SCOPING REVIEW ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

MOTOR DEVELOPMENT DEFICITS IN PRETERM NEWBORNS: SCOPING REVIEW PROTOCOL

DÉFICITS DEL DESARROLLO MOTOR EN RECIÉN NACIDOS PREMATUROS: PROTOCOLO DE REVISIÓN DEL ALCANCE

DÉFICITS NO DESENVOLVIMENTO MOTOR EM RECÉM-NASCIDOS PREMATUROS: PROTOCOLO DE REVISÃO DE ESCOPO

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ABSTRACT
Objective: To map motor development deficits in premature newborns followed up in Primary Health Care. **Methodology:** This is a scoping review protocol based on the methodology proposed by the Joanna Briggs Institute, in which the following stages will be followed: selection of the research question, recognition of databases through search strategies, investigation of information sources, selection of evidence and presentation of results, according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist. The bibliographic databases selected were Medical Literature Analysis and Retrieval System Online, Latin American and Caribbean Health Sciences Literature, Scientific Electronic Library Online, Nursing Database, Cumulative Index to Nursing & Allied Health Literature and the Capes Catalog of Theses and Dissertations. **Results:** The data will be analyzed for eligibility and entered in tabular and descriptive form, with the aim of answering the review question. This protocol was registered on the *Open Science Framework (OSF) platform at: http://OSF.IO/S9T3N*. **Conclusion:** We hope to map the prevalence of deficits in the motor development of premature newborns, the use of prevention and promotion tools in primary health care, as well as contributing to the various types of strategies in the care of premature newborns.
Keywords: Infant, Premature; Motor Skills Disorders; Follow-Up Studies.

RESUMEN
Objetivo: Mapear los déficits del desarrollo motor en recién nacidos prematuros seguidos en Atención Primaria de Salud. **Metodología:** Se trata de un protocolo de revisión exploratoria basado en la metodología propuesta por el Instituto Joanna Briggs, en el que se seguirán las siguientes etapas: selección de la pregunta de investigación, reconocimiento de bases de datos mediante estrategias de búsqueda, investigación de fuentes de información, selección de evidencias y presentación de resultados, según la lista de verificación Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). Las bases de datos bibliográficas seleccionadas fueron Medical Literature Analysis and Retrieval System Online, Latin American and Caribbean Health Sciences Literature, Scientific Electronic Library Online, Nursing Database, Cumulative Index to Nursing & Allied Health Literature y Capes Catalogue of Theses and Dissertations. **Resultados:** Se analizará la elegibilidad de los datos y se introducirán en forma tabular y descriptiva, con el objetivo de responder a la pregunta de revisión. Este protocolo se registró en la plataforma *Open Science Framework (OSF) en: http://OSF.IO/S9T3N*. **Conclusión:** Esperamos mapear la prevalencia de los déficits en el desarrollo motor de los recién nacidos prematuros, el uso de herramientas de prevención y promoción en la atención primaria de salud, así como contribuir a los diversos tipos de estrategias en el cuidado de los recién nacidos prematuros.
Palabras clave: Recién Nacidos Prematuros; Déficit Motor; Seguimientos.

RESUMO
Objetivo: mapear os déficits no desenvolvimento motor em recém-nascidos prematuros acompanhados no seguimento da Atenção Primário à Saúde. **Metodologia:** Trata-se de um protocolo de revisão de escopo com base na metodologia proposta pelo Joanna Briggs Institute, onde serão seguidas as etapas: seleção da questão de pesquisa, reconhecimento dos bancos de dados, por meio de estratégias de buscas, investigação das fontes de informação, seleção das evidências e apresentação dos resultados, conforme o checklist *Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews* (*PRISMA-ScR*). As bases de dados bibliográficas selecionadas serão Medical Literature Analysis and Retrieval System Online, Literatura Latino-americana e do Caribe em Ciências da Saúde, Scientific Electronic Library Online, Base de Dados de Enfermagem, Cumulative Index to Nursing & Allied Health Literature e Catálogo de Teses e Dissertações da Capes. **Resultados:** Os dados serão analisados para verificação da elegibilidade e inseridos de forma tabular e descritiva, com o objetivo de responder a questão da revisão. Este protocolo foi registrado na plataforma *Open Science Framework (OSF) em: http://OSF.IO/S9T3N*. **Conclusão:** Espera-se proporcionar o mapeamento do predomínio dos déficits no desenvolvimento motor do recém-nascido prematuro, a atuação dos instrumentos de prevenção e promoção no seguimento primário à saúde, além de contribuir para os diversos tipos de estratégias na assistência em saúde e estudos futuros.
Palavras-chave: Recém-Nascidos Prematuros; Déficit Motor; Seguimentos.

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INTRODUCTION

In the context of child development, prematurity represents a multi-causal biological risk factor, which can cause irreversible harm to the biopsychosocial health of newborns. According to data from the World Health Organization (WHO), the incidence of premature births varies globally, with rates between 5% and 18%, resulting in approximately 15 million premature births each year.[2-5]

In Latin America, the rate of preterm births is 8.6%, with a tendency to increase each year worldwide.[2] According to recent figures, Brazil ranks 10th in the list of premature births, with a rate of 12.4%.[1]. Data from the Guide for Professionals of the Ministry of Health (MS) indicate that 7% of babies born are preterm, with 1.3% having low birth weight, and these numbers increase annually. [1]

Thus, the national panorama of Primary Health Care reveals numerous challenges for monitoring the health of premature newborns in the network, which involve the need for adaptation in the transition and continuity of care and in the planning of assistance flows for monitoring, the commitment of public health managers, the presence of strategies for families and the involvement of health professionals, in an effective relational dimension. [5-4]

From this perspective, neurodevelopmental complications manifest themselves through any change that occurs in the immature brain that can occur from conception to six years of age.(6) For this reason, stimulation assessments in the early years, to assess the effects of prematurity, can be conducted considering chronological age and corrected age.[3]

Based on special attention to the milestones of the child's organic development, the phases of motor development are concentrated in a gradual and organized manner. Studies show that monitoring and intervention should begin in the baby's first months, as the nervous system uses additional functions to compensate for compromised regions.[7]

In related contexts, neuropsychomotor development has a sequential order in which delays can impede the child's progress. The importance of monitoring development has become increasingly evident.(7) Therefore, developmental monitoring is a continuous process of monitoring activities related to promoting the child's development potential and detecting problems.[1-4]

However, data from the Ministry of Health (MS) indicate that 12% of Brazilian children up to five years of age are suspected of having developmental delays and do not display the behaviors and skills expected for this age group. Furthermore, the same study highlights that the incidence of functional delays is increasing among the most socially vulnerable families.[3] In this regard, care assistance is added to the monitoring of functionality, through family observational assessment scales and standardized motor measurement instruments.[4]

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In fact, the Child Health Handbook presents information that helps in decision-making when any change in motor behavior is identified in the evaluation of typical and atypical (premature) newborns.(4-6) For this reason, the essentiality of periodic evaluations, especially full attendance at the Basic Health Unit (UBS), reinforces attention to motor development as a multicausal and complex support.[1, 5]

In these repercussions, the discourses of strengthening care actions have attributed to the nurse and parental responsiveness an attentive role in Primary Health Care (PHC), in the preventive search for changes in prematurity and childhood for different contexts. In this strategy, the problem of interventions with premature babies and their parents affects everything from attention to a particular risk factor to the provision of medical monitoring, education of parents and care for babies in specialized establishments. [5]

Consequently, the potential risks of systemic deficits combined with problems in the motor acquisition of preterm newborns can cause complications in terms of the quality of the child's interaction with the environment and future socialization. In order to identify dysfunctions early, multidisciplinary monitoring aims to improve the condition of the newborn in the medium and long term, since continuity of care can prevent and/or treat problems early that may affect the child's growth and development. [4, 5]

Therefore, the study is relevant due to the lack of motor assessment instruments for preterm newborns in Primary Care, the lack of follow-up in existing or suspected cases, and the poor understanding of the instruments and assessment methods of the Ministry of Health. Thus, by identifying these complications in preterm newborns and providing the necessary guidance, it will be possible to support the improvement of care tools that contribute to the care provided and assist professionals such as nurses in neuropsychomotor and clinical-therapeutic interventions for this group.

Therefore, the objective of this scoping review protocol is to map the evidence that addresses deficits in motor development in premature newborns followed up in Primary Health Care.

METHODS

Type of study

This is a scoping review protocol, guided by the analysis method proposed by the Joanna Briggs Institute (JBI), developed according to the guidelines of the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist. Thus, the study will be developed in six stages, namely: selection of the research question; search for relevant studies; selection of studies; extraction and analysis of data; and, grouping, summary and presentation of results.[8, 9,10]

With a summarized purpose, the scoping review was considered, since it assumes a

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structured consultation that is capable of outlining, mapping and summarizing existing definitions in the literature, in addition to identifying gaps within the context examined. This scoping review protocol was registered on the Open Science Framework (OSF) platform at: http://OSF.IO/S9T3N.

Research question

To develop the research question, the mnemonic PCC (Population, Concept and Context) will be used, in which the population will be composed of premature newborns, the concept will consist of deficits in motor development and the context of follow-up in primary health care. Thus, the following guiding question was listed: what is the evidence of deficits in the motor development of premature newborns in primary health care follow-up?

Search for studies

In order to characterize the descriptors provided in English and Portuguese, the following descriptors were organized in the Health Science Descriptors (DeCs): "Recém-nascido Prematuro", "Transtornos das Habilidades Motoras" and "Seguimentos" and in the Medical Subject Headings (MeSH), the terms: "Infant, Premature", "Motor Skill Disorders" and "Follow-Up Studies". The Boolean operators "AND" and "OR" will be used to assist in the searches in a controlled manner.

In addition, guided by the keywords, we will deepen the searches through the sources: Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American and Caribbean Health Sciences Literature (LILACS), SciVerse Scopus (SCOPUS), Cummulative Index to Nursing and Allied Health Literature (CINAHL), Banco de Dados em Enfermagem (BDENF), Scientific Electronic Library Online (SciELO) and Web of Science. In addition, websites of official agencies and pediatric institutions will be added to the gray literature, in addition to exploratory searches on the internet. Table 1 describes the search strategies used for each database.

Table 1 - Search strategy used in each database. Natal, RN, 2024.

Searcxh strategy	***Source***
(SU "infant, premature" AND SU "child development" OR SU "Psychomotor Performance" AND SU "follow-up studies")	**Cinahl**
(TS=(Infant, Premature)) AND ALL=(('infant, premature') AND ('child development' OR 'psychomotor performance') AND ('follow-up studies'))	**Web of science**
((tw:(infant, premature)) OR (tw:(child development)) OR (tw:(psychomotor performance)) OR (tw:(follow-up studies))) AND (db:("BDENF"))	**BDenf**
((tw:(infant, premature)) OR (tw:(child development)) OR (tw:(psychomotor performance)) OR (tw:(follow-up studies))) AND (db:("LILACS"))	**Lilacs**

(Infant, Premature) AND (Child Development OR Psychomotor Performance) AND (Follow-Up Studies)	**Medline**
(‘infant, premature’) AND (‘child development disorders’) AND (‘follow-up studies)	**Scopus**
(tw:(infant premature)) AND (tw:(child development disorders’)) OR (tw:(follow-up studies))	**Scielo**

Source: Prepared by the authors, 2024.

Preliminarily, a broad investigation will be carried out with two databases: Medline and Lilacs, with the intention of identifying the keywords and descriptors that will later be aggregated in the search strategy. Furthermore, the second step will include a more extensive analysis in all the cited data sources and with the improved search strategy. Furthermore, in order to answer the research question, an inspection will be carried out in the references and complementary sources, whose survey guides eligible meanings according to (PRISMA-ScR).[8, 9, 10]

Study selection

The survey of information sources was carried out between December and January 2024 by two researchers independently, and was conducted based on the stages proposed by the Scoping Review. Studies that cover grey literature and address the topic of motor development in premature newborns in Primary Health Care will be included, as well as the guidelines provided by the Child's Handbook. Findings that are accessible in full, free of charge, from 2019 to 2024, in English, Portuguese or Spanish, and that address the topic of motor development of premature newborns in primary health care, as well as the guidelines provided by health services, will be taken into consideration. The exclusion criteria included reflection articles, integrative reviews, scoping reviews, letters to the editor and editorials that do not focus on the evaluation of the psychometric properties of the instruments, compared to those listed in the Child's Handbook. The process will have the findings verified by reading the relevant titles and abstracts in the Microsoft Office Excel program, followed by the final reading of the articles through the Rayyan reference manager. With this, a screening of the documents will be carried out in full by two researchers, based on the PCC mnemonic to manage the methodological path, thus, the divergent data will go through a third reviewer. From this, a flowchart will be prepared with findings that legitimize the information and, consequently, the study will undergo classifications regarding the levels of evidence, based on the removal and inclusion of data, conducted independently by both reviewers in the sequence expressed by the review model.

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Data extraction and analysis

Information Sources

In this phase, the research will be mapped based on the JBI method to present the research interests. During the review, data related to the topic will be entered into spreadsheets and extraction tables that include the identification of the publication, such as author, country of origin, year of the journal and the results responding to the study objective. In effect, the data will be consulted with a focus on the population's characteristics, type of interventions, instruments used and the way premature newborns are assessed in motor development indexes. To list the variables performed, the follow-up will be validated by a screening with two reviewers independently, and will be confirmed by the third reviewer in case of doubts and divergences. It is crucial to highlight that the team will list the main findings of the evidence sources, as explained in the table below.

Table 2 - Data extraction table, Natal, RN, 2024.

1st Reviewer: _____ Extraction date: _____

Article/Author Code	Year/country	Periodical	Study target	Type of study	Tests or not	Outcome	Result	Conclusion

Source: Prepared by the authors, 2024

Table 3 - Comparative extraction of included studies, Natal, RN, 2024.

Article code	Standard of expected developmental milestones	Age in months	Prevalence of deficits (types of changes found)

Source: Prepared by the authors, 2024

Presentation of results

This research will seek to systematize the published studies, in a descriptive manner, with tables or charts, helping to standardize the qualitative results, due to the compilation of different textual information, in order to facilitate the identification and interpretation of the findings. In the process of the results, atypical variations in the acquisition of neuromotor skills in PTNBs will be coded, mainly in the phases with greater complexity of performance.

In addition, data on the primitive milestones corresponding to severe, moderate and suspected delays will undergo a characterization regarding their predominance, divided into three categories: delays for age in months, gross and fine-adaptive motor development. In these investigations, aspects of screening, assessment instruments and programs

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provided with resources from the Child's Handbook will be considered in the context of Primary Health Care.

The study will seek to identify motor deficits, based on the articulation of the nursing screening exercise in care focused on premature children, their families and the community in a collaborative and collective manner, especially in the comprehensive guarantees at the primary level of health care, which must have access to care in a resolute manner.

Thus, for the variables, we will use a descriptive analysis of the data, through relative and absolute frequencies, as well as comparative characterization in relation to the assessment of the expected, multivariate and suspected development of the PTNB. Therefore, the presentation of the results will be guided by respecting the objectives of the review, the research question, search strategy during the process and the method of scoping reviews found in the (PRISMA-SCR) protocol. [10]

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Authorship criteria (authors' contributions)

1. Adriana Cristina Melo de Souza contributed substantially to the conception and/or planning of the study, in obtaining, analyzing and/or interpreting the data and in writing and/or critical review and final approval of the published version.

2. Cinthia Daniele da Silva Bezerra contributed substantially to the conception and/or planning of the study, in obtaining, analyzing and/or interpreting the data and in writing and/or critical review and final approval of the published version.

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