

SCOPING REVIEW PROTOCOL ON THE APPLICATION OF THE MODIFIED EARLY OBSTETRIC WARNING SCORE

PROTOCOLO DE REVISIÓN DE ALCANCE SOBRE LA APLICACIÓN DEL MODIFIED EARLY OBSTETRIC WARNING SCORE

PROTOCOLO DE REVISÃO DE ESCOPO SOBRE A APLICAÇÃO DO MODIFIED EARLY OBSTETRIC WARNING SCORE

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ABSTRACT

Objective: To map the available evidence on the application of the Modified Early Obstetric Warning Score (MEOWS) by nurses in high-risk prenatal consultations. Method: Scoping review, conducted according to the Joanna Briggs Institute (JBI) methodology and reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist. The review question is: How do nurses apply the MEOWS in the monitoring of high-risk pregnancies? The search will be conducted in the Virtual Health Library, CINAHL, Embase, PubMed/MEDLINE, Ovid, Scopus, and Web of Science databases, as well as gray literature. The results will be managed in Rayyan software, with duplicate removal and selection by two independent reviewers. The aim is to strengthen evidence-based practice in obstetric nursing by supporting the implementation of MEOWS in high-risk prenatal care and the development of policies and protocols focused on maternal and neonatal safety.

Keywords: Obstetric Nursing; High-Risk Pregnancy; Quality Indicators in Healthcare.

RESUMEN

Objetivo: Mapear la evidencia disponible sobre la aplicación del Índice Modificado de Alerta Obstétrica Temprana (MEOWS) por parte del personal de enfermería en consultas prenatales de alto riesgo. Método: Revisión exploratoria, realizada según la metodología del Instituto Joanna Briggs (JBI) y reportada según la lista de verificación PRISMA-ScR (Ítems de Informe Preferidos para Revisiones Sistemáticas y Extensión de Metaanálisis para Revisiones Exploratorias). La pregunta de la revisión es: ¿Cómo aplican el MEOWS las enfermeras en el seguimiento de embarazos de alto riesgo? La búsqueda se realizará en las bases de datos de la Biblioteca Virtual de Salud, CINAHL, Embase, PubMed/MEDLINE, Ovid, Scopus y Web of Science, así como en literatura gris. Los resultados se gestionarán con el software Rayyan, con la eliminación de duplicados y la selección por parte de dos revisores independientes. El objetivo es contribuir al fortalecimiento de la práctica basada en la evidencia en enfermería obstétrica, apoyando la implementación de MEOWS en la atención prenatal de alto riesgo y el desarrollo de políticas y protocolos centrados en la seguridad materna y neonatal.

Palabras clave: Enfermería Obstétrica; Embarazo de Alto Riesgo; Indicadores de Calidad en la Atención Sanitaria.

RESUMO

Objetivo: Mapear as evidências disponíveis sobre a aplicação do *Modified Early Obstetric Warning Score* (MEOWS) por enfermeiros nas consultas de pré-natal de alto risco. Método: Revisão de escopo, conduzida conforme a metodologia do Joanna Briggs Institute (JBI) e reportada segundo o *checklist Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews* (PRISMA-ScR). A questão de revisão é: como ocorre a aplicação do MEOWS por enfermeiros no acompanhamento de gestantes de alto risco? A busca será realizada nas bases Biblioteca Virtual em Saúde, CINAHL, Embase, PubMed/MEDLINE, Ovid, Scopus e Web of Science, além de literatura cinzenta. Os resultados serão gerenciados no *software Rayyan*, com remoção de duplicatas e seleção por dois revisores independentes. Espera-se contribuir para o fortalecimento da prática baseada em evidências na enfermagem obstétrica, oferecendo subsídios para a implantação do MEOWS no pré-natal de alto risco e para a formulação de políticas e protocolos voltados à segurança materna e neonatal.

Palavras-chave: Enfermagem obstétrica; Gestação de Alto Risco; Indicadores de Qualidade na Assistência à Saúde.



INTRODUCTION

The Modified Early Obstetric Warning Score – MEOWS, an adaptation of the “track-and-trigger” warning systems for adult patients⁽¹⁾ emerged from the Confidential Enquiry into Maternal and Child Health – CEMACH report, produced between 2003 and 2005 in the United Kingdom, as a recommendation for monitoring the health and well-being of pregnant women, with the aim of identifying early warning signs and reducing morbidity and mortality⁽²⁾, as well as maternal and neonatal near misses. The validation of the MEOWS instrument was published in 2012 in the journal *Anaesthesia*⁽³⁾, which assessed the sensitivity and specificity of the tool at 89% and 79%, respectively, and concluded that MEOWS is an effective instrument for predicting maternal morbidity⁽³⁾.

Through the systematic monitoring of physiological parameters, such as blood pressure, heart rate, temperature, and level of consciousness, it allows for a rapid response to clinical changes, helping to prevent serious complications and reduce maternal morbidity and mortality⁽⁴⁾. The use of MEOWS is associated with improved clinical surveillance, increased frequency of vital sign monitoring, and a reduction in the interval between the onset of clinical complications and therapeutic intervention; that is, the response time for the care of pregnant women is important for the outcome of maternal and fetal health. The tool also contributes to communication among

members of the healthcare team, facilitating timely clinical decisions^(4,5).

Despite its consolidation in hospital settings, the application of MEOWS at the outpatient level, i.e., in nursing consultations with high-risk pregnant women, remains underexplored in the scientific literature. The nursing consultation⁽⁷⁾ is a strategic opportunity for the early identification of signs of clinical deterioration, especially when conducted in contexts of increased risk for maternal complications⁽⁶⁾. Therefore, the implementation of MEOWS can enhance obstetric surveillance, improve the responsiveness of teams, and raise the quality of care provided to these pregnant women. However, delegating measurements to mid-level nursing professionals requires ongoing education to increase professionals' understanding and perception of the tool's value, motivating the team to implement it and generate reliable data⁽⁷⁾.

Considering the potential of MEOWS as a clinical screening tool and the evidence gap regarding its application in high-risk prenatal care, mapping the available knowledge becomes relevant. Preliminary searches conducted by the authors in the Open Science Framework (OSF), PROSPERO, Cochrane Database of Systematic Reviews, and JBI Evidence Synthesis platforms did not identify completed or ongoing systematic or scoping reviews addressing this specific topic, highlighting this gap and reinforcing the need to conduct a review in this field.



Early identification of clinical changes during pregnancy is fundamental for the prevention of adverse maternal outcomes, especially in pregnant women classified as high-risk. In this context, standardized assessment tools, such as MEOWS, have stood out for enabling the rapid recognition of signs of clinical deterioration, guiding timely and safe interventions. The nurse's role in high-risk prenatal care includes the systematic application of screening protocols and instruments that enhance the quality and safety of care, with MEOWS being a relevant resource for clinical decision-making.

Considering the importance of basing practice on scientific evidence, this study aims to map the available evidence on the application of MEOWS by nurses in high-risk prenatal care, using the PCC (Participants, Concept, and Context) framework: P – nurses who conduct nursing consultations in the prenatal care of high-risk pregnant women; C – application of MEOWS; C – high-risk prenatal care.

METHODS

This is a scoping review protocol, to be conducted according to the guidelines proposed in collaboration with the Joanna Briggs Institute – JBI⁽⁸⁾. To ensure rigor, the review will be reported according to the recommendations of the PRISMA Extension for Systematic Reviews checklist (PRISMA-ScR)⁽⁹⁾

Eligibility Criteria

Primary and secondary studies of any methodological design will be included, without restriction as to language or publication period, that address the application of MEOWS in the context of nursing consultations in high-risk prenatal care. Therefore, studies will be considered eligible if they include nursing professionals working in the care of high-risk pregnant women and describe the use of the score as a tool for clinical assessment, identification of warning signs, decision-making for referring pregnant women to more complex services, or for planning individualized care. Studies conducted at any level of healthcare, public or private, will be considered, provided they focus on the use of MEOWS integrated into obstetric nursing practice during high-risk prenatal care.

Studies addressing aspects of the tool's implementation will also be considered, such as professional training, integration with care protocols, barriers and facilitators to its adoption, as well as observed effects on the quality of care, maternal clinical outcomes, and decision-making processes.

Studies that are limited to the application of MEOWS exclusively during labor or the postpartum period, as well as those that do not involve nursing practice, will be excluded. Letters to the editor, editorials, simple abstracts from conference proceedings, and incomplete or ongoing studies will also be excluded, as they do

not allow for an in-depth analysis of their outcomes. Information Sources

The search will be conducted in the following electronic databases: Virtual Health Library (BVS), CINAHL, Embase, PubMed/MEDLINE, Ovid, Scopus, and Web of Science. Grey literature will be explored through the Brazilian Digital Library of Theses and Dissertations (BDTD), the Networked Digital Library of Theses and Dissertations (NDLTD), and WorldCat, as well as through consultation of the reference lists of studies read in full and those included in the review.

Search Strategy

The search strategy will be constructed from a combination of controlled descriptors and free terms, adapted to the specificities of each database. Descriptors from the DeCS and MeSH vocabularies will be used, in addition to uncontrolled terms related to the following axes:

1. High-risk pregnancy;
2. Modified Early Obstetric Warning Score;
3. Nursing.

The main descriptors and free terms will include, among others:

- High-Risk Pregnancy;
- Early Warning Score, Modified Early Obstetric Warning Score, MEOWS;
- Nursing, Nursing, Nursing Consultation.

These terms will be combined using the Boolean operators AND and OR.

As an example, the following search strategy will be used in the PubMed/MEDLINE database:

(“High-Risk Pregnancy” OR “Pregnancy, High Risk” OR “High-Risk Pregnancy”)

AND (“Modified Early Obstetric Warning Score” OR “MEOWS” OR “Early Warning Score”)

AND (“Nursing” OR “Nursing Care” OR “Nursing”)

The complete search strategies, adapted to each database, will be presented in an appendix or supplementary material, as recommended by JBI and PRISMA-ScR, ensuring transparency and reproducibility.

Study Selection Process

The selection of studies will be carried out in three stages, conducted independently by two reviewers, with the aid of the Rayyan platform⁽¹⁰⁾. Initially, duplicates will be eliminated, followed by screening of titles and abstracts based on the established eligibility criteria. Articles deemed potentially relevant will be evaluated in full for the final decision on their inclusion. Any disagreements among reviewers will be resolved by consensus, or, if necessary, with the participation of a third reviewer.

Additionally, a manual search will be conducted in the reference lists of the studies analyzed in full and those included in the review,

in order to locate relevant publications that were not identified in the initial searches. The entire selection process will be recorded according to the PRISMA-ScR flowchart.

Data Extraction

Data extraction will be conducted based on a script developed by the researchers, which will serve as the basis for the construction of a database in Microsoft Excel. General information from the studies will be collected, such as title, authors, year of publication, type of publication, language, country of origin, objectives, participants, methodological design, main findings and conclusions, as well as elements related to the PCC acronym, when available.

- (P) Participants: profile of nurses involved in high-risk prenatal care, including sociodemographic data, training, length of service, and training in the use of MEOWS;
- (C) Concept: application of MEOWS during nursing consultations in high-risk prenatal care, including data on frequency, purpose, monitored parameters, clinical decision-making, integration with care protocols, and professionals' perception of the tool;
- (C) Context: information about the health services where the studies were conducted, including the level of care, the nature of the institution, the geographic location, and the characteristics of the population served.

Data Analysis and Presentation

The data extracted from the studies will be presented in narrative and tabular form. A descriptive analysis of the characteristics of the included studies will be performed, considering the participants' profile, the use of MEOWS, and the main results observed. The presentation of the findings will seek to identify emerging categories related to the application of the tool in nursing consultations in high-risk prenatal care⁽¹¹⁾. When available, the clinical and care outcomes associated with the use of MEOWS will also be described. This approach will allow the identification of patterns, trends, and gaps in the literature, providing support for the improvement of obstetric nursing practice in high-risk prenatal care and for the development of future research⁽¹²⁾.

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Conflict of interest statement:

Nothing to declare.

Data availability declaration

No databases were generated in this study. The information presented is described in the body of the article.

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