Object-Oriented Dynamic Learning Environment (Moodle®), a free, open-access software platform. Access to the course was restricted to the nurses enrolled in the training.

The course was delivered in a hybrid format within 30 asynchronous hours on Moodle®, with an introduction and orientation section, four content modules, and an assessment component. Additionally, participants attended a four-hour, in-person session held at the regional health headquarters of the participating municipalities, during which case studies related to the course topic were discussed, with emphasis on the practical application of gestational risk stratification.

The course was developed on the Moodle® platform between February and

May 2023. After the content was structured, the course underwent semantic validation, reviewed by 14 nurses working in APS in municipalities in the health region of the Association of Municipalities of Alto Uruguai Catarinense (Amauc).

Before the course was implemented, meetings were held with managers from regional health authorities, the Teaching–Service Integration Commission (CIES), and the Regional Interagency Commission (CIR) to establish partnerships and publicize the initiative. These meetings also supported the development of informational materials for dissemination and the preparation of invitations to nurses working in APS across the participating municipalities.

The course was implemented for nurses working in the following health regions of Santa Catarina: Alto Uruguai Catarinense, Extremo Oeste, Xanxerê, Oeste, and Meio Oeste—territories that together encompass 111 municipalities. Managers from each locality within these regions nominated nurses to participate in the training. A total of 264 nurses completed the course between September 2023 and April 2024.

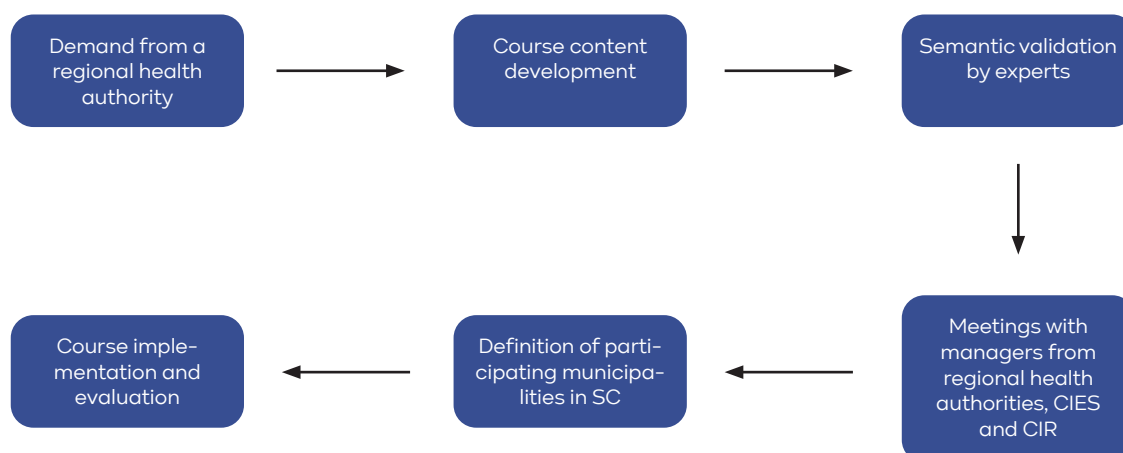
Registration was facilitated by the regional health coordinator, who distributed the enrollment link to nurses via an electronic form. After the registration period, participants were enrolled on the Moodle® platform and added to an instant-messaging group designed to provide guidance and address questions related to platform access and task submission. This phase was coordinated by two scho-

larship recipients—nursing graduates with doctoral degrees in Health Sciences—who guided participants in the Moodle® environment, clarified doubts on course procedures, monitored attendance, and issued certificates.

At the end of the course, nurses completed an evaluation questionnaire administered through an electronic form. The instrument was adapted from a macro-survey and comprised 21 items formatted on a four-point Likert scale, where 1 (one) indicated 'inadequate,' 2 (two) 'partially inadequate,' 3 (three) 'adequate,' and 4 (four) 'totally adequate.' Respondents were asked to justify ratings of 1 or 2, and an open-ended field was provided for suggestions to improve the course. The questionnaire addressed participant characteristics, course content, format, and the clarity of the language used. A certificate of participation was awarded to those who completed at least 75% of the online component and attended the in-person meeting.

The data were analyzed descriptively and organized according to the thematic similarity of participants' responses. Participant progress throughout the course was monitored via the Moodle® platform and through an instant-messaging application used to support communication during the training.

Figure 1 illustrates the process of course development, implementation, and evaluation. It is noteworthy that the present manuscript focuses specifically on the implementation and evaluation phases of the course.

Figure 1. Flowchart of the course development, implementation, and evaluation process

Caption: CIES – Teaching-Service Integration Commission; CIR – Regional Interagency Commission; SC – Santa Catarina.

Source: Prepared by the authors.

This study is part of the broader research project “Development of care, educational, and assistance technologies to support nurses’ care actions in the RAS.” The project is linked to the Care Technologies research line of the Professional Master’s Degree in Nursing in Primary Health Care, financially supported by the Santa Catarina Research and Innovation Support Foundation (Fapesc), under Calls No. 48/2021 and No. 48/2022, which provide infrastructure funding for research groups at the State University of Santa Catarina (Udesc).

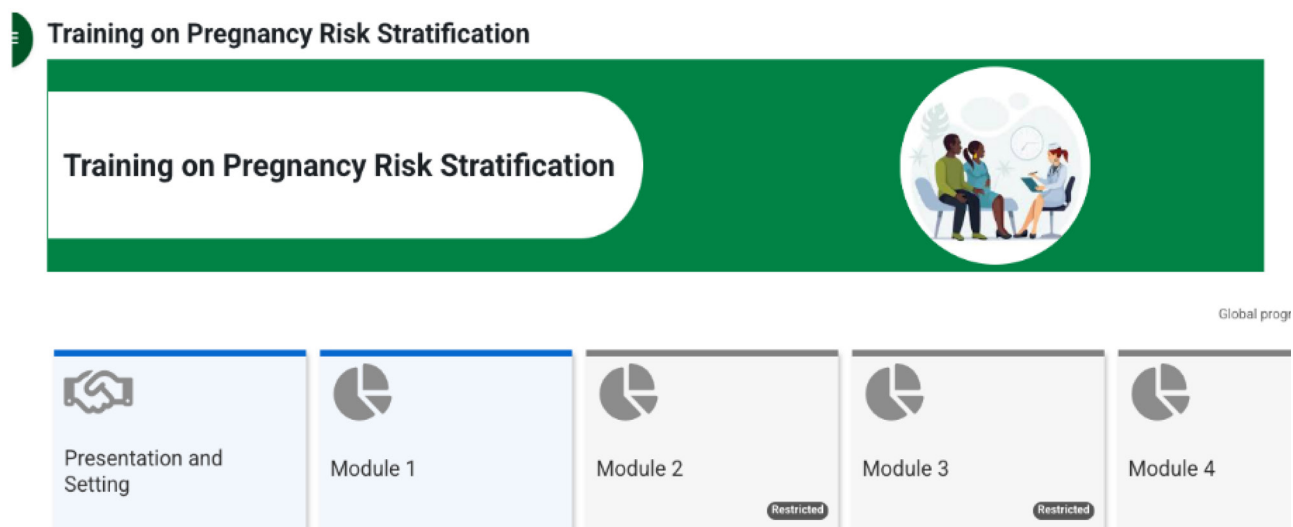
Regarding ethical aspects, this study was approved by the Research Ethics Committee, under Opinion No. 5,047,628, of 2021, CAAE: 50165621.2.0000.0118. Anonymity was ensured, and the nurses were identified as E1, E2, and E3, respectively.

RESULTS

In Moodle®, the course was organized into an introduction and overview section, four content modules, and a course assessment section. The introduction and orientation section included the course plan and a welcome video that briefly described the

initiative to develop a Gestational Risk Stratification course for APS nurses. This section also featured two forums: one dedicated to addressing participants’ questions and another for participant introductions.

Regarding the content modules: Module 1 addressed continuing education in health and women’s health within the Brazilian historical context; Module 2 focused on nursing consultations, the nursing process, and its conduct in low-risk prenatal care; Module 3 examined high-risk pregnancy, associated risk factors, and the pregnancy risk classification and stratification; and Module 4 presented case studies related to pregnancy risk stratification in the APS setting. The content was delivered through text, infographics, and videos. Each module also included supplementary materials, such as scientific articles, official guidelines, and video lessons. At the end of each module, students were required to complete a multiple-choice questionnaire assessing their understanding of the material. Figure 2 presents the course home screen with the corresponding modules.

Figure 2 – View of the home screen of the course on Gestational Risk Stratification

Source: Course website, 2024.

The face-to-face meetings were held in the municipalities of Concórdia, Chapé-có, Xanxerê, Joaçaba, and São Miguel do Oeste, and were facilitated by specialists in the field, including professionals trained in obstetric nursing, nurses with practical experience in caring for pregnant women, and researchers in women's health. These meetings focused on discussing case studies, providing opportunities for reflection, clarifying questions, exchanging experiences, and offering guidance on best clinical practices for nursing consultations.

For the face-to-face meetings, the World Café methodology was employed, using a creative dialogical process in which course participants collectively and collaboratively addressed questions structured around four case studies. Participants were divided into groups, each assigned to discuss a specific case involving a pregnant patient. The discussions occurred in 15-minute rounds. At the end of each round, the groups remained fixed, with the case studies rotating among them. The process continued until all participants had examined and responded to each case. The groups recor-

ded their responses on posters, which were later presented to the larger group and the team of specialists for analysis and synthesis of the discussions.

Regarding the evaluation, 134 nurses (50.75% of participants) completed the evaluation form. The majority (98.5%) were women, aged 23 to 53 years. Concerning the educational background, 23.1% held a bachelor's degree in nursing, 76.9% had completed postgraduate studies, and 11.9% held a master's degree.

Regarding the course content, nurses indicated that the teaching-learning approach facilitated their understanding of the subject matter, thereby enabling them to gain a greater comprehension of the theme. This is evidenced in the following statements: "Easy to understand (E1)"; "The material meets the demands of the UBS (Basic Health Unit) (E2)"; "Content meets needs (E3)"; and "Material presented clearly (E4)."

When asked whether the course encouraged the application of the content in their professional practice, 61.2% of the nurses considered the statement "totally appropriate," while 38.8% deemed it "appro-

appropriate." These results indicate that the course content helped clarify doubts related to the topic and fostered the incorporation of the materials into daily professional practice.

In terms of the structure and presentation of the course, 50.7% of the nurses considered the language used in the instructional messages to be totally appropriate for the target audience, and 48.5% rated it as appropriate. However, some participants suggested the inclusion of additional forums with specific guiding questions to promote interaction and support learning of particular topics grounded in routine prenatal care practices. They also recommended diversifying the instructional materials by incorporating more videos and case studies. These suggestions are reflected in the following statements: "I suggest more forums with specific questions to encourage interaction in the AVA (E5)"; "The activities could be divided throughout the modules, not just at the end"; "Modules 1 and 2 have a lot of reading; there could be a video (E6)"; and "The theoretical part could be more succinct, more objective, and include more case studies (E7)."

Concerning whether the course was appropriate for guiding nurses in gestational risk stratification, 51.5% of participants rated it as "totally adequate," and 48.5% as "adequate." The nurses also indicated that the information presented was scientifically grounded and easily accessible through the VLE.

The course relevance was rated as totally adequate by 56% of participants and adequate by 44% of the nurses, indicating that the content contributes to increasing the knowledge in the area and arouses interest in the subject.

The nurses evaluated the face-to-face meeting positively, highlighting the ongoing need for such encounters and the potential

they offer for strengthening professional practices through the exchange of experiences and opportunities for training that enhance the quality of prenatal care in the APS setting. Their comments reinforce this positive assessment: "It is important and necessary to maintain face-to-face meetings. I even believe that if there were more face-to-face meetings, it would be more enriching" (E8); "I suggest allocating more time to the practical component to allow for a deeper discussion of case studies and clarification of doubts" (E9); "More face-to-face classes" (E10); and "Maintain face-to-face meetings, as it is often difficult to engage in study activities within the work environment" (E11).

Finally, we highlight several suggestions offered by the nurses who participated in the course, which have the potential to support the (re)structuring and (re)organization of the training for future editions:

- a) incorporating additional explanatory videos to facilitate understanding of the course content;
- b) expanding the discussion of case studies, including more detailed information about the clinical conditions of pregnant women;
- c) extending the course to other health professionals, such as physicians;
- d) adding a module with step-by-step instructions for accessing the Santa Catarina Telehealth system and requesting teleconsultations; and
- e) maintaining the face-to-face meeting while increasing its duration to allow for more in-depth debate and exchange of experiences among nurses.

Participants also identified several benefits of the course that contributed to improving the work of healthcare teams, including: a) the restructuring of care flows for pregnant women classified according to

gestational risk; b) the opportunity for free, high-quality professional development; c) the relevance and utility of the course for training nurses in the application of the gestational risk stratification tool; and d) increased motivation among nurses, given that the course structure was closely aligned with the realities of PHC services.

Despite the efforts invested in implementing the training course, only 119 of the 264 participants enrolled completed all planned stages, representing less than half of the total. This dropout rate appears to be associated with several factors, including work overload, limited internet access, insufficient time for continuing education activities, and a lack of institutional incentives. Nurses who completed the course received a certificate issued by the university.

It is important to note that the course was monitored by professionals from the Santa Catarina State Health Department, who attended a face-to-face meeting to assess and evaluate its applicability. Following this meeting, the quality of the training and its potential for statewide replication were acknowledged, with consideration given to offering the course to nurses in all municipalities of Santa Catarina. This expansion is currently in the planning and organizational phase, with new cohorts anticipated for 2025.

DISCUSSION

The primary objective of the course was to train nurses in gestational risk stratification and to highlight the importance of applying these criteria during all prenatal consultations. By strengthening the technical capacity of these professionals, the initiative aims to improve the quality of care provided to pregnant women.

Maternal mortality continues to be a

major global health challenge and remains a central target of the United Nations (ONU) Sustainable Development Goals (ODS). One of these goals seeks to reduce the global maternal mortality ratio to fewer than 70 deaths per 100,000 live births by 2030, ensuring that no individual country exceeds 140⁽¹⁰⁾ deaths per 100,000 live births.

In this context, the MS has invested in implementing health policies, programs, and projects integrating surveillance and regulatory actions. These initiatives aim to identify potentially preventable maternal and infant deaths promptly and to inform the strategy developments that strengthen both outpatient and hospital care^(3,11).

A high-risk pregnancy is characterized by any condition that interferes, or has the potential to interfere, with maternal and/or fetal well-being. Approximately 15% of pregnancies fall into this category, which may be associated with personal characteristics, unfavorable socioeconomic conditions, preexisting maternal illnesses, previous reproductive history, or complications arising during the current pregnancy⁽³⁾.

The American Society for Maternal-Fetal Medicine, considering the country's persistently high maternal morbidity and mortality rates, recommends a comprehensive approach to risk assessment across the entire reproductive continuum—from the preconception period to postpartum and the interpregnancy interval. This approach requires an integrated analysis of all relevant medical and contextual factors that may affect women experiencing, or at risk for, high-risk pregnancies. Risk assessment should be understood as a continuous, patient-centered process that acknowledges and respects each woman's perspective and tolerance for risk⁽¹²⁾. In this regard, high-quality prenatal care plays a crucial role in the early

identification of such conditions, enabling timely and effective interventions⁽³⁾.

A systematic review conducted by the WHO to identify the global causes of maternal mortality between 2009 and 2020 showed that hemorrhage remains the leading cause of maternal deaths globally, followed by indirect causes. Hypertensive disorders of pregnancy were the leading cause of maternal death in Latin America and the Caribbean⁽¹³⁾.

In this regard, risk stratification enables adequate care, allowing for the establishment of a bond, whether in prenatal care, specialized outpatient care (AAE), or in a hospital setting for the treatment of complications during pregnancy and at the time of delivery. When a risk factor is identified, the pregnant woman should be stratified and, according to established criteria, referred to the appropriate referral centers. However, it is essential to emphasize that even when referred for evaluation or follow-up to another, more complex service, APS should continue to monitor the patient⁽³⁾.

Nurses play a central role in pregnancy healthcare through prenatal consultations, contributing to the interdisciplinary team in delivering preventive, safe, humanized, and efficient care^(6,14). Accordingly, the training of health professionals—particularly nurses—is essential for the accurate application of gestational risk stratification, ensuring quality and safety in prenatal follow-up.

Some of the difficulties reported by nurses in caring for high-risk pregnant women involve concerns about the legal support for their actions, as well as gaps in technical and scientific knowledge stemming from their professional training, including limitations related to the correct and timely execution of gestational risk stratification. Nonetheless, it is the nurse's responsibili-

ty during prenatal consultations to identify signs of risk, classify them according to established criteria, and ensure appropriate referral to specialized services, while continuously monitoring gestations within APS⁽³⁾.

The MS considers continuous updating and training essential for improving the service quality provided within the scope of APS⁽⁵⁾. The development of educational technologies has increasingly expanded the possibilities for teaching and learning, particularly in the health sector, where professionals actively seek qualifications and complementary training to enhance their clinical practice.

To support this process, a particularly effective strategy is the adoption of educational technologies, understood as a set of knowledge and principles that enable individuals to think, reflect, and act, thereby becoming active agents in their own processes of existence⁽¹⁵⁾. These technologies emerge within a global context marked by the evolution of knowledge and the growing demand for practicality, functioning as promoters, mediators, and facilitators of health practices⁽¹⁶⁾. In this regard, investing in the training of health professionals is crucial to ensure that gestational risk stratification is carried out accurately and in accordance with current clinical guidelines.

The incorporation of technological tools into hybrid nursing education substantially enhances the learning process by making content more engaging, fostering interactive learning environments, and promoting greater student autonomy.

FINAL CONSIDERATIONS

In this context, the gestational risk stratification course is a crucial continuing education strategy that enhances nursing consultations in primary health care (APS) by

guiding nurses in developing critical thinking and clinical judgment. It is expected that the knowledge acquired through case-based reflections and participation in face-to-face sessions will enhance care provided to pregnant women, thereby contributing to improved prenatal indicators and reductions in maternal and infant morbidity and mortality. The course is also expected to support and enhance the service organization, work process structure, and professional practice, ultimately improving the quality of nursing care delivered during prenatal consultations.

Ensuring the provision of training and continuing education for nursing professionals can foster more careful interpretation of gestational risk criteria, promote greater uniformity in risk stratification, and enhance the quality of clinical records during prenatal consultations.

A limitation of this study is that the findings cannot be generalized to other regions or contexts, particularly those with distinct health-care structures at national or international levels.

Another limitation was that a considerable number of professionals dropped out before the course's completion, narrowing the evaluation's scope and compromising the representativeness of the results. Therefore, we recommend that future initiatives incorporate support mechanisms and flexible strategies to strengthen participant adherence and retention throughout the training process.

The experience of implementing and evaluating the training course on gestational risk stratification presented advances in the qualification of nursing consultations in primary health care. Nevertheless, the high rate of non-completion among participating professionals requires close attention in future initiatives. In this regard, further studies

are needed to deepen understanding of the factors that influence adherence to and retention in training processes, as well as to assess the direct impact of such initiatives on clinical practice and maternal and neonatal outcomes. These investigations may support the refinement of educational strategies and the continued strengthening of nursing care for pregnant women, particularly in contexts marked by social vulnerability.

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Research conception and design: LRS, GFB, SSZ

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Critical review of the manuscript for intellectual content: LRS, GFB, SSZ, APF, EKA

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