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Nursing care in high-risk pregnancies: an integrative review

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ABSTRACT

Aim: to analyze the scientific production regarding the nursing care provided to high-risk pregnant mothers.

Method: this is an integrative review, performed between September and October 2015 via PubMed, CINAHL, Web of Science, SCOPUS, SciELO, MEDLINE, LILACS and BDEF databases, using the key terms "Nursing Care AND Pregnancy", and "High-Risk", which resulted in 23 articles. The analysis of data was processed through IRAMUTEQ[®] software. **Results:** there were six classes, which represented interfaces of nursing care to high-risk pregnant mothers and that are related to: motivations, specialized care, education, nursing strategies, multi-professional assistance, and context of care. **Conclusion:** the care of high-risk pregnant mothers was evident through a quality pre-natal and home care, from the plan of individualized care organized by the nurse and by the multi-professional team, under family support and via use of light technologies.

Descriptors: Nursing Care; Pregnancy High-Risk; Nursing; Women's Health.

INTRODUCTION

Pregnancy is a physiological phenomenon that occurs without complications in most cases. However, 20% of pregnancies in Brazil are classified as high-risk, characterized by some health disturbance that threatens the life of the mother and/or of the fetus, originating from the process of gestation or another previous issue aggravated during the pregnancy⁽¹⁻²⁾. This group of mothers requires specialized support, which will include all levels of complexity and that will provide the required diagnosis and therapeutic proceedings⁽¹⁾.

Women's health care during the pregnant-*puerperal* cycle is set by the Brazilian Humanization in Pre-Natal and Birth Care Program⁽³⁾ and by the Stork Network⁽⁴⁾. With regards to high-risk pregnancy, these guidelines dictate the evaluation of the clinical and obstetrical risks at every consultation, as well as guaranteed medical care and access to an outpatient and hospital care in a reference unit⁽³⁻⁴⁾. The technical manual of the Brazilian Ministry of Health for high-risk pregnancy guides the care team in the diagnosis and treatment of the complications, and standardizes the procedures, thus contributing to a more closely-knit and effective support⁽¹⁾.

The nurse is a fundamental professional in multi-professional health work, being responsible for the nursing care in its various levels of care support, with the technical competence to perform preventive, promotional, protective, and rehabilitating roles⁽⁵⁻⁶⁾.

The perspectives for the nurse in the area of obstetrics are possible due to the setting of the professional's working environment, supported by the resolution of the Brazilian Federal Nursing Council #0477, from April 14th 2015, which explains the role of nurses in caring for pregnant mothers, the parturient, and the *puerperal* being one of the roles, which, among others, including

the consultations in obstetrical nursing and directed nursing care to severe obstetric patients⁽⁷⁾.

However, there are few studies regarding the role of the nurse in high-risk pregnancies; this is because high-risk pregnancies account for the lowest rate among pregnant mothers, and because of the recognized prevalence of the work of the nurse in pre-natal care and in low-risk pregnancies.

It is seen that the production of knowledge and understanding in this area is relevant, as the high-risk pregnancies are complex events that lack specialized attention that is supported by scientific evidence. Adding to that, improving the quality of health care for the mother-child pair is one of the Millennium Development Goals of the United Nations⁽⁸⁾; at the same time, the pregnant-*puerperal* cycle is one of the axes of the Brazilian National Agenda for Priorities in Health Research⁽⁹⁾.

In this context, it is believed that while analyzing nursing care and reporting its scientific production aimed at high-risk pregnant mothers, the discussion generated can support the clinical practices of nurses in many spaces in which these professionals care for the pregnant mothers.

The aim is, therefore, to analyze the scientific production regarding the nursing care provided to high-risk pregnant mothers.

METHOD

This is an integrative review of literature regarding the nursing care in high-risk pregnancy, divided in the following steps: identification of the topic and determination of research question; creation of the criteria of inclusion and exclusion of articles; the definition of the information to be extracted; the evaluation of the studies included in the research; and the

interpretation of results and presentation of the review⁽¹⁰⁾.

The research question was designed according to the PVO strategy (P: Population, V: Variable and O: Outcomes): Which nursing care actions that are directed at high-risk pregnant mothers are reported in scientific literature?

The search was performed between September and October 2015, using the following electronic databases: PubMed, CINAHL with Full Text, SCOPUS, Web of Science, SciELO (Scientific Electronic Library Online), LILACS (Latin American and Caribbean Literature in Health Sciences, in Spanish), Medline (International Literature in Health Sciences) and BDEFN (Nursing Database).

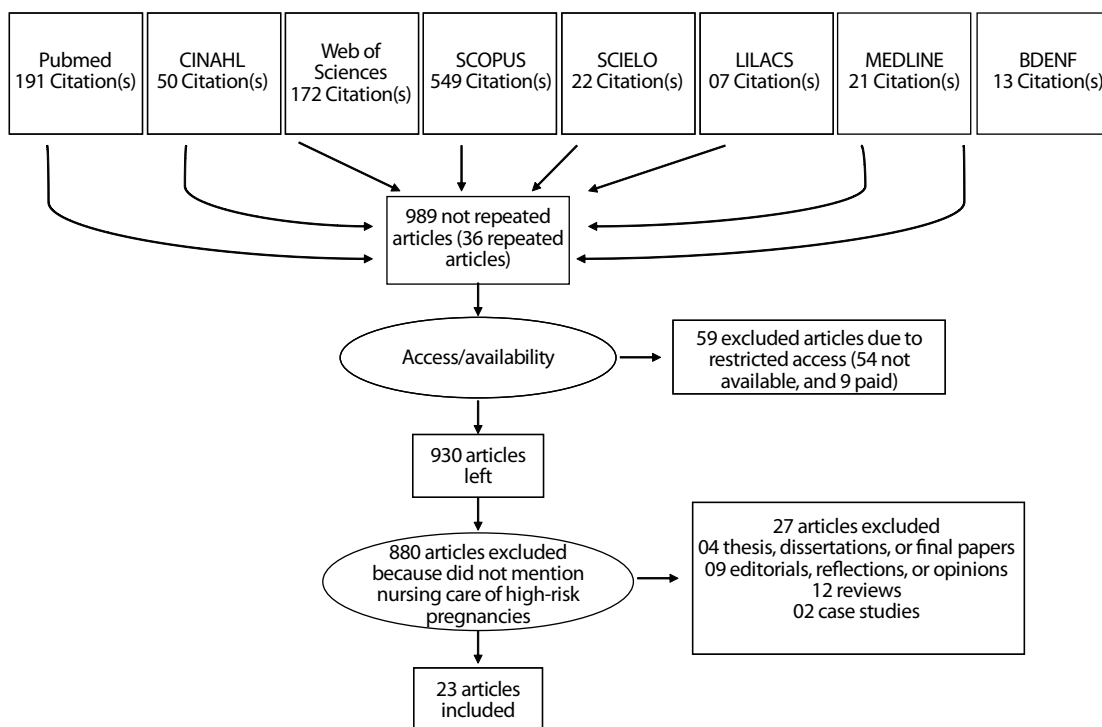
The criteria on inclusion were as follows: studies related to the topic, written in English, Portuguese, or Spanish, fully available in electronic format, without a time limit (due to the small number of articles in the past five years, as seen

throughout this article). Articles were excluded if they were found to be duplicated, undergraduate final papers, dissertations, theses, editorials, case studies, and reviews of literature, as well as reflexive and opinion reviews.

The sample composed of 23 articles, according to the following diagram (Figure 1). With regards to the selection of the articles, the descriptors used were "Nursing Care", "Pregnancy", and "High-Risk", in accordance with Descriptors in Health Sciences (DeCS), in Portuguese and Medical Subject Headings (MeSH), combined with the Boolean operator "AND". The descriptors "Nursing" and "Obstetric Nursing" were used with "Pregnancy" and "High-Risk"; however, these elements did not increase the size of the sample.

It is important to mention that articles that only described the profile, risk factors, epidemiological aspects, or feelings and experiences of the high-risk pregnant mothers, and which

Image 1 - Diagram of sample construction. Fortaleza, Brazil, 2015.



Source: PRISMA Flow Diagram Generator

did not comment on the nursing care of the public, were not included in the sample, once these studies did not fulfill the requirements of this research. The articles were organized in a chronological order, by their year of publication, and then the metadata was collected, such as title, authors, journal, type of study, type of risk pregnancy (clinical or social), proposed nursing care actions, and the result of these actions.

The IRAMUTEQ® (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*) software was used to process and analyze the data collected, which is structured under the R software, permitting various statistical analysis over textual corpuses.

The software identifies and reformats the initial context units (ICU), which are switched to elementary context units (ECU). There is a vocabulary research, and the vocabulary is reduced based on their roots (stemming), being the vocabulary generated from its reduced structures, identified in active and supplementary forms, enabling the different types of analysis, such as the Descending Hierarchical Classification (DHC), the analysis of similarity, and word clouding⁽¹¹⁾.

The corpus was built by the description of the action, the results, and the conclusions from the studies, which were placed in one single text file, according to the tutorial of IRAMUTEQ®⁽¹¹⁾. The variables used to encode the articles were: number – 01 to 23; location – 01 for international, 02 for Brazilian; pregnancy risk – 01 for clinical, 02 for social, 03 for clinical-social; and type of study – 01 for random clinical essay, 02 for qualitative.

The analysis process was defined using the DHC, which illustrates, as seen in the dendrogram (Figure 2), the creation of classes of text segments, and the relationship between these classes. The results were publicized and discussed with the interlocution with the authors of these studies.

RESULTS

Twenty-three articles were analyzed, which were selected based on the aims of this research, combined with the fulfillment of the criteria of inclusion/exclusion previously established. They were available in Portuguese and in English, published between 1985 and 2015 in Brazilian and foreign journals, without a prevalence for a specific publication.

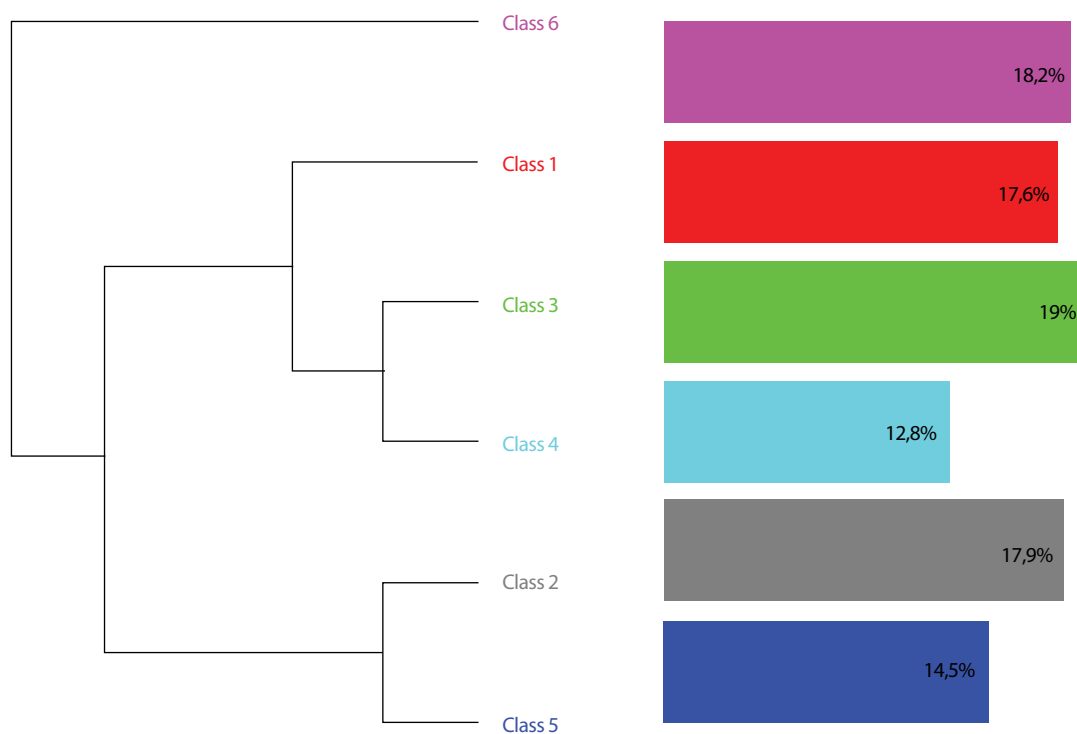
The methodological design of the research found was divided into random clinical essays (13) and in qualitative methods (10); the objectives aimed to test, compare, identify or evaluate nursing interventions with high-risk pregnant mothers. These interventions were directed at social or clinical risk (with a prevalence for clinical issues), aiming to prevent and/or reduce premature birth, low weight at birth, and, as a consequence, influencing the mortality indexes.

The focus of the studies was directed at pre-natal care as the main strategy and place of interventions to reduce aggravation in high-risk pregnancies; the hospital environment was also mentioned as the place of experiences of nursing professionals and pregnant mothers, in which the nursing care has an influential role throughout pregnancy. No studies were found on the subject of education in nursing.

It is important to highlight the hegemony of the international studies, with the testing of interventions to evaluate the cost-benefit relationship. This analysis also includes the model of private health systems; however, when this comparison was made in the studies, there was a correlation between foreign and Brazilian research, as well as the proposals, which are characterized by the use of light care and low-cost technologies.

IRAMUTEQ® recognized the division of the corpus into 23 initial text units (UCI), 759 parts of texts (ECU), and 2,733 word occurrences. There

Image 2 - DHC of the corpus *nursing care to high-risk pregnant mothers*. Fortaleza, Brazil, 2015.



Fuente: IRAMUTEQ

was the use of 85.38% and the creation of six semantic classes of DHC, as demonstrated in the dendrogram (Figure 2).

The thematic context was interpreted by naming the classes and their respective guidelines: 1 – motivations of nursing support to high-risk pregnancy mothers, 2 – specialized nursing care to high-risk pregnancy mothers, 3 – the educational role of the nurse to high-risk pregnancy mothers, 4 – nursing strategies to care for high-risk pregnancy mothers, 5 – the nurse as the multi-professional assistant for the high-risk pregnancy mothers, and 6 – the nursing care context in high-risk pregnancies. Each class was represented by the most significant words ($p \geq 0.0001$) and by their respective associations.

Thus, the chart with the articles that are part of the corpus of this research, grouped by significance and belonging to the classes designed and identified according to the colors of the DHC, is as follows (Figure 2).

DISCUSSION

The following section provides descriptions and discussion of the classes according to the articles present on each of them.

Class 1 – Motivations of nursing support to high-risk pregnancy mothers

This class groups 114 ECU, corresponding to 17.59% of the corpus, and it is near to classes 3 and 4. The most common words and meanings are: low, weight, birth, rate, risk, and premature, extracted from articles 09, 07, 03, 22, and 23 (Table 1).

The studies that are part of this class were random clinical essays that approached high-risk pregnancy as a major factor in premature births, and proposed and individualized nursing pre-natal care directed at the pregnant mother and her family members with social support, emphasizing the promotion and education of

Chart 1 - Articles that were present in the classes according to IRAMUTEQ. Fortaleza, Brazil, 2015

09	A Randomized Trial of Augmented Prenatal Care for Multiple-Risk, Medicaid-Eligible African American Women(12)	Klerman et.al.	2001	American Journal of Public Health
07	A Randomized Trial of Nurse Intervention to Reduce Preterm and Low Birth Weight Births(13)	Moore et.al.	1998	Obstetrics & Gynecology
03	A multicenter randomized controlled trial of home monitoring:Active Versus sham device(14)	CHUMS Group	1995	Am J Obstet Gynecol
22	Nurse versus Community Health Worker Identification of Psychosocial Risks in Pregnancy through a Structured Interview(15)	Godecker, Harrison & Sidebottom.	2013	Journal of Health Care for the Poor and Underserved
23	Effects of nurse home visitation on cigarette smoking, pregnancy outcomes and breastfeeding:A randomized controlled trial(16)	Mejdoubi et.al.	2014	Midwifery
05	What do Public Health Nurses Really Do During Prenatal Home Appointments?(17)	Twohy, Reif	1997	Public Health Nursing
14	Diagnósticos de enfermagem e problemas colaborativos mais comuns na gestação de risco(18)	Gouveia e Lopes	2004	Rev Latino-am Enfermagem
18	Sistematização da assistência de enfermagem a paciente com síndrome hipertensiva específica da gestação(19)	Aguiar et.al	2010	Rev. RENE
11	A randomized trial of nurse specialist home care for women with high-risk pregnancies: outcomes and costs(20)	Brooten et.al	2001	Am J Manag Care.
13	Improving pregnancy outcome and reducing avoidable clinical resource utilization through telephonic perinatal care coordination.(21)	Little et.al	2002	Lippincott's Case Management
08	Cost-Benefit of a Nursing Telephone Intervention to Reduce Preterm and Low-Birthweight Births in an African American Clinic Population(22)	Muender et.al	2000	Preventive Medicine
02	A randomized trial of psychosocial support during high-risk pregnancies(5)	Villar et.al	1992	Newengland Journal of Medicine
06	Home Care of High Risk Pregnant Women by Advanced Practice Nurses:Nurse Time Consumed(23)	Brooten et.al	1998	Home Healthc Nurse
17	Women With High-Risk Pregnancies, Problems, and APN Interventions(24)	Brooten et.al	2007	J.Nurs Scholarsh
12	In-home nursing care for women with high-risk pregnancies:outcomes and cost(25)	Harrison et.al	2001	Obstetrics & Gynecology
15	APN-Physician Collaboration in Caring for Women With High-Risk Pregnancies(26)	Brooten et.al	2005	J.Nurs Scholarsh
04	Staff Evaluation of a High-Risk Pregnancy Program(27)	Mackey and Sobral	1997	Public Health Nursing
01	Reducing low birth weight among socioeconomically high-risk adolescent pregnancies(28)	Piechnik & Corbett	1985	Midwifery
16	Initiation of a nurse-developed interdisciplinary plan of care for opiate addiction in pregnant women and their infants(29)	Dodge,Brady e Maguire	2006	International Journal of Childbirth Education
21	Percepções de enfermeiras sobre a assistência prestada a mulheres diante do óbito fetal(30)	Santos et.al	2012	Esc Anna Nery (impr.)
19	Conhecimento e atitudes dos enfermeiros diante de gestantes com sintomas da doença hipertensiva específica da gestação atendidas em unidades básicas de saúde(31)	Lima, Paiva e Amorim	2010	J Health Sci Inst
10	Vivenciando o processo educativo em enfermagem com gestantes de alto risco e seus acompanhantes(32)	Zampieri	2001	R. Gaúcha Enferm
20	Attitudes of Swedish midwives towards management of extremely preterm labourand birth(33)	Danerek et.al	2012	Midwifery

Source: Designed by the authors

health, monitoring and vigilance to prevent or to provide an early diagnosis of possible premature labor among these pregnant mothers⁽¹²⁻¹⁶⁾.

In this sense, there are high levels of child morbimortality rates, the rates of child illnesses and syndromes related to low weight at birth and prematurity cases, which motivate the nursing actions towards the high-risk pregnant mothers.

The content identified demonstrates that quality prenatal care contributes to a better follow up of the high-risk pregnant mother and her general satisfaction with her state; however, the strategies used did not contribute to reducing the number of premature births⁽¹²⁻¹⁶⁾, as the potential of prenatal care to reduce the prematurity rate, as well other complications during pregnancy, depends on the compromise of the pregnant mothers to the consultations and her willingness to communicate significant symptoms and keep up with the guidelines⁽¹⁵⁾.

Class 2 – Specialized nursing care of high-risk pregnancy mothers

It is composed of 116 ECU, representing 17.9% of the corpus, and it is associated with class 5. The most frequent words are: nursing, documentation, activity, plan, intervention, and NIC, found in articles 05, 14, and 18 (Table 1).

These words portrayed the nursing care as an autonomous action based on scientific knowledge. Thus, the nursing process follows the technical-scientific model that guides and systematizes the work of the nurse, promoting continuous and qualified care, permitting the organization of the conditions to its fulfillment, and recording the provided assistance⁽¹⁷⁻¹⁹⁾.

The plan of individualized care held in the nursing process was seen to be effective in developing interventions and achieving adequate results biologically, psychologically, and socially enabling differentiated and humanized care.

Class 3 – The educational role of the nurse to high-risk pregnancy mothers

In this class there are 123 ECU, comprising 18.98% of the corpus, and presenting a proximal relationship to class 4 (therefore, opposite to class 1). The most significant words in this class are: evaluation, cost, result, counseling, support, and guidance, taken from articles 11, 13, 08, and 02 (Table 1).

The articles that are part of this section suggest a care model to the high-risk pregnant mothers, as the nurse takes the role of teaching and counseling to promote healthy behavior, motivating an active participation, giving support to decision-making, and strengthening the social network^(5;20-22).

Considering the differentiated experience of the high-risk pregnancy, the use of educational actions throughout the pregnant-puerperal cycle is fundamental. The nurses must assume the position of educators, who share their understanding of women's autonomy and preparation, including for her family members, to experience the pregnancy, the birth, and the puerperal^(5;20-22).

It is composed of random clinical essays, with the goal of evaluating the results and costs of actions of orientation and education in health, which is conveyed in results that demonstrate that these actions are beneficial. They do not generate extra costs, enable individualized care, and fulfill the requirements of the pregnant mothers.

Class 4 – Nursing strategies to care for the high-risk pregnancy mothers

This represents 12.81% of the corpus, with 83 ECU, presenting a proximal relationship to class 3; and it is in opposition to class 1. The words that are highlighted are: to visit, home,

telephone, and Advanced Practice Nursing (APN), extracted from articles 06, 17, 12, and 15 (Table 1).

For professionals in APN, it was considered that those with a master's degree specialized in care practices for high-risk pregnant mothers and newborns. The actions involving an APN include: evaluation of the physical and emotional state of the pregnant mother and her partner to deal with pregnancy risks, identification of the supporting systems, monitoring fetal movements, and evaluation of family adaptation to the newborn⁽²³⁻²⁶⁾.

The strategies used, such as home consultations and weekly telephone calls (or whenever necessary), forming the diagnosis of high-risk until the sixth week of life, were used by the advanced practice nurses to monitor and support the high-risk pregnant mothers at home. These proceedings enable adequate interventions from the moment the health issues are recognized by the pregnant mothers, reducing early or unnecessary hospitalizations⁽²³⁻²⁶⁾.

The proximity with classes 3 and 4 is seen by the autonomy of the nurse in the care of high-risk pregnant mothers, and by the use of light technologies. Both other classes are close to class 1, in that the motivation to offer nursing assistance and the use of the resources mentioned in classes 3 and 4 is the reduction of low weight at birth rate, prematurity rate, and as a consequence, the child morbimortality rate.

Class 5 – The nurse as the multi-professional assistant for the high-risk pregnancy mothers

This class gathers 94 ECU, corresponding to 14.51% of the corpus. The most representative words of this class are: team, member, assistant, social, nutritionist, and physician, taken from articles 04, 01, and 16 (Table 1).

These articles present the work of the multi-professional team that assists the high-risk pregnant mothers in their prenatal consultations, the psychosocial and nutritional evaluation, the education in health, and the counseling before, during, and after birth⁽²⁷⁻²⁹⁾. They consider the multidisciplinary approach, based on the shared communication, the experience, and the decision-making as the strongest elements of multi-professional assistance^(27;29), which have the potential to prevent and/or resolve a multitude of issues associated with pregnancy⁽²⁸⁾.

The close connection to class 2 can be perceived by the fact both present the role of the nurse in the health services. In class 2, the nurse is the manager of the care practices who is responsible for the systematization of the services; and in class 5, the nurse is a member of a multi-professional team. In both, the goal is to give effective attention to the real health necessities of the pregnant women and their families.

Class 6 – The nursing care context in high-risk pregnancies

Class 6 was the first one to be built, with 18.21% of the corpus, grouping 118 ECU. The most significant words were taken from articles 21, 19, 10, and 20 (Table 1), which are: death, professional, loss, moment, feeling, experience, action, decision.

This lexicon expresses the experiences of nurses in the process of caring for pregnant mothers at risk; it is considered a stressful situation due to the risks the mother and the child are under⁽³²⁻³⁵⁾, making theoretical-practical knowledge indispensable, as well the sensibility to understand the necessities of the health client^(30;33).

They also explore the importance of the work of nurses to ameliorate the impact on the

life of women and their family members upon a diagnosis of a risky pregnancy⁽³¹⁾ and the influence of the action and the decision in a timely manner on the results of this pregnancy⁽³³⁾.

Henceforth, the context of nursing care for the high-risk pregnant mother is filled with feelings of fear and uncertainties that require technical-scientific knowledge, an understanding of the problems faced by these pregnant women, and the necessary timely action that contributes to consolidating qualified care practice, with satisfactory health results for both the mother and the fetus.

CONCLUSIONS

The reading of the selected studies permitted the following observations regarding publications on the work of the nurse in caring for high-risk pregnant mothers. The retrospective (1985 to 2015) shows high levels of morbimortality rates among mothers and children with regards to various health issues, which influences the development of strategies to reduce the incidence of such issues, and their social consequences.

It was evident that the prenatal stage was the most frequently used for interventions, that home visits and telephone calls contribute to monitoring, vigilance, and the reduction of hospitalizations of high-risk pregnant mothers, and that education in health and counseling during the consultations increases the satisfaction of the pregnant mothers.

The individualized care plan guarantees an appropriated care to the biopsychosocial necessities. Meanwhile, the systematization of assistance organizes the work of the nurse, guiding the identification, planning, execution, and evaluation of the interventions. Therefore, the nurse is seen as the manager of care and a member of the multi-professional team.

Based on this research, it seems promising that high-risk pregnant mothers can be assisted in their homes with quality prenatal care, family support, a multi-professional team, permitting the use of light technologies, thus stimulating their active participation by using humanized, holistic, and personalized care.

The results show the necessity to amplify understanding related to high-risk pregnancies, besides systematizing and publicizing the nursing care actions towards these mothers, as well as the results achieved through the proposed interventions, especially in the light of the Brazilian scenario, once a hegemony of international articles was observed, published in English and coming out of Brazil.

Another issue is that not all studies were available in free databases, which limits the acquisition of information, as few professionals have access to paid databases, a reality once out of undergraduate and graduate programs. In this element, it was found a fragile situation, relevant to this integrative review.

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PARTICIPATION OF THE AUTHORS

Antonia Regynara Moreira Rodrigues participated in the concept, collection, analysis, data interpretation, design and approval of the final version; Dafne Paiva Rodrigues participated in the conception, elaboration, critical review of the content, and approval of the final version; Aleide Barbosa Viana, Letícia da Silva Cabral and Maria Adelaide Moura da Silveira participated of data collection and analysis, critical review of content, and approval of the final version.

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